



KARACHAGANAK  
SUSTAINABILITY  
REPORT  
2017



# KARACHAGANAK SUSTAINABILITY REPORT 2017

## «TOWARDS SUSTAINABLE FUTURE»

This is the tenth sustainability report in a series of publications issued annually by Karachaganak Petroleum Operating B.V. Kazakhstan Branch (KPO). The Report outlines in detail our 2017 performance in three pillar areas of sustainable development: environmental, social and economic. Furthermore, here we disclose our management approach, results of engagement with stakeholders through innovative partnerships, social and environmental initiatives and projects.



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OUR ACHIEVEMENTS IN 2017





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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.

As a business, we consider our contribution to sustainable development to be:

- Minimising impacts and maximising opportunities linked to its presence;
- Considering the long-term consequences of its decisions;

- Engaging its stakeholders in a constructive dialogue; and
- Incorporating strong governance and transparency.

We are committed to the principles of sustainable development as set by 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".

In recognition of the Republic of Kazakhstan's commitment to the United Nations' sustainable development goals (SDG), we consider their achievement through implementation of the principles set by our Sustainable Development Charter (presented on Pic.№1).

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



REPORT SCOPE AND BOUNDARIES GRI 103-1, 102-1, 102-50, 102-51, 102-52

The boundaries of 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).

This report represents an overview of our indicators for 2017 and plans for the following year. The data disclosed in the Report is presented in comparison with previous years to show our sustainability journey and commitment. The document traditionally describes both achievements and issues. Our material topics are clearly seen from the Contents of the Report. For each presented material topic, we have provided an overview of our approach and progress across the reporting period. In this way, readers get a clear view of how we address our most material impacts.

Our Sustainability Report for 2016 was issued in September 2017. All our previous sustainability reports are available on our website [www.kpo.kz/sustainability](http://www.kpo.kz/sustainability) and at the Corporate Register website [www.corporateregister.com](http://www.corporateregister.com), one of the largest global online directories for corporate responsibility reports.

GLOBAL REPORTING INITIATIVE GRI 102-54

This Report has been prepared in accordance with the latest Standard of the Global Reporting Initiative (GRI) in the "core" option. KPO reports from 2013 through 2016 have been issued in accordance

with the fourth Guideline of the Global Reporting Initiative (GRI G4). KPO was one of the first companies in Kazakhstan to have applied the requirements of the GRI Guidelines G4. Earlier publications were done in line with the GRI Guidelines 3.

When preparing the input materials we worked to ensure the report contains the required level of transparency and quality required by the GRI Standard.

INDEPENDENT ASSURANCE GRI 102-56

We believe that independent assurance helps us maintaining a fair level of transparency and accountability.

Reliability of information presented in the Report is ensured by independent verification done by a third party. To this aim KPO has been hosting a group of auditors of the expert organization since 2009. The process of external assurance implies a limited level of assurance of the content of the Report in accordance with the International Standards on Assurance Engagement (ISAE) 3000. In result of the verification audit, an assurance certificate of reliability of information is issued, which is attached to the final version of this Report.

Verification of the Report for 2017 was conducted by external assurance provider, EY. The scope and terms for the limited assurance of information are specified in the Independent Assurance Report of the Karachaganak Sustainability Report 2017 on pages [128-129](#).



Incentives event on the Sustainability Report 2016





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LETTER FROM GENERAL DIRECTOR GRI 102-14, 102-15, 102-50

Dear readers,

It is my pleasure to present to you the tenth anniversary issue of the Karachaganak Petroleum Operating B.V. Sustainability Report.

In this Report we disclose the details of our performance in operational, social, environmental and economic areas across the aspects material for us.

Our ultimate goal is to develop the Karachaganak Field in an environmentally and economically sound manner through continuous engagement with our key stakeholders. In our activities we remain committed to increasing opportunities for the socio-economic development of local communities. We have been focussing on application of cutting edge technologies while adhering to the highest industrial safety and environmental protection standards and fostering our long term relationships with the RoK authorities.

2017 marked the 20<sup>th</sup> anniversary since the signing of the Karachaganak Final Production Sharing Agreement (FPSA), which regulates the relationship of Karachaganak's international consortium with the Republic of Kazakhstan.

2017 was a year when KPO managed to achieve a truly outstanding performance in many areas. We produced 145.8 mln barrels of oil equivalent, the highest record volume in the KPO history. Our safety performance was exemplary. In spite of a significantly increased level of activity, we will strive to maintain stable operations and safe workplace for our employees in 2018.

KPO environmental performance has remained at the world class level, for instance, the specific indicator of CO<sub>2</sub> emissions totalled 63 tonnes per thousand tonnes of hydrocarbons production, and the

GHG emissions reduction volume reached 447 thousand tonnes of CO<sub>2</sub>-equivalent. These were achieved thanks to the successful application of emission reduction processes and technologies.

Among the key achievements, it is worth noting that the relocation of Beryozovka and Bestau villages which started in 2015 was successfully completed at the end of 2017. This is an important milestone for KPO that clearly demonstrates the Venture's commitment to sustainability and its responsibility principles.

A detailed description of our performance in other areas is presented in the Executive Summary of this Report. Of note, as of April 2018 the role of KPO General Director has rotated from Eni – Renato Maroli to Shell – Edwin Blom with subsequent changes in the top management throughout the year 2018.

In the years to come KPO will build on the foundation of excellence established by predecessors when operating the giant Karachaganak Field for the benefit of the Republic of Kazakhstan and the partner companies. This can never be achieved without a trusting relationship with our employees, authorities, local communities and other stakeholders.

We welcome you in reading this Report and hope it will prove helpful in better understanding of how we manage Karachaganak, evolve along the way, overcome the odds and celebrate successes that go hand in hand when operating a facility of such magnitude and complexity.

**Edwin Blom**  
KPO General Director



EXECUTIVE SUMMARY GRI 102-15

KPO sustainability report discloses the Venture's sustainable development aspects and its main achievements in environmental, economic and social areas. We report on the issues, which matter most to our business and our stakeholders. We have specifically highlighted the material topics in the Contents of the Report. <sup>GRI 103-1</sup>

The 2017 reporting year was a successful year for KPO both in terms of delivery of our production targets and sustainability commitments. We continued working relentlessly towards the protection of the natural environment and provision of a safe and fulfilling workplace for the employees. Protection of health, safety and the environment for those who live and work in the areas where we operate remains our top priority.

It is worth noting that in 2017 KPO Sustainability Report 2016 took the 1st place in the National Rating and in the VII Contest of Annual reports in the nomination 'Best Sustainability Report'. The contest of financial and non-financial reports is conducted by a specialized rating agency RAEX in conjunction with the Kazakhstan Stock Exchange with the aim of promoting Kazakhstani brands and enhancing the quality of corporate reporting.

Such recognition means a lot to KPO team, as it seems to measure how far we have gone along the journey and motivates the Venture to make one step further in raising the quality bar. This would eventually contribute the overall success of non-financial reporting as an important communication instrument in the energy sector's dialogue with the society.

SAFETY, SECURITY AND ASSET INTEGRITY

Our approach is to reduce safety risks as low as reasonably practicable and to minimise potential impacts of incidents. We consider safety to be one of the most relevant themes for sustainability in the company, and strive to promote process and personal behaviour improvements.

In 2017, we had three incidents, which resulted in injuries. The lost time injury (LTI) rate in KPO and its contractor companies reached 0.08 and total recordable injury (TRI) rate made 0.11, which was over 50% reduction compared to 2016. This marked the best ever result achieved in the KPO's history.

Our Road traffic incident rate (RTI), on the other hand, increased from 0.02 in 2016 to 0.05, with two RTIs in 2017 versus one in 2016. The numeric increase can also be explained by the fact that KPO reporting boundaries were adjusted in 2017 to comply with the IOGP's guidelines (ref. Safety Performance chapter).

Process Safety and Asset Integrity improvement efforts progressed during the year with the focus on the knowledge of individual emerging risks that can be stopped through safety barriers in place to prevent or control major accident hazard event. The "health status" of the designed safety barriers were continuously assessed to identify holes in the barrier and avoid they become actual events.

In 2017, works on the implementation of the Security Management System progressed significantly with 4.5 km of new fence installed and the old fencing of Unit 2 and EOPS fully replaced.

PRODUCTION AND SALES

In 2017, around 95% of liquid production was sold as stabilised oil to the Western markets via the Caspian Pipeline Consortium (CPC) pipeline, the Atyrau - Samara pipeline and further through the Transneft system routes.

Nearly 0.16 mln tonnes of oil were exported via the Atyrau-Samara pipeline making a record low volume in KPO history. At the same time, KPO managed to minimise the delivery of unstabilised condensate to Orenburg down to 624 thousand tonnes. This is a record low annual delivery of unstabilised condensate to Orenburg resulting in the increased sales revenue due to diversion of liquids from Orenburg into CPC route.

In order to maintain the reservoir pressure and to enhance the liquids recovery rate, within 2017 KPO re-injected ~9.3 bln cubic meters of gas into the reservoir, a volume equivalent to about 49% of the total gas extracted.

We continued our program of drilling wells and hooking them up to our production facilities with a focus on production optimisation. Five new wells were successfully drilled and completed with swelling packers. One well was best-in-class and two wells were top quartile thanks to the continued innovation and study to reduce dynamic vibrations in the bottom hole assembly that lead to a longer durability of logging while drilling and to the flat time reduction.

ENVIRONMENTAL PERFORMANCE

We use a comprehensive Environmental Management System (EMS) to identify and control environmental impacts and continuously improve our performance.

In July 2017, a certification audit was conducted in KPO for compliance with the new ISO 14001: 2015 standard, following which the effectiveness of the environmental management system was confirmed by the auditors of the authoritative international organization Bureau Veritas.

In 2017, KPO was one of the first in Kazakhstan's energy sector to receive the ISO 50001: 2011 compliance certification thus confirming adherence to the basic principles of energy saving and energy efficiency.

Emissions reduction, waste management and application of new technologies are among the company's focus areas. In 2017, KPO achieved a world-class gas utilisation rate of 99.92%.

In June 2017, KPO's 'Water reuse in the Karachaganak field' was acknowledged among the best environmental and best practice projects at Eni Safety and Environmental Award ceremony in Milan. The project highlighted KPO's efforts to reduce a fresh water intake by ensuring the wastewater is discharged into isolated holding ponds. This should prevent pollutants from entering into surface



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water, ground water and soil. The project was recognized as best practice commendable for further implementation in other assets of Eni.

On the top of that, in February of the current year KPO was named the 2nd most environmentally responsible oil & gas company in Kazakhstan. The ceremony was co-hosted by the Russia's World Wildlife Fund for Nature (WWF) and CREON Group with the support of the RoK Ministry of Energy in partnership with the UN Environment Programme for Central Asia (UNEP-CA), CREON Capital and National Rating Agency.

Besides meeting the stringent standards set by the authorities and our shareholders, we also try to pull environmental issues broader than just KPO. Starting from 2017, we have established an annual 'Uralsk Green' environmental forum in Uralsk, where we discuss the way forward and developments with the authorities, contractors and NGOs. We are acutely aware that what is good enough today may not be meeting societal expectations tomorrow.

EMPLOYEE DEVELOPMENT

Fair and trusting relationships with employees are more than just an ethical and legal requirement for us – without them we would not be able to conduct our business successfully.

We are competitive and innovative only as long as we can attract and bind highly qualified employees. To this end, we are supported by programs and promotional measures at each and every phase of an employee's individual training and career path.

As part of the Local Content in Staff programme, 10 expatriate positions were nationalised, i.e. substituted by local employees. Additionally, 22 positions previously held by expatriates were abolished. As of end 2017, local employees made up 91% of the total staff.

Started at the end of 2016 the Enhanced Development Programme for 2017-2020 is intended to create conditions for the Company's employees to acquire knowledge and skills necessary for sustainable professional advancement and further development. The 3-year Programme is an integral part of a plan aimed at creating a personnel reserve, which would allow for the continuity of human resources planning and the delivery of the 2015-2020 Programme for the increase of local content in personnel.



Since the signing of the Final Production Sharing Agreement (FPSA), over USD 200 mln has been invested in the training of national workforce while utilising best international training and development institutions as well as Company's own training facilities.

INVESTMENT INTO ECONOMY

KPO puts significant efforts to maximize local content in the Karachaganak project in accordance with the FPSA and KPO Local Content Development Policy.

In the reporting year, the share of local content in KPO's procurement of goods, works and services reached 54.1%, which in monetary terms amounted to some USD 400 mln. In total, since the signing of the Final Production Sharing Agreement in 1997, the share of local content in KPO's procurement has exceeded USD 6.54 bln.

KPO's contribution into development of local content was highly commended by state the authorities and industry associations alike. For instance, Renato Maroli, the previous KPO General Director was awarded with the Kurmet Order. This State Award of Honour was granted by the President Nazarbayev in recognition of Renato's outstanding performance while managing the Karachaganak Project, which is regarded as a locomotive of the region's socio-economic development.

As part of a series of interregional cooperation initiative, in 2017 KPO executives visited the country's three regions in order to explore the local manufacturing capabilities, mainly represented by oilfield service companies and machine-building enterprises.

Social infrastructure projects commissioned by KPO during 2017 included a Sports and Health Centre in Aksai, new street lightning and roads in Uralsk and a fully refurbished Children's Arts School in the Burlin District, WKO.

COMMUNITY ENGAGEMENT

Our intention is to add value to the communities in which we operate – through local capacity building and community development initiatives.

It is absolutely essential for the Venture to maintain a dialogue with its local stakeholders. Village Councils have long become one of the most effective engagement tools. 17 meetings were held throughout 2017 in the five rural districts neighbouring the Karachaganak Field (Priuralnyi, Uspenovskiy, Berezovskiy, Zharsuatskiy, Pugachyovskiy). Apart from this, nine Public Hearings were held in Aksai primarily focused on the Environmental Impact Assessment (EIA) for well tie-ins and construction projects.

In 2017, the resettlement of Berezovka and Bestau, which commenced in 2015, was successfully completed. The project was carried out in accordance with the Final Production Sharing Agreement (FPSA), current legislation of the Republic of Kazakhstan and international standards for resettlement (IFC Performance Standard 5).

The resettled communities had been offered several relocation and compensation options to choose from. As a result, 60.5% of residents chose an apartment in a multiple block in Aksai, 26.5% – a detached house with a land plot in Araltal, a massive some 5 km off Aksai, and 13% preferred cash compensation.



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

Over the last 10 years, that KPO has been publishing its annual Sustainability Report, the document has become the Venture's hallmark that set standards across the country's business community. While working on the report KPO draws on the rich experience of its parent companies and follows the requirements of the universally recognized best world practice in the field of non-financial reporting.

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).

The Sustainability reporting process involves an information exchange, data gathering and interdisciplinary communication both internally and externally.<sup>GRI 103-1</sup> Every time we identify a number of topics, which are material for KPO and continue sharing their dynamics. Material topics are presented in the table № 1. They always tend to address issues relative to 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<sup>1</sup>. There are internal or/and external manifestations of such impacts.<sup>GRI 102-43</sup> The significance of material topics can be seen from the Report's contents, and the applicable GRI standards are determined based on the management approaches and key performance indicators used in the Company.

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, public hearings, audits, and by directly addressing them to the Company.

At the same time, we develop goals and comparative criteria that allow us to quantify how various KPO units contribute to sustainable development. When doing the content, we also analyse risks and opportunities.

Inside the printed copies of the 2016 Sustainability Report there were loose-leaf feedback forms for readers to fill. Last year, our Parent companies and business partners were the most active readers and who did most of the feedback. Their answers have helped us more accurately determine the Report's strengths and weaknesses.

We aim to continuously raise our stakeholders' awareness of the material topics disclosed in the Report. For this purpose, a training session titled "KPO Non-Financial Reporting: Mission, Current Status and Next Steps" was organised in November 2017 in Aksai for the employees involved in the preparation of the annual Sustainability Report. The training was conducted by the experts of EY consultancy in order to refresh their previous knowledge, to talk about the latest GRI Reporting Standard and to analyse the experience gained from the previous report. In addition, the attendees were presented the highlights of how Kazakhstan fared in promoting UN Sustainable Development Goals. At the end of the session, they were interviewed and there was an overwhelming consensus that the report was a key instrument for building the most effective communication with stakeholders.

TABLE № 1. MATERIAL TOPICS OF SUSTAINABLE DEVELOPMENT GRI 102-47

		MATERIAL TOPICS
MANAGEMENT APPROACH		Corporate governance and management
SOCIAL AREA	LABOUR PRACTICES AND DECENT WORK	Labour protection and safety (also material for our contractors)
		Health
		Employment and compensation
		Personnel development and training
		Social, cultural and gender diversity, equal opportunities
		Labour / Management relations
		Labour practices and grievance mechanism

<sup>1</sup> Person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity (ISO 9000:2015).



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TABLE № 1. MATERIAL TOPICS OF SUSTAINABLE DEVELOPMENT (CONTINUED) GRI 102-47

		MATERIAL TOPICS
SOCIAL AREA	HUMAN RIGHTS	Security practices
		Freedom of association and collective bargaining
		Human rights training for contractors
	SOCIETY	Anti-corruption
		Community grievance redress
		Community relations - impact assessment and mitigation
		Community emergency preparedness - mechanisms of engagement
		Asset integrity and process safety
ENVIRONMENTAL AREA		
Reduction of GHG and pollutants		
Air quality monitoring		
Management of waste and effluents		
Spills		
Water use		
Energy management		
Biodiversity and ecosystems conservation		
Environmental grievance mechanisms		
Environmental investments		
ISO 14001 and ISO 50001 Certification		
ECONOMIC AREA		
Increase of local content in staff		
Impact of infrastructure investments in the territories with our presence, including support for local communities		
Electrical power supplies to the local communities		
Local content development and its share in procurement of goods and services		
Procurement practices and supply chain		
Transparency of payments to the government (EITI)		
Estimated proved reserves and production		



STAKEHOLDER ENGAGEMENT GRI 102-42, 102-43

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 million ties and are genuinely interested to hear their opinions.

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 are presented on the picture № 2.

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 independently determine their stakeholders and their experience of engagement is disclosed in this Report.

The Company has various feedback channels regarding the Sustainability Reports, including telephone and e-mail communications through Sustainability@kpo.kz address, as well as KPO official website www.kpo.kz. All comments and suggestions are reviews in preparation of the next Report.

PIC. № 2. OUR STAKEHOLDERS GRI 102-40



As stated above, KPO methods and forms of stakeholder engagement vary from correspondence and meetings to conferences, forums, open days, social surveys and other methods of communication.





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Table №2 provides a brief overview of the modes of engagement with different stakeholder groups during the 2017. This Chapter does not cover all interactions. More detailed and point-by-point examples of interaction on material topics are disclosed directly in the Report chapters (see GRI 102-44 in the GRI Standards Content Index).

TABLE №2. OVERVIEW OF STAKEHOLDER ENGAGEMENT IN 2017 GRI 102-13, 102-43, 102-44

ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
Parent Companies (Eni, Shell, Chevron, Lukoil, KazMunayGas)		
<ul style="list-style-type: none"><li>Board of Directors meetings</li><li>ConCom meetings</li><li>OpCom meetings</li><li>ConCom Sub-Committees meetings</li><li>OpCom Sub-Committees meetings</li></ul>	<ul style="list-style-type: none"><li>Safety and security issues;</li><li>Production performance optimization;</li><li>Annual Work Program and Budget, additional funds request (AFR), authorisation for expenditure (AFE); 5-year Business Plan;</li><li>Environmental protection issues;</li><li>Major and minor development projects;</li><li>Transportation, processing and sales of petroleum products;</li><li>In June 2017, the project "Water reuse in the Karachaganak field" developed by KPO was mentioned among the best environmental projects at the recent Eni Safety and Environmental Award ceremony. The KPO project presented in the Environment category was considered as best practice commendable for further implementation in other assets of Eni.</li></ul>	<ul style="list-style-type: none"><li>Security practices</li><li>Estimated proved reserves and production</li><li>Local content development and its share in procurement of goods and services</li><li>Water use</li></ul>
PSA LLP Authority		
<ul style="list-style-type: none"><li>Joint Operating Committee (JOC) meetings</li><li>Joint Procurement Committee (JPC) meetings</li><li>Joint Marketing Committee (JMC) meetings</li><li>Local Content Sub-Committee meetings</li></ul>	<ul style="list-style-type: none"><li>Approval of the Annual Work Program and Budget, AFR;</li><li>Approval of contract assignment;</li><li>Approval of Social and Infrastructure projects.</li></ul>	<ul style="list-style-type: none"><li>Local content development and its share in procurement of goods and services</li><li>Impact of infrastructure investments in the territories with our presence, including support for local communities</li></ul>
Employees		
<ul style="list-style-type: none"><li>Corporate events, contests, award ceremonies</li><li>Meetings, written requests</li></ul>	<ul style="list-style-type: none"><li>Quarterly and annual HSE Awards ceremony for KPO employees and contractors on achievements as part of improving the safety culture.</li><li>Safety Stand Down meetings with participation of employees of KPO and contracting organizations.</li></ul>	<ul style="list-style-type: none"><li>HSE</li><li>Personnel development and training, increase of local content in staff</li></ul>



ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
Employees		
<ul style="list-style-type: none"><li>Annual communication and training on the Code of Conduct and Conflict of Interest Policy</li><li>Online training on health, safety, security, civil defence topics, etc.</li><li>Electronic surveys of employees' opinion on various topics</li><li>Meetings and forums with students</li><li>Communication via corporate media, corporate intranet portal, issuing and distribution of brochures, electronic screens/ displays in the Company's offices</li></ul>	<ul style="list-style-type: none"><li>In January 2017, KPO reviewed the results of 'The Best Fire Station' and 'The best emergency rescue team' annual contest among Fire Stations at KPO Units. Evaluation criteria for the contest were the following: level of professional training of fire fighters, level of emergency response and performance, condition of emergency equipment, level of interaction between the locations and level of fire prevention. The employees of the Fire Station №26 and №31 received commemorative awards and certificates for their high professional performance, in ensuring fire safety, preventing and eliminating emergencies at KPO facilities.</li><li>In September 2017, KPO held an awarding ceremony on the results of the contest 'The Best Environmental Video' on occasion of the World Environment Day. The aim of this competition was to accumulate all good ideas, suggestions and recommendations for environmental initiatives of KPO employees and contractors. Some videos made at a professional level will be used for production of KPO environmental documentaries in the future.</li><li>In October 2017, KPO held a ceremony dedicated to the 10th Anniversary of Graduates Development Programmes. This Programme is based on OPITO Oil &amp; Gas Academy's international standards with an aim to prepare young engineering-technical specialists: operators and maintenance technicians, drilling supervisors' assistants and translators. By end of 2017, over 300 people have completed training followed by subsequent successful employment in various departments of KPO. This programme is a good example of advanced experience transfer from the Karachaganak Partners to the Republic of Kazakhstan.</li><li>In September 2017, KPO held a winners award ceremony for the Competition on Best Production Efficiency and Optimization ideas.</li><li>Application by employees about operational and social and labour matters to HR and via the Hotline.</li><li>Online survey of employees' opinions on the quality of medical insurance; survey of the IT&amp;T department on the quality of their helpdesk services;</li><li>Online training on health, safety, security, civil defence topics, etc.</li><li>Annual celebration of the Languages day of the People of Kazakhstan.</li></ul>	<ul style="list-style-type: none"><li>Labour practices grievance mechanisms</li><li>Labour / Management relations</li><li>Social, cultural and gender diversity, equal opportunities</li></ul>





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TABLE №2. OVERVIEW OF STAKEHOLDER ENGAGEMENT IN 2017 (CONTINUED) GRI 102-13, 102-43, 102-44

ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
State bodies (ministries, local and regional regulatory authorities, customs, courts )		
<ul style="list-style-type: none"><li>Working meetings, sessions, visits</li><li>Reports</li><li>Forums, conferences</li><li>Rewards</li><li>Integrated emergency exercises</li><li>Participation of KPO in the Ministries' Working Groups</li></ul>	<ul style="list-style-type: none"><li>In May 2017, KPO held the first in West-Kazakhstan Oblast International Environmental "Uralsk Green Forum", on occasion of the World Day of Environment Protection. This Forum, organised with support of Ministry of Energy of the Republic of Kazakhstan, West-Kazakhstan Akimat and WKO Specialised Environment Protection prosecutor's department, will promote establishing a platform to discuss current approaches, scientific expertise, research and data communication of high technology in energy saving and enhanced energy efficiency.</li><li>In June 2017, KPO participated in the 8th International Energy Forum for Sustainable Development as well as in the ministerial conference 'Meeting the Challenge of Sustainable Energy'. Apart from this, KPO participated in the annual Astana Economic Forum and the World Scientific and Engineering Congress WSEC-2017 "Future Energy: innovation scenarios and methods of their implementation".</li><li>In June 2017, KPO took part in the GE conference "Moving forward, fuelling the future" conducted as part of the EXPO-2017. The conference was attended by over 100 delegates representing the various RoK authorities, international and regional companies. The main objective of the event was discussion of prospects of development of the gas, transportation and machinery industries. The event was the first one of this kind.</li><li>In October 2017, KPO obtained positive state environmental conclusions of State Environmental Expert Review to the Emissions Projects for 2018. An on-site meeting of the State Environmental Experts Council was held on 12 October. The meeting purpose was to reconsider the 2018 MPE Project and 2018 MPD Injection Projects, discharged with wastewater into underground horizons, in 2018. Such event was the first one of this kind in WKO. In future it is planned to adopt such practice at other major ventures as visual introduction with company facilitates more objective analysis.</li><li>In February 2017, KPO participated in an expanded meeting of the Board of the Ministry of Energy of the Republic of Kazakhstan.</li><li>In December 2017, on the eve of the RoK Independence Day several employees of the company were awarded by different honours. As per decree of the RoK President Nursultan Nazarbayev, Renato Maroli, KPO General Director, was awarded by Kurmet Award of Honour for his merits in the competent management of the Karachaganak project, which is regarded as the locomotive of the socio-economic development of the West Kazakhstan Oblast. Beibit Sabirov, Local Business Development Controller, was awarded by "Ерен еңбегі үшін" medal (For Distinguished Labour). A group of KPO employees was also awarded with medals from the RoK Ministry of Energy for their special contribution and labour merit, medals from KAZENERGY Association, breastplates, diplomas and letters of gratitude from the RoK Ministry of Energy.</li></ul>	<ul style="list-style-type: none"><li>Environment protection</li><li>Reduction of GHG and pollutants</li><li>Local content development and its share in procurement of goods and services</li></ul>



ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
Counterparties (suppliers / contractors, customers, banks)		
<ul style="list-style-type: none"><li>Forums, conferences</li><li>Work meetings, visits</li></ul>	<ul style="list-style-type: none"><li>In April 2017, Delegation of KPO headed by KPO General Director Renato Maroli, has visited the city of Aktoke. At the extended meeting attended by nearly 20 Aktoke based companies, KPO representatives shared information on perspectives for local content engagement in the supply chain of goods, works and services.</li><li>In May 2017, KPO held a Forum for Kazakhstan oilfield service companies and goods producers where discussed were issues of local content enhancement and the local business's potential involvement in the development of the Karachaganak field. In addition, local manufacturers and service providers were introduced with the current projects, implementation of which is planned in the near future, KPO pre-qualification procedure, as well as Early Tender and Trial Orders mechanism. During the Forum, the Memorandum of Understanding in cooperation on the development of machine-building for oil and gas industry between KPO, the WKO Akimat, JSC "NC "SEC "Oral" and the machine-building enterprises of the region was signed.</li><li>In August 2017, as part of the interregional interaction and cooperation KPO delegation headed by General Director, Renato Maroli, visited South Kazakhstan Oblast. During the visit, a Memorandum of Understanding was signed between KPO and Kentau Transformer Plant for the supply of local transformers, as well as a contract for the manufacture and supply of oil well cement between KPO's contractor - Baker Hughes and JSC Shymkentcement.</li><li>In August 2017, West Kazakhstan Oblast hosted a conference at EXPO-2017 with participation of KPO delegation where it presented its investment potential. The session was attended by numerous foreign and domestic companies, RoK ministries and agencies, diplomatic missions, JSC NC 'Astana-Expo - 2017' and Astana Akimat.</li><li>In September 2017, KPO held an HSE forum with its contractors. The forum's attendees were Shell and Agip Karachaganak representatives, KPO senior management and representatives of nearly 45 contractors.</li><li>In October 2017, in Almaty together with West Kazakhstan Oblast Akimat and PSA LLP, KPO delegation participated in the V International Investment Forum 'Almaty Invest 2017'. On the Forum's sidelines, an expanded meeting took place between the Akim of Almaty, WKO Akim and KPO General Director. During the meeting, among other issues, the parties discussed the Almaty based companies' potential involvement in KPO activities. During the Forum KPO signed a contract with the Almaty based Schneider Electric Ltd for the manufacturing of a modular power electric substation, and a long-term contract with KazSpo-N Ltd for the production of fireproof clothing for KPO personnel.</li></ul>	<ul style="list-style-type: none"><li>Local content development and its share in procurement of goods and services</li><li>HSE</li></ul>



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TABLE №2. OVERVIEW OF STAKEHOLDER ENGAGEMENT IN 2017 (CONTINUED) GRI 102-13, 102-43, 102-44

ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
Business partners (O&G companies, business associations)		
<ul style="list-style-type: none"><li>■ Conferences, forums, visits</li><li>■ Contests</li></ul>	<ul style="list-style-type: none"><li>■ In March 2017, KPO took part in the 6th Annual Conference "KazNefteGasService 2017" that was held in the city of Atyrau. During of the Conference a long-term contract for provision of repair and re-winding services of explosion-proof and non-explosion-proof electric motors was signed between KPO and oilfield services company "Yedil-Oral.kz", LLP.</li><li>■ In July 2017, representatives of Italian engineering and equipment manufacturers participated in the Forum jointly organized by KPO and the Italian Kazakh Chamber of Commerce of Milan, dedicated to strengthening of business capabilities of the Republic of Kazakhstan. The purpose of this event is to discuss the possibility of establishing joint ventures between Kazakhstani and interested Italian companies in engineering and manufacture of oil and gas equipment.</li><li>■ In July 2017, KPO took part in a forum with British manufacturers and oilfield service companies to attract UK capital and technologies and help establishing new industries and joint ventures. Company involvement in such forums is very useful as they expand the range of contacts for localization of oilfield services and open new opportunities for transferring best world technologies and practices to the economy of Kazakhstan.</li><li>■ In August 2017, KPO took part in the Forum on the sub-cluster development "Engineering for oil and gas industry in WKO".</li><li>■ In September 2017, KPO participated in "WestKazInvest-2017" IV International Investment Forum.</li><li>■ In December 2017, RAEX rating agency conducted the VII Contest of 2016 Annual reports where KPO Sustainability Report 2016 was ranked № 1 in Kazakhstan in the nomination 'Sustainability Report'. According to the agency experts, the KPO Report highlights the main aspects of sustainable development, including corporate governance and interaction with stakeholders, performance indicators in the economic, environmental and social spheres, detailed personnel policy and interaction of the Company with the local communities.</li></ul>	<ul style="list-style-type: none"><li>■ Local content development and its share in procurement of goods and services</li><li>■ Sustainability reporting</li></ul>
Media (national, regional, local)		
<ul style="list-style-type: none"><li>■ Regular interaction by correspondence, informing/responding to media inquiries, meetings, events and communication during visits of the RoK officials</li></ul>	<ul style="list-style-type: none"><li>■ In October 2017, KPO celebrated the 20th Anniversary of the signing of the Karachaganak Final Production Sharing Agreement (FPSA). Celebration festivities brought together representatives of republican and local authorities, KPO Partner Companies, KPO employees and Karachaganak veterans, community leaders and media. Starting from the moment of signing FPSA company managed to accomplish considerable achievements in production and social activities, including, but not limited to:</li></ul>	<ul style="list-style-type: none"><li>■ Multiple material topics</li></ul>

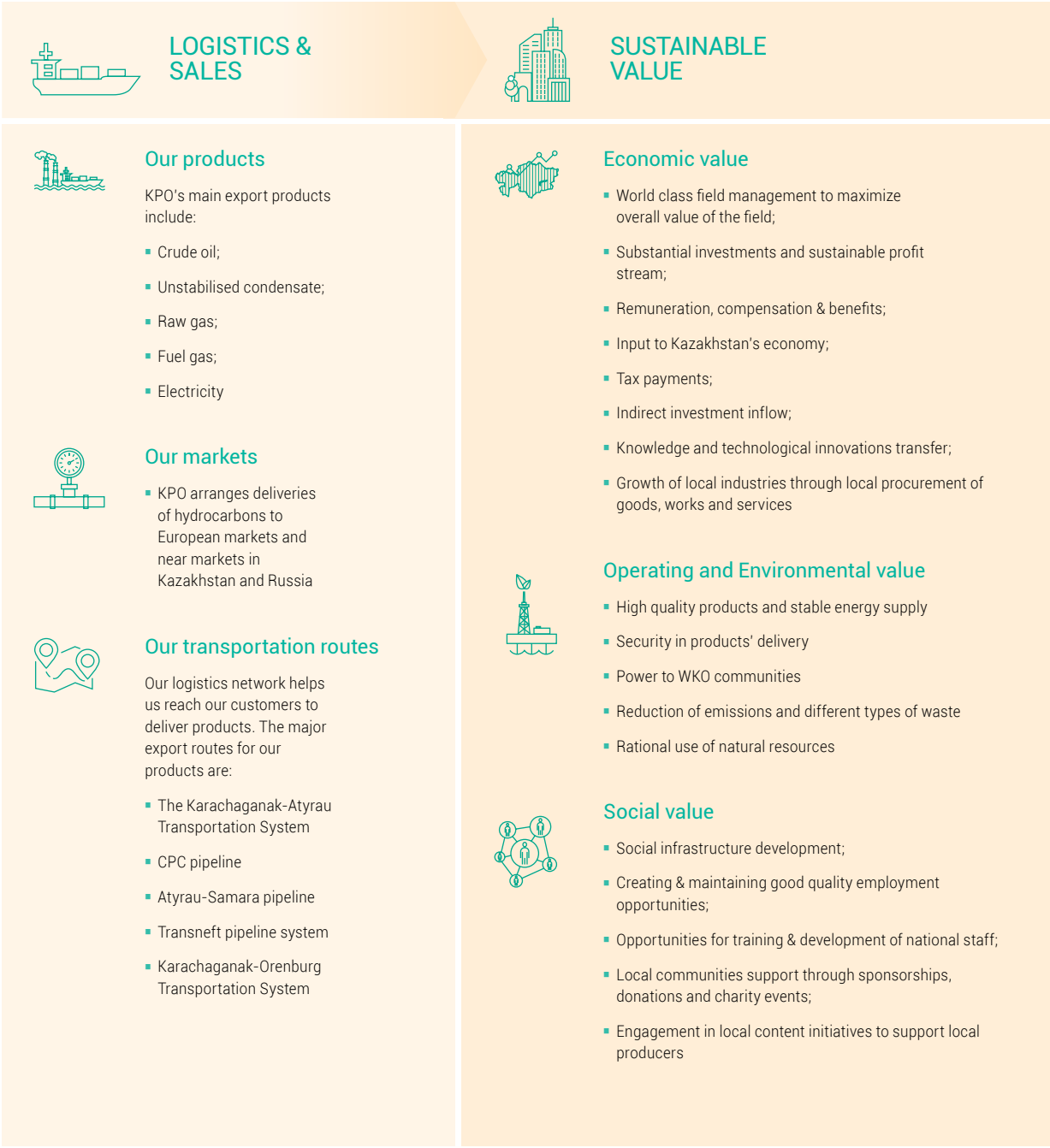


ENGAGEMENT MECHANISMS	MAIN ISSUES AND ENGAGEMENT EVENTS IN 2017	MATERIAL ASPECTS/ TOPICS
<ul style="list-style-type: none"><li>■ Communication via social networks, website, publications, interview, videos in different media</li></ul>	<ul style="list-style-type: none"><li>• the commissioning of an export pipeline and new facilities for the preparation and re-injection of raw materials;</li><li>• modernization of the field infrastructure;</li><li>• drilling a large number of new wells;</li><li>• investments in the development of social infrastructure in WKO and implementation of environmental measures;</li><li>• significant increase in the local content share in procurement</li></ul>	
Local communities (residents of Aksai town and nearby rural districts) NGOs (non-profit organizations, initiative groups, public foundations)		
<ul style="list-style-type: none"><li>■ Advisory councils,</li><li>■ Public hearings, social</li><li>■ Support activities for the local communities</li></ul>	<ul style="list-style-type: none"><li>■ 12 Village Councils were held with the local communities of the villages located along the perimeter of the Karachaganak field on their social and infrastructure support in 2017.</li><li>■ During 2017, KPO conducted nine public hearings with the participation of the region's public (representatives of the Burlin Region Akimat, deputies of the maslikhat, interested state agencies, representatives of the regional and district media) on the construction of new and modernization of existing production facilities (including wells, roads, facilities, waste recycling facilities, security systems, fencing, etc.) and assessment of their impact on the environment. All hearings were considered as successful.</li><li>■ During 2017, KPO Community relations team have held regular meetings with citizens of the Berezovka and Bestau villages on matters of the resettlement.</li><li>■ In September 2017, KPO announced the successful commissioning of a Sports and Wellness Centre constructed in Aksai as part of the annual social infrastructure programme.</li><li>■ In June 1 2017, KPO took an active part in the annual celebration of the International Children's Day, organized together with contractors. The event under the slogan "Our main concern is the safe future of our children!" was dedicated to road safety. At the end of the event, all children-participants received awards and gifts.</li></ul>	<ul style="list-style-type: none"><li>■ Local communities engagement, grievance redress;</li><li>■ HSE</li></ul>
Trade Unions		
<ul style="list-style-type: none"><li>■ Grievance mechanism for employees' appeals on social and labour issues to the Employees Relations unit of HR</li><li>■ Controllership</li><li>■ Collective Agreement</li><li>■ Sport and cultural events</li></ul>	<ul style="list-style-type: none"><li>■ Regular interaction of Company employees with Trade Unions' representatives on various issues of labour relations.</li><li>■ During the year, various competitions, tournaments, events for various sports, such as cross-country skiing, bicycle racing, football, volleyball, table tennis, chess, etc. were held.</li><li>■ Participation of employees in the citywide events, festivieis, neighbourhood clean-up days and other.</li></ul>	<ul style="list-style-type: none"><li>■ Labour practices grievance mechanisms</li><li>■ Social, cultural and gender diversity, equal opportunities</li></ul>



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KPO BUSINESS MODEL







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Karachaganak Operating Complex

The Kazakhstan Branch of Karachaganak Petroleum Operating B.V. (KPO) is an international oil and gas condensate company with production and exploration activities in Kazakhstan. KPO operates Karachaganak, one of the world's largest oil and gas condensate fields. It is located in north-west Kazakhstan covering an area over 280 km<sup>2</sup>. 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.

**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.

The details about the facilities can be viewed in our Sustainability Report 2014 (pp.6-8).

The hydrocarbons contain up to 4.5% of highly toxic and corrosive hydrogen sulphide (H<sub>2</sub>S), as well as carbon dioxide (CO<sub>2</sub>) which can be highly corrosive in certain conditions.

According to the latest Reserves Re-Determination Report for the Karachaganak field accepted by the RoK State Reserves Committee (GKZ) on 17.11.2017, it is estimated that the Karachaganak Field contains 13.3<sup>2</sup> billion barrels of liquids and 60.23 trillion cubic feet of gas, of which approximately 12% has been recovered to date. G4 – OG1

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.

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.

The total investment in development of the Karachaganak oil & gas condensate field as of 31.12.2017 since the signing of the FPSA in 1997 has totalled over USD 23.2 bln. The funds were invested in application of leading-edge technologies to maximize sustainable economic value and minimise environmental impact. As of end 2017, 4,421 people worked in the KPO organisation. GRI 102-7

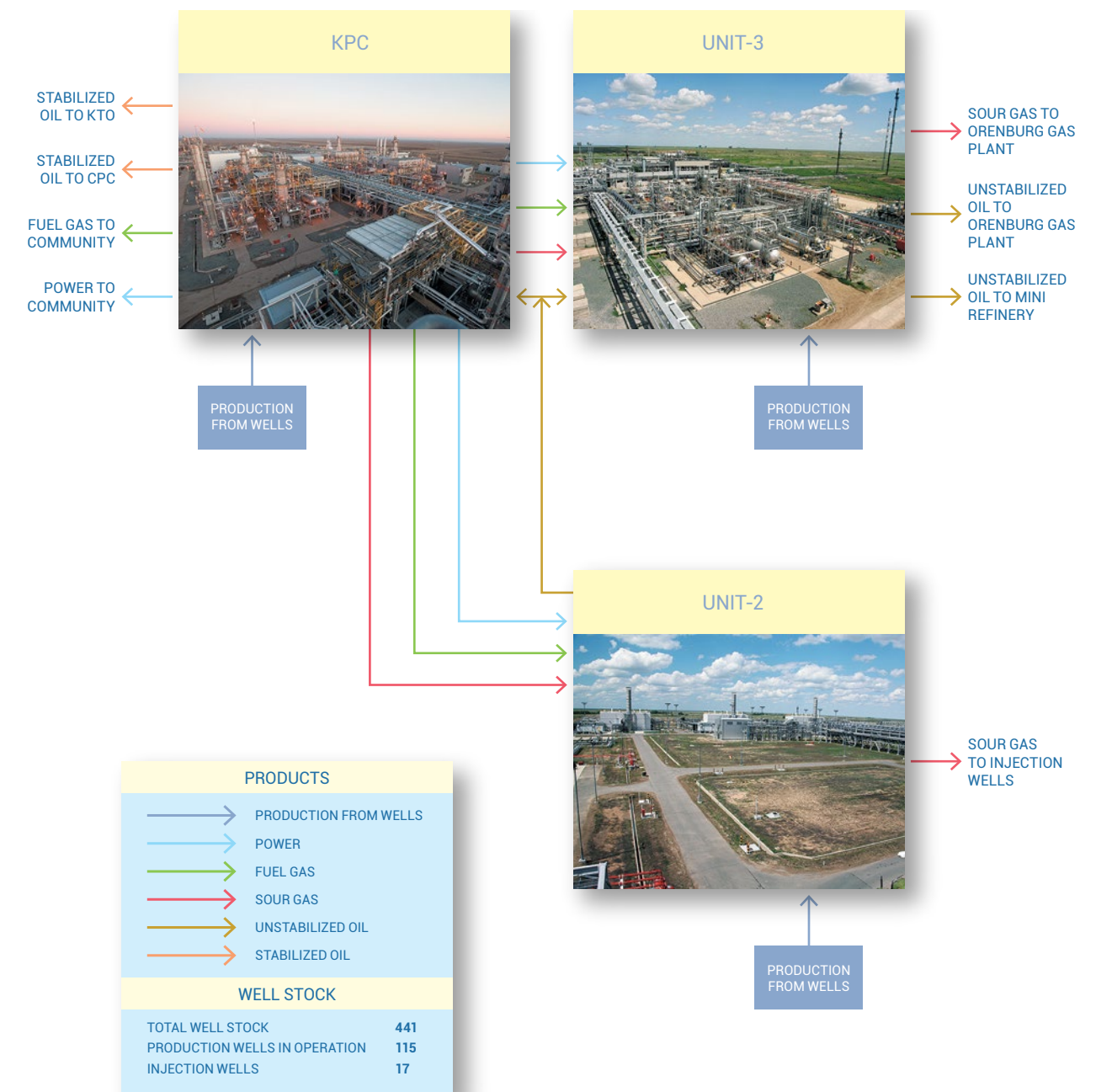
As of end 2017, 115 producing and 17 sour gas re-injection wells were online at Karachaganak, from a total well stock of 441 wells.

The increase in well stock of 29 wells with respect to previous year was mostly due to additional shallow wells drilled to support the development (monitoring wells).

<sup>2</sup> The difference in data as compared to previous periods is due to updated information of geological exploration.



**PIC. № 3. KARACHAGANAK FACILITIES**







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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 2017, 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 and Novorossiysk port (Sheskhari) in the Black Sea (see Pic. №4).

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.

Continuous focus on oil sales optimization enabled KPO to export a record 10.5 mln tonnes of oil through the more profitable CPC pipeline

in 2017. On the other hand, nearly 0.16 mln tonnes of oil were exported via the Atyrau-Samara pipeline in that period – a record low volume in KPO history thus maximising the revenue through the highest netback of the CPC pipeline. 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 2017, KPO sold 8.8 bln m³ of raw gas to KazRosGaz for processing at the Orenburg Gas Processing Plant.

Also in 2017, KPO managed to minimise the delivery of unstabilized condensate to Orenburg down to 624 thousand tonnes. This is a record low annual delivery of unstabilized condensate to Orenburg resulting in increase of sales revenue due to diversion of liquids from Orenburg into CPC route. In order to maintain reservoir pressure and increase future liquids' recovery rate, within 2017 KPO re-injected ~9.3 bln m³ of gas into the reservoir, a volume equivalent to about 49% of the total gas extracted.

PIC. №4 OUR EXPORT ROUTES



OPERATIONS IN 2017 GRI 102-2, 102-7

In 2017, KPO produced 145.8 mln barrels of oil equivalent (BOE) in the form of stable and unstable liquids and gas. Delivery of gas in 2017 reached 8.8 bln m³.

TABLE №3. PRODUCTION IN 2017

		2015	2016*	2017
Total Production**	Mboe	141.7	139.7	145.8
Total equivalent stable oil	Kt	10,796	10,466	11,247
Total gas production	Mscm	18,234	17,659	18,924
Gas Injection Gas re-injected into a reservoir, not sold	Mscm	8,652	8,040	9,289
Sweet Gas used at KPC for internal needs	Mscm	687.5	605.4	739.5

TABLE №4. SALES IN 2017

		2015	2016*	2017
Total Sales	Mboe	137.6	137	142.3
Unstable Liquids Condensate to Orenburg Gas Plant and Mini Refinery	kt	677	898	657
Stable Liquids Oil and stabilised condensate to CPC and Atyrau-Samara	kt	10,127	9,697	10,715
Raw Gas to Orenburg Gas Plant	Mscm	8,799	8,934	8,782
Sweet Gas to the WKO community	Mscm	68.1	50.8	97.7

\* Shutdown year

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

DRILLING ACTIVITIES IN 2017

Throughout the 2017, two drilling rigs were used in the Karachaganak operations. One rig was released in December 2017.

Five new wells were drilled and completed with swelling packers. The drilling of the sixth well started at the end of 2017 was completed in

January 2018. Two wells were drilled in the Western build up area of the Field. Eight wells were hooked up.

During the year 2017 the following achievements have been made in drilling:

- Zero recordable injuries & zero high potential incidents whilst working over 2.5 mln manhours and driving over 3.5 mln km.



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The approach taken to achieve and maintain high HSE performance in Well Operations involved setting objectives to facilitate and enable HSE management and ownership by all personnel and contractors and strengthening barriers in people, plant & processes. Actions taken included the development of an intervention culture, coaching, intensive contractor engagement, raising process safety and hazard awareness, and establishing supporting systems and processes.

- The drilling performance of one well was classified as best-in-class (5th percentile) and two other wells were top quartile (25th percentile) thanks to the continued innovation and study to reduce dynamic vibrations in bottom hole assembly (BHA) that lead to a longer durability of logging while drilling (LWD) tools and the reduction of flat time;
- Field rate of penetration (ROP) record achieved in 8-1/2" section (563 m drilled in 37.5 hours – 15 m/hr average ROP) and 6" section (1,261 m drilled in 82 hours – 15.38 m/hr average ROP) in well 9,858;
- Based on the information gathered from Parent Companies and service contractors, Closed Hole Circulation Drilling (CHCD) with hole enlargement in an horizontal well was successfully applied for the first time worldwide. CHCD is a drilling technique that allows continuing drilling while mud losses and lost circulation occur and it was proven to be effective to drill through extensively fractured formations like the ones encountered in Karachaganak reservoir.

Our efforts put in place to carry on the drilling activity in a safe and efficient way have always been oriented also to the protection of the environment, with the following achievements:

- The use of hydrocarbon as displacement fluid enabled the reduction of the flaring during the clean-up and expedited the delivery to production;
- The application of high pressure system (high pressure separators and pumps) in the well clean-up allowed the significant reduction of the flared volumes and accordingly the level of emissions to air (please see details in the *Air Emissions* section of this Report). Continued implementation of the reinjection high pressure (HP) pump allowed to send hydrocarbons through the flow line as soon as flowing tubing head pressure was over the flow line pressure; particularly for the Western Build Up area wells, hydrocarbons were pumped from HP separator directly to the flow line, reducing the flare use to the minimum;
- Improved performance in down hole operations by using intelligent coiled tubing with integrated sensors lead to a reduction of time on bottom, expediting coiled tubing operations reducing the quantity of corrosion inhibitor injected;
- The use of tractor robotic systems has allowed the milling of balls and baffles in the horizontal section in one run as a consolidated practice. Moreover, the deployment of Production Logging Tools (PLT) in the horizontal section using tractor, beside increasing the quality of the data recorded, did not require any fluid to be injected, expediting the well clean-up and the flow stability of the surface treatment units (KPC);

- Through the above mentioned improvements, the total gas flaring from well clean-up has been reduced of 60 % respect to the approved quantity for 2017 while liquid hydrocarbons' flaring was reduced by 84%.

### 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 Kazakhstan. Other activities include installation of new or upgraded equipment and 'engineering out' shutdown activities through necessary modifications.

In 2017, planned shutdown activities were successfully executed on schedule and incident free. This involved partial shutdown of KPC and Unit 2 and the KOTS network in May, September and October; and a complete shutdown of Unit 3 in September.

### 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 is resulting in production losses, risks to asset integrity and mandatory environmental compliance.

An additional challenge for KPO is locating sources of sufficient 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 of both produced and consumed water, as well as continuous supply of technical water. This strategy is being implemented through a number of small projects and operational initiatives. One such project is Upgrade of Oil Treatment System (UOTS), which progressed well through the year and is due for completion in 2018.

### POWER GENERATION STRATEGY

Throughout 2017 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 Kazakhstan Oblast community with a capacity of some 42 MW in winter and from 27 to 42 MW in summer. In 2017, the total electrical power supplied to the WKO has amounted to 307.6 mln KW/h.

In 2017, KPO has initiated an overall study of existing and additional power supply opportunities for future KEP-1 projects, including by means of renewable power sources.



Field Administrative Building at KPC

## FIELD DEVELOPMENT PROJECTS

As the Contractor to the Republic of Kazakhstan, 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. Following the completion of the Karachaganak Phase II Initial Program, KPO has been funding and implementing the Phase II Maintenance Program (Phase IIM) since 2003. 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 RoK.

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 2017, KPO continued the maturation of the PEP projects portfolio. For the 5th trunk line and gas reinjection wells component of the Unit 2 Gas Injection Upgrade Project the Front End Engineering Design (FEED) was completed and Final Investment Decision (FID) taken.

The Unit 2 Fourth Gas Injection Compressor Project was matured, with concept selection assurance reviews held, award of the procurement contract for the compressor was made and FEED commenced.

Finally, for the KPC Gas Debottlenecking Project, Detailed Engineering Design was progressed, procurement contracts for a number of long lead items were awarded, and the preparations for final assurance reviews and FID made. In addition, the piling construction contract was awarded and works are ongoing.

### KARACHAGANAK EXPANSION PROJECT (KEP1)

KPO works to continue the development of the Karachaganak field via the Karachaganak Expansion Project Phase 1 (KEP1), scheduled in a phased manner.

The KEP1 project creates additional value for the Karachaganak Parent Companies and the Republic of Kazakhstan by maintaining the stabilised liquid plateau through the provision of additional wells, process facilities and gas reinjection to manage the increasing GOR (gas oil ratio) 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 (QRA) model to evaluate the risk exposure of personnel during the construction and operation phases for the proposed new facilities. The outputs from the model are used to assist then in the demonstration that the layout, segregation and design of the new facilities will reduce risks during these activities to the lowest practicable level.

KEP1 will utilise inherent safety features in the design of systems and equipment and this will minimise the exposure of personnel to process safety risks (including toxic gas risks) throughout the life of the new facilities.

Another principle objective of KEP1 is to minimise any environmental impact. Best practices in air dispersion modelling of KEP1 emissions are being undertaken to assess any impact on the boundary of the Sanitary Protection Zone (SPZ) around the field.

In 2017, the studies have been further progressed with the objective to optimize the configuration of the future KEP1 facilities. Studies have 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.

After a pre-FEED phase, the project envisages to pass the milestone of value assurance review 2 (VAR2) in 2018 and then progress with the Front End Engineering Design (FEED), where incremental maturity will be achieved with a more detailed understanding of the project risks (brownfield works, SIMOPS (simultaneous operations) activities, Long Lead Items definition, compression unit, gathering system design and Early Works identification) and engineering will be developed in order to propose the project for sanction.

## Governance and management approach

- Ethical conduct
- Safety, Asset Integrity & Security
- Protection of health
- People and skills

## GOVERNANCE AND MANAGEMENT APPROACH

## GOVERNANCE STRUCTURE GRI 102-18

Karachaganak Petroleum Operating B.V. Kazakhstan Branch (hereinafter referred to as KPO) has been established in 1997 as a Joint Venture to operate the Karachaganak Oil and Gas Condensate Field (hereinafter referred to as the Karachaganak Field or the KOGCF) in accordance with the Final Production Sharing Agreement (hereinafter referred to as the FPSA). <sup>GRI 102-5</sup>

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, which is a key to achieving sustained organizational success. The approach to overall management is aimed at enabling appropriate decision-making and providing control mechanisms to ensure strategies, directions and guidance from senior management are carried out systematically and effectively.

The organisational structure of our company was designed to help KPO in meeting its business objectives for the benefit of the Republic of Kazakhstan, the Authority represented by the PSA LLP, and the Contracting Companies by continuously aligning with the current external environment.

KPO's two main governing bodies, the Joint Operating Committee (JOC) and the Joint Marketing Committee (JMC), are formed by representatives of each of the five Contracting Companies and representation of the Authority under the FPSPA. Each of the Contracting Companies and the Authority have one vote in decisions taken by the JOC and the JMC, and the affirmative vote of both is required for any such decision.

Joint Operating Committee (JOC)

The JOC is responsible for the overall supervision of petroleum operations and social and infrastructure projects to ensure that such 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 at least three times a year. In 2017, the JOC meetings were held in April, July and November. The JOC is chaired by a representative from the Authority. The Akim of the West Kazakhstan Oblast attends the JOC as the community representative without voting rights. KPO management team led by KPO General Director have the right to participate in JOC meetings without voting rights.

### Joint Marketing Committee (the JMC)

The JMC is responsible for all the 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 Joint Procurement Committee (the 'JPC') is a sub-committee established by the JOC, which is responsible for the approval or endorsement of 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 Sub-Committee for local content (the 'LCS') is a sub-committee established by the JOC and consists of representatives of the Contracting Companies and the Authority. The LCS is responsible for the provision of assistance to the JOC in issues related to local content in terms of commodities, works, and services, increase of local content in staff, training and development of Kazakhstani employees. The LCS is also involved in discussions and review of plans and programmes related to local content as proposed by the Republic, the Authority or the Contracting Companies.

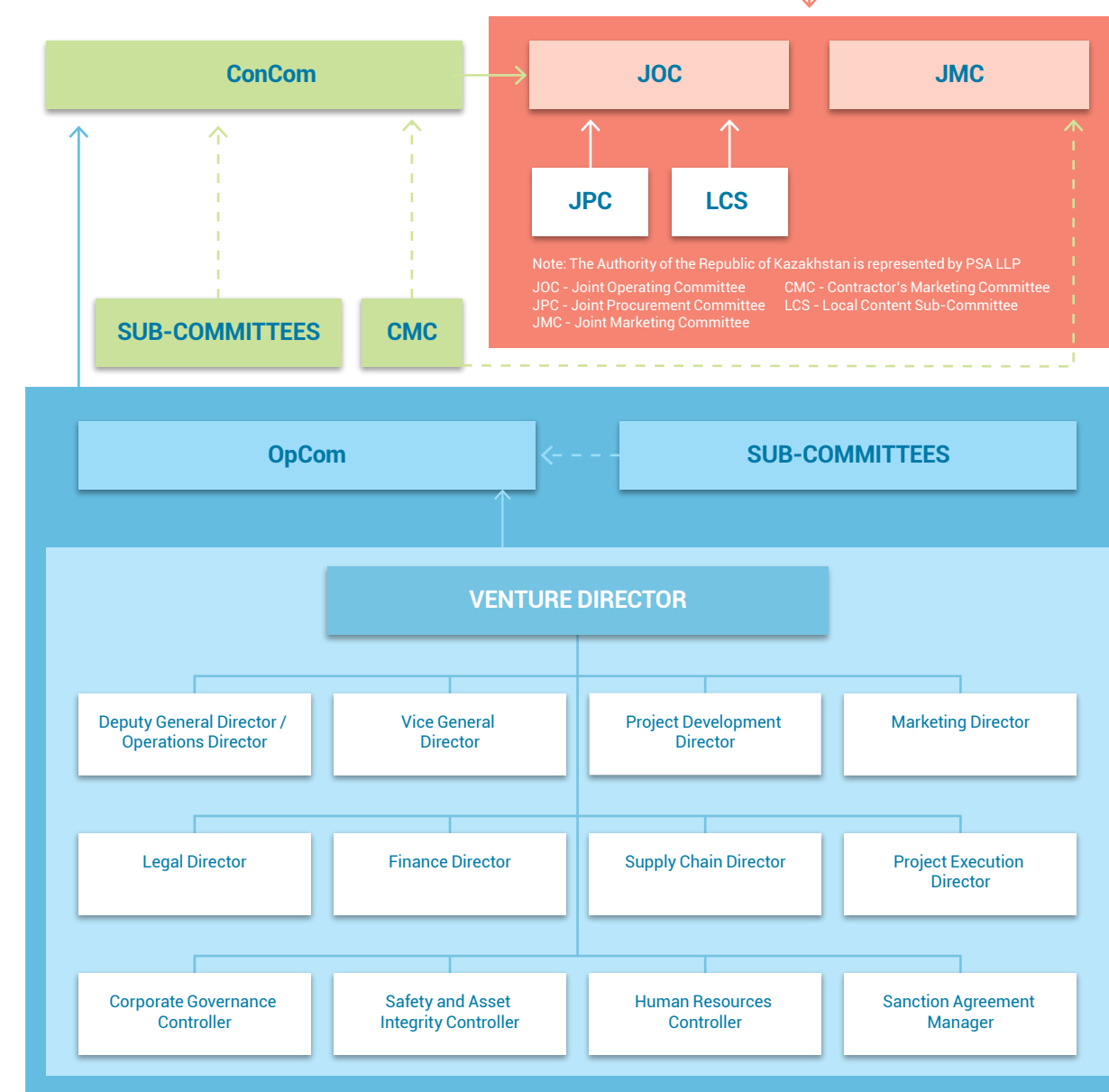
### Contractor Committee and Operating Committee

According to the Joint Operating Agreement (JOA), the Karachaganak Joint Venture is covered by the two layers of the management and decision-making bodies with regard to the joint operations. The first layer body is the Operating Committee ('OpCom'), which oversees the management of the Venture and ensures the FPSA's compliance. The top layer 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 picture N°5.

PIC. №5. KARACHAGANAK VENTURE SENIOR MANAGEMENT STRUCTURE GRI 102-18

The Authority and the Contracting Companies representatives are members of these committees and sub-committees





Governance and management approach

Ethical conduct

Safety, Asset Integrity & Security

Protection of health

People and skills

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 from each of the Contracting Companies or Operating Companies.

Each sub-committee has written terms of reference, is subject to such procedures as the ConCom or OpCom may determine and shall report to the Contractor's Committee or the Operating Committee. Sub-committee meetings take place during the year in accordance with a planned schedule and all the recommendations and decisions made are logged in the minutes of the meeting or action logs after each such meeting.

TABLE №5: LIST OF THE CURRENT CONCOM AND OPCOM SUB-COMMITTEES

Contractor Committee (ConCom)	Operating Committee (OpCom)
<div>1. Contractor's Marketing Committee</div> <div>2. Work Program and Budget Sub-Committee</div> <div>3. Finance Sub-Committee</div> <div>4. Tax Sub-Committee</div> <div>5. Audit Sub-Committee</div> <div>6. Insurance Sub-Committee</div> <div>7. Corporate Affairs and Government Relations Sub-Committee</div> <div>8. Legal Sub-Committee</div>	<div>1. Operations Sub-Committee</div> <div>2. HSE Sub-Committee</div> <div>3. Security Sub-Committee</div> <div>4. Technical Sub-Committee</div> <div>5. HR Sub-Committee</div> <div>6. Sustainable Development Sub-Committee</div>

In particular, the Corporate Affairs and Government Relations sub-committee was established to provide assurance on the requirements of the Contracting Companies and the FPSA with regard to all Government and Public Relations' issues and monitors KPO's performance in this area against its own business objectives. The sub-committee sits on a quarterly basis and communicates to ConCom issues/threats and/or opportunities relevant to KPO business, which are appropriate, cost-effective, beneficial and add value to KPO. This sub-committee is attended by each of the Contracting Company representative and an additional KPO representative as appointed by the Venture Director. All decisions and/or recommendations are made by consensus of all its members.

In 2017 the functions of Corporate Affairs and Government Relations sub-committee Sustainable Development sub-committee were combined to provide professional advice and technical expertise on topics, such as village resettlement, community engagement, sustainability reporting, cooperation with media, arrangements of the FPSA 20<sup>th</sup> anniversary, participation of KPO in various public events.

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. These are embedded in KPO's management systems including, but not limited to:

1. 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. The Compliance control framework is also defined in this document to provide KPO management and shareholders with assurance that the principles of conducting business in KPO fit with the foreign practices applicable to the shareholders and legislation of Republic of Kazakhstan so that individuals within KPO are aware of their responsibilities under the Code of Conduct and KPO compliance framework.

2. Corporate Governance Controllership Management System

The Management System identifies high-level requirements and provides an organising framework to maximise contribution to the business of Corporate Governance Controllership by everyone involved in the activities of the Controllership. The document describes its mission, objectives and activities including compliance framework, documents and information framework and internal controls framework. Clear distribution of responsibilities within the Controllership is represented in the document outlining key areas and business processes delegated to each of its units.

KPO management systems related to sustainable development in environment, social and economic areas are given in the following table:

CORPORATE GOVERNANCE	OPERATIONS	HSE AND ASSET INTEGRITY	SOCIAL PERFORMANCE	ETHICS & COMPLIANCE
<div>■ Karachaganak Corporate Management System Manual;</div> <div>■ Corporate Governance Controllership Management System.</div>	<div>■ Management Systems Manual for Operations Directorate;</div> <div>■ Marketing Directorate Management System;</div> <div>■ Finance Directorate Management Systems;</div> <div>■ KPO Competency Management System Policy.</div>	<div>■ Health, Safety and Environment (HSE) Management System Framework and HSE Policy;</div> <div>■ HSE Annual Improvement Plan;</div> <div>■ Occupational Health Management System Manual;</div> <div>■ Energy Management System Manual and Energy Policy;</div> <div>■ Security Management System Framework.</div>	<div>■ Local Content Policy and Management System;</div> <div>■ JOC Secretariat Management System;</div> <div>■ Social Performance Policy and Standard;</div> <div>■ KPO Sponsorship &amp; Donations Policy;</div> <div>■ HR Management System Manual;</div> <div>■ Social Projects Department Management System Manual.</div>	<div>■ KPO Code of Conduct;</div> <div>■ Conflict of Interest Policy;</div> <div>■ Compliance Assurance Policy.</div>



JOC meeting in Uralsk office





Governance and management approach  
Ethical conduct  
Safety, Asset Integrity & Security  
Protection of health  
People and skills

RISK MANAGEMENT GRI 102-15

Petroleum operations must be carefully organised with respect to the environment, people and local communities and taking care on issues such as personal and process safety, air emissions, generation of waste, water and soil pollution. 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 and asset integrity risks, mainly coming from potential emissions of hydrogen sulphide and illegal taps;
- environmental risks, mostly arising from potential spills, generation of waste and emissions to air;
- risks to ethical compliance both of our own personnel, our contractors and subcontractors; and
- attracting and retaining qualified national personnel.

Within KPO a formal Risk Management process is established to identify and effectively manage business risks, which could be experienced by the Company during its activities. This process, as well as roles and responsibilities, is defined within the Risk Management Procedure.

Corporate Governance Controllershship facilitates the constant development of risk management system and is responsible for maintaining the Corporate Risk Register. The Corporate Risk Register contains the risks, which may occur, and associated action plans 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 in a concise manner ensuring information reliability and actuality. 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 Internal Audit Department provides an independent, objective assurance and consulting activity designed to add value and improve the organization's operations. It helps KPO accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

An annual audit plan is prepared and executed with a broad scope including topics, like efficiency and effectiveness of business processes, compliance with law, regulations and internal procedures,

reliability of financial and management reporting, and follow-up of improvement action plans. In addition, our 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 senior management and Parent Companies through the Audit Sub-Committee and the external auditors.

Value Assurance of all KPO Projects is performed by the Value Assurance Department, following the KPO Value Assurance Framework (VAF). 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, while for smaller projects the value assurance is performed by independent teams within KPO.

In order to further enhance KPO's assurance process an Integrated Assurance Map is planned to be developed for 2018 to summarize all assurance activities across KPO departments.

EXTRACTIVE INDUSTRIES TRANSPARENCY INITIATIVE

KPO supports the Extractive Industries Transparency Initiative (EITI) addressed at ensuring transparency of incomes and overall chain of value creation in management of the natural resources of the Republic of Kazakhstan (RoK).

In 2017, KPO paid taxes in the amount totalling USD 897 mln (at the RoK National bank exchange rate on 31.12.2017) as reported in the 13th National Report on Implementation of the Extractive Industries Transparency Initiative for 2017.

The latest KPO report for 2017 was provided to the Committee for Geology and Subsoil Use of the RoK Ministry of Investments and Development and to the Republican State Enterprise 'West Kazakhstan Interregional Department of Geology and Suboil Use' ('Zapkaz- nedra') reporting to the above Committee on 25 April 2018. KPO has been solely submitting the EITI reports on its tax obligations to the RoK authorised bodies since 2014. In table № 6 one can see the history of KPO payments in the period from 2014 to 2017.

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 Kazakhstan. The Final EITI National Reports are available online to any stakeholder on the website of the Ministry of Investments and 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 / incomes from payers of oil&gas and mining sectors of the Republic of Kazakhstan').

TABLE №6. TAXES AND MANDATORY PAYMENTS PAID BY KPO TO THE ROK BUDGET IN 2014-2017 (IN USD)

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



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.

The Code of Conduct was most recently updated in June 2017.

Our corporate values include the following:



CODE OF CONDUCT AND ANTI-CORRUPTION AWARENESS AND TRAINING 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.

Providing training on ethical norms and standards to personnel is important for KPO as for any international company due to the multinational nature of its staff. All KPO new starters must complete an introductory training course on the Code of Conduct, which is held on mandatory principle. The objective is to ensure that all KPO employees are aware of KPO's expected standards and requirements of behaviour.

The Code of Conduct and other ethical compliance policies are available on the KPO intranet for each employee to read. Each KPO employee is required, on an annual basis, to make a Compliance Declaration acknowledging their familiarisation with their personal compliance obligations. Employees, who do not have access to the intranet, are provided with hard copies and a signed acknowledgement is obtained. By the end of December 2017, over 89% of KPO employees had completed their Compliance Declaration.

KPO also has online training modules on ethical compliance for all KPO employees. These modules focus on the Code of Conduct, conflicts of interest and anti-corruption.

In the framework of organising ethical compliance training for contractor companies, KPO held its annual Contractor Ethical Compliance Workshop in October 2017. The Workshop has been run annually since 2013. In 2017 the Workshop was attended by 29 senior contractor representatives from 19 of our contractors, a mix of major contractors and smaller local contractors. The workshop program included issues on anti-corruption laws and also on KPO's Code of Conduct and ethical compliance standards.

HOTLINE AND OTHER COMPLIANCE MEASURES GRI 102-17, 103-3

A toll-free, anonymous and confidential Hotline has been functioning in KPO since 2012 as another step in the Company's legal compliance programme.

The Hotline provides an important tool for KPO's employees, contractors and stakeholders to ensure a fair and safe working environment. For KPO the Hotline is administered by a leading accredited international supplier of this service – NAVEX Global.



Governance and management approach  
**Ethical conduct**  
**Safety, Asset Integrity & Security**  
Protection of health  
People and skills

Available 24-hours a day the Hotline provides a means for employees, contractors and other stakeholders to report potential legal or ethical offences, including 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.

During 2017, KPO received 27 reports to the Hotline, and directly to the Legal Directorate. All the reports 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 Grievance Handling Procedure and Discipline Handling Procedure, 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.

To support monitoring and review of compliance activities, the Legal Directorate also maintains a set of compliance registers, including for example, hospitality and travel provided to non-KPO persons, corporate gifts and hospitality received by KPO personnel, conflicts of interest and connected persons, and allegations of corruption.

ANTICORRUPTION DUE DILIGENCE PROCESS GRI 205-2

KPO has to comply with both Kazakh laws combatting corruption and bribery as well as corresponding international laws, which are applicable in the home countries of our Parent Companies. In this regard, KPO seeks assurance that all its business partners – suppliers, vendors, contractors, service providers and other contract counterparties, are acceptable from an ethical compliance perspective and agree to adhere to ethical business practices. One aspect of this assurance process is to "know our business partners".

On this basis 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 other, including tax and court databases, to confirm the company's corporate information and whether there are any negative reports regarding its business conduct. A risk assessment is then performed to determine the acceptability of the business partner and, if relevant, mitigation measures to be applied to any residual risks.

For existing and new business partners the ethical due diligence is refreshed regularly so that necessary steps can be taken to address any material change in the risk evaluation. In 2017 KPO reviewed its Ethical Due Diligence Procedure to ensure it remained up to date and to incorporate improvements that had been identified since it was last issued. These included clarifications to the period for refreshing ethical due diligence.

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

KPO offers assistance to local companies to comply with KPO's ethical requirements. The Contracts & Procurement Department provides local companies with pro-forma documentation, through which they are able to draft their own Code of Conduct and update their contractual documents, including those that may be used for subcontracting services or for the procurement of equipment or materials, to conform to KPO's standards.

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.



In KPC Control Room



SAFETY, ASSET INTEGRITY AND SECURITY

SAFETY GRI 102-15

In developing and operating such a technically complex field like Karachaganak, safety, security and asset integrity are critical success factors.

Safety remains at the core of everything we do and Karachaganak challenges us every

day on this front. At an operational level we experience extreme temperature swings, which pose significant personnel and asset integrity issues. The high H<sub>2</sub>S product, combined with high pressure injection, also poses its own set of operational safety challenges.

In 2017 KPO achieved an outstanding result in safety performance considering the lowest recordable incident rate in the history of the company. Notwithstanding such a remarkable result, KPO recognizes the risk of complacency and work persistently to maintain the highest level of safety across the entire organization.

TABLE №7. OUR TARGETS IN SAFETY GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Conduct a re-certification audit for ISO 14001:2015 and OHSAS 18001:2007 in July 2017.	Yes	The Re-certification audit against requirements HSE management system standards ISO 14001:2015 and OHSAS 18001:2007 was held in July 2017 by "Bureau Veritas" Certification body.	<ul style="list-style-type: none"><li>Conduct Parent Companies' (Eni and Shell) audit in May 2018;</li><li>Conduct a Surveillance audit for ISO 14001:2015 and OHSAS 18001:2007 in June 2018;</li><li>Conduct gap analysis of HSE Management System's compliance to the new ISO 45001 standard requirements.</li></ul>
<ul style="list-style-type: none"><li>Follow up the HSE Competency with the contractors and KPO Supervisors;</li><li>Investigate the possibility of integrating the KPO Supervisor HSE Competence activity into the Production &amp; Maintenance Competency Assurance System database.</li></ul>	Partially	HSE Competency is an ongoing continuous project. In 2017, work proceeded on closing the gaps identified during the competency assessment process in 2015-2016. The integration of the HSE competence activity into the Production & Maintenance Competency Assurance System was carried forward to 2018 in view of its complexity and time-consuming.	Integrate Supervisors' HSE competence activity into the Production & Maintenance Competency Assurance System.
Implement the updated Contractor Management Strategy to ensure effective Contractor HSE performance management whilst giving priority attention to the higher risk Contractors.	Ongoing	Contractor HSE Performance Management Strategy was updated. The measures required to be taken at each stage of the contract lifecycle are established and updated with regard to the Contract Mode and HSE risk. Priority was given to the Mode 2 contracts with high or medium HSE risks (i.e. when contractor executes works under own HSE management system while complying with KPO HSE requirements).	Amend the Contractor HSE 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).



TABLE № 7. OUR TARGETS IN SAFETY GRI 103-2 (CONTINUED)

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Continue providing technical safety support to Operations: <ul style="list-style-type: none"> <li>Unit 3 ALARP Demonstration,</li> <li>KPC ALARP Demonstration.</li> </ul>	Partially	Unit 3 ALARP demonstration report has been endorsed by Parent Companies and issued to the PSA Authority for review. KPC ALARP demonstration has not been achieved as the input for Quantitative RA update (including off-site and on-site risks) was completed only in Q1 2018.	<ul style="list-style-type: none"> <li>Obtain endorsement of the Unit 3 ALARP Demonstration by the PSA Authority.</li> <li>Issue the KPC ALARP Demonstration.</li> <li>Issue the Unit 2 ALARP Demonstration.</li> </ul>
Deliver the Declaration for Safety for Industrial Units (DSIU) in line with the RoK requirements for the following facilities: <ul style="list-style-type: none"> <li>KPC;</li> <li>Well stock; and</li> <li>Eco Centre.</li> </ul>	Partially	KPC and Well Stock DSIU was updated, passed the expert conclusion and registered at the RoK Committee of Industrial Development and Process Safety. ECO Centre DSIU was partially finalised due to unavailability of work packs.	Deliver the Declaration for Safety for Industrial Units (DSIU) in line with the RoK requirements for the following facilities: <ul style="list-style-type: none"> <li>Eco Centre,</li> <li>Unit 3/KOTS,</li> <li>Unit 2,</li> <li>Well Stock.</li> </ul>
Provide advice and monitor the implementation of the Minimum Manning Strategy during the manning of projects (4th Injection and KGDBN). Continue stage III – relocate intermittent and non-essential personnel from KPC and Unit 2.	Yes	POB data developed for the relevant Quantitative Risk Assessments reflect the requirements of Minimum Manning Strategy, in alignment with the relocations identified for Unit 2 and KPC. Relocation of some non-essential and intermittent personnel from KPC to Pilot Camp and Aksai was performed. HR representative was relocated from Unit 2 to Aksai.	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.
<ul style="list-style-type: none"> <li>Validate the POB data from both EACS with the GPS data from the trials to assure the accuracy of the data;</li> <li>Review trial results and make recommendations to Senior Management for wider use / deployment.</li> </ul>	Yes	The analysis of both the EACS and GPS data showed cross-checked inaccuracies specific to each system, some of which could be addressed in the short term. Opportunities for improvement in the acquisition, treatment and reporting of data from the two systems were identified. A new improved model and reporting parameters for GPS were introduced and the relevant trials planned in Q1 2018.	Develop software/process for efficient Unit 3 Time fraction EACS data reporting while GPS use is fine-tuned.
	New target		Update the Risk Management Framework
	New target		Review the Unit 2, KPC and infield (EOPS) Safety Case
	New target		Update the Escape, Evacuation and Rescue Assessments, Strategies and Implementation Plans for Unit 2 and KPC



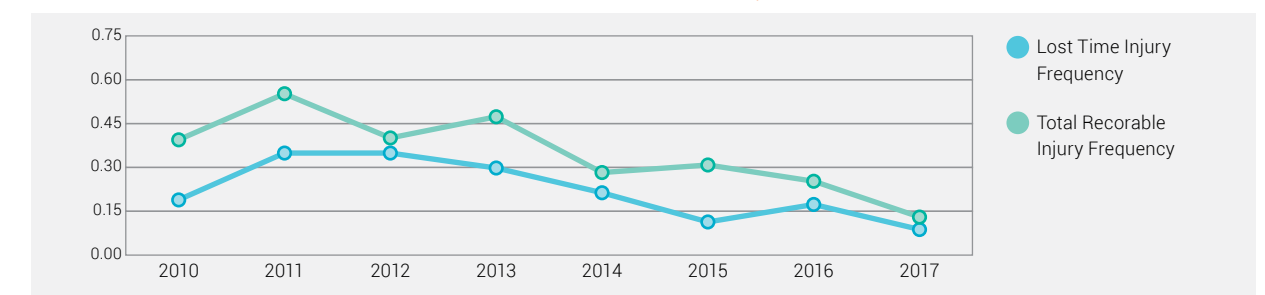
## SAFETY PERFORMANCE GRI 103-3

We present our safety performance covering the period of 2010-2017 with some highlights for 2017. This allows us to study trends and analyse dynamics of data in 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)<sup>1</sup> and Total Recordable Injury Frequency (TRIF)<sup>2</sup>.

In the past year 2017 KPO achieved remarkable results in HSE performance: from 0.17 LTIF in 2016 to 0.08 in 2017, and from TRIF of 0.24 in 2016 to 0.11 in 2017. That was a reduction of over 50% marking the best ever result achieved in KPO's history.

GRAPH № 1. LTI FREQUENCY AND TRI FREQUENCY: KPO AND CONTRACTORS, 2010-2017 GRI 403-2



Calculation method applied in KPO for LTI and TRI frequencies:

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

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

Table №8 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.

TABLE №8. LOST TIME INJURY FREQUENCY: KPO VERSUS CONTRACTORS, 2010-2017 GRI 403-2

PERFORMANCE INDICATORS	2010	2011	2012	2013	2014	2015	2016	2017
Lost Time Injury Frequency (KPO)	0.00	0.71	0.42	0.58	0.14	0.14	0.00	0.14
Lost Time Injury Frequency (Contractors)	0.23	0.21	0.30	0.17	0.22	0.10	0.23	0.05

Table №9 shows KPO TRIF versus contractors' TRIF.

TABLE №9. TOTAL RECORDABLE INJURY FREQUENCY: KPO VERSUS CONTRACTORS\*, 2010-2017

PERFORMANCE INDICATORS	2010	2011	2012	2013	2014	2015	2016	2017
Total Recordable Injury Frequency (KPO)	0.11	1.00	0.42	0.58	0.14	0.27	0.27	0.14
Total Recordable Injury Frequency (Contractors)	0.47	0.36	0.36	0.41	0.32	0.31	0.23	0.10

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





Governance and management approach  
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KPO strives for an injury-free workplace; however during 2017 there were three (3) incidents resulted in injuries. Notably the two lost time injuries involved a hand injury during the pipe lifting operations, and a head injury following a road incident. The workers involved could return to work after a few days.

The third recordable incident resulted in a minor arm burn to a canteen worker who could however continue work being transferred to light duties. Out of the three injuries, two related to contractor employees and one – to KPO employee.

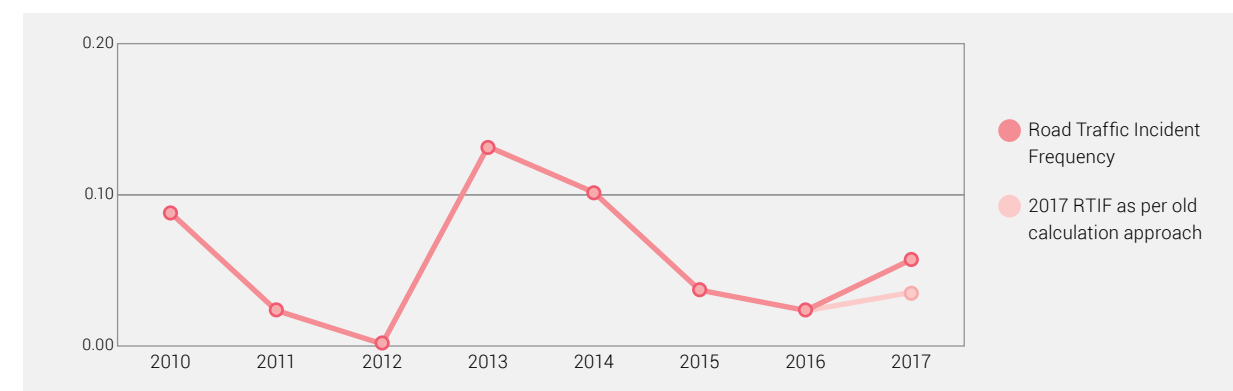
In 2017, KPO vehicles travelled over 39 mln km as opposed to 65 mln km in 2016. The reduction was due to the review of the KPO reporting boundaries against the IOGP guidelines: kilometres driven by other (non-transport) KPO service contractors outside the Karachaganak field were removed from the statistics. Effective from 2017, KPO road

traffic statistics includes the overall kms driven within and outside the field by KPO and transport service providers and kms driven within the field only by other service contractors.

The revision was made following the Road Safety Peer Assist with representatives from Parent Companies and TCO. The Road Safety Peer Assist was organized to share best practices, identify ways to reduce safety risks from road transportation and to elaborate/agree recommendations.

Thus, our Road Traffic Incident Frequency (RTIF) per mln km driven increased from 0.02 in 2016 to 0.05 (0.03 as per old calculation approach) in 2017. The indicator appears much higher, whereas only two RTIs occurred in 2017 versus one in 2016. The two RTI events were a rollover of a subcontractor's truck trailer with slabs and a collision of two contractors' buses.

GRAPH №2. ROAD TRAFFIC INCIDENT FREQUENCY: KPO AND CONTRACTORS, 2010-2017 GRI 403-2



Our calculation of RTIF:

- Road Traffic Incident Frequency = Number of RTIs (severe) x 1,000,000/kilometres driven.
- Kilometres driven new (2017) calculation approach: Overall kms driven by KPO and transportation services providers within and outside the field + kms driven by other service contractors only within the field.
- Kilometres driven old calculation approach: Overall kms driven by KPO and all service contractors within and outside the field.

TABLE №10. ROAD TRAFFIC INCIDENT FREQUENCY: KPO VERSUS CONTRACTORS, 2010-2017 GRI 403-2

PERFORMANCE INDICATORS	2010	2011	2012	2013	2014	2015	2016	2017
Road Traffic Incident Frequency (KPO)	0.13	0.00	0.00	0.00	0.00	0.25	0.00	0.00
Road Traffic Incident Frequency (Contractors)	0.09	0.02	0.00	0.14	0.10	0.02	0.02	0.06 (0.04*)

\* Contractors RTIF as per old calculation approach

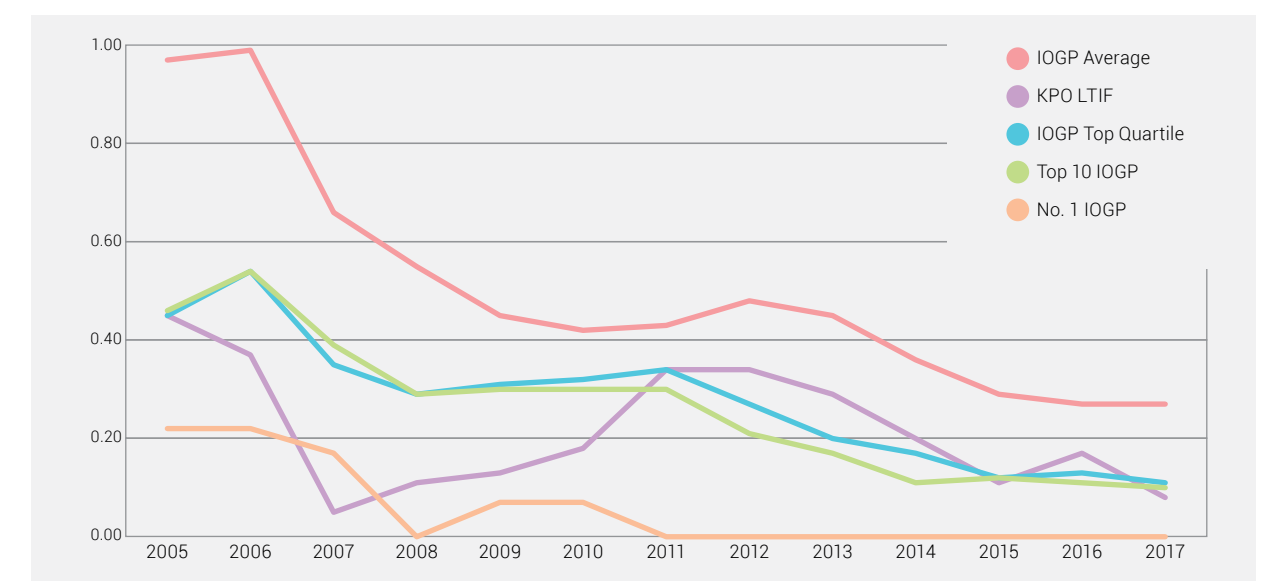


PEER COMPARISON GRI 103-3

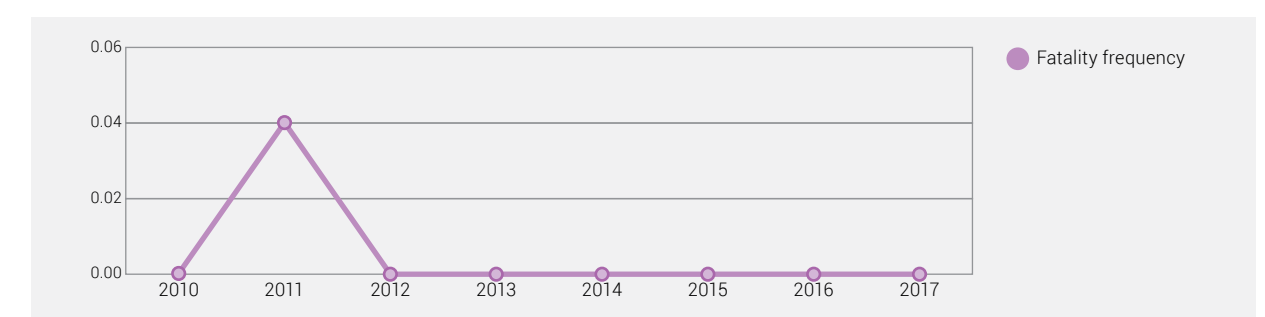
We annually review our safety performance against other Oil & Gas production operators. KPO Key Performance Indicators (KPIs) are compared to the data annually published by the International Association of Oil and Gas Producers (IOGP) based on the operators' performance collected worldwide.

In 2017 our LTIs have decreased more than twice, and when compared to other peers, KPO LTIF stands well below the IOGP Top 10 (see Graph №3). Details of the IOGP statistical average indicators, top 10 IOGP and No. 1 IOGP indicators are available online at [www.iogp.org](http://www.iogp.org).

GRAPH №3. KPO PERFORMANCE VS IOGP, 2005-2017 GRI 403-2, 103-3



GRAPH №4. FATALITY FREQUENCY: KPO AND CONTRACTORS, 2010-2017 GRI 403-2



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.





Governance and management approach  
Ethical conduct  
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Protection of health  
People and skills

TABLE №11. FATALITY FREQUENCY: KPO VERSUS CONTRACTORS, 2010-2017 GRI 403-2

PERFORMANCE INDICATORS	2010	2011	2012	2013	2014	2015	2016	2017
Fatality Frequency (KPO)	0.00	0.14	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	0.00

INTEGRATED HSE MANAGEMENT SYSTEM GRI 103-2

KPO operates under Integrated HSE Management System (IMS) introduced in 2009 with the aim to systematically manage health, safety and environmental risks associated with petroleum operations. The IMS includes several elements defined by international standards: ISO 14001 and OHSAS 18001.

Since the initial system certification, annual surveillance audits have been carried out by accredited third parties. The latest re-certification audit against ISO 14001:2015 and OHSAS 18001:2007 was held in July 2017 by Bureau Veritas. The system proved itself as mature and fully compliant with the requirements of both ISO 14001:2015 and OHSAS 18001:2007. The certification for the KPO IMS was granted until September 2020. The new ISO 45001 standard (replacing OHSAS 18001:2007) is expected to be released in 2018 and will be used to establish new requirements for our HSE Integrated Management System. GRI 103-3

As part of internal system of controls, regular internal audits are held to ensure that activities are conducted in line with the set targets and in compliance with the established corporate and HSE management systems. In 2017 KPO conducted 11 internal audits and 19 audits of contractor organizations in line with the approved 2017 Audit Programme. The audits were focused on the quality of the HSE Management System and its continuous improvement to support incident prevention and full execution of each phase of the Deming cycle.

To ensure an effective audit and compliance review system, the results of all audits are analyzed, and based on provided data the

HSE Compliance audit report is prepared. The report for 2017 comprised the trends shaped across the company and the recommendations for improvement.

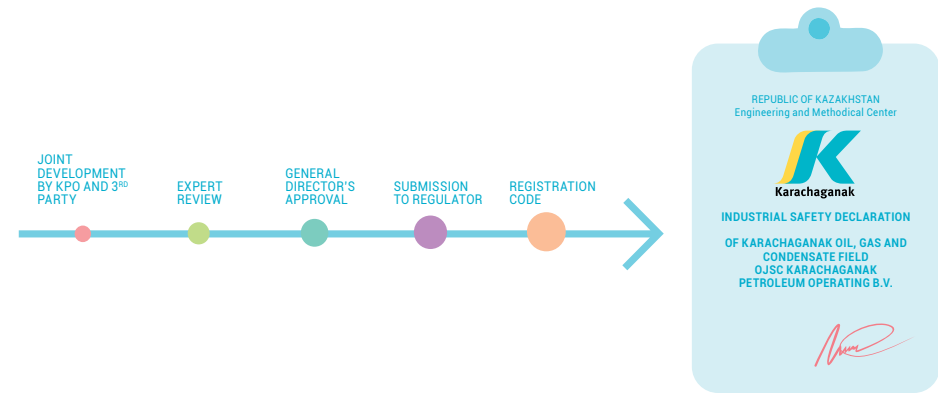
HSE RISK MANAGEMENT GRI 102-15, 103-3

KPO Risk Management Framework aims to provide the process for the management of Health, Safety, Environmental and Business risks within KPO and describe 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); and
- Risk Tolerability Criteria.

In 2017 the RMF was reviewed and updated following the recommendations of the Parent Companies and ISO/OHSAS re-certification audits. The main areas of the update included revision of a Risk Matrix, roles and responsibilities, evaluation of risks and their ranking, risks monitoring and review.

In accordance with the RoK Law on Civil protection (#188-V) KPO developed and has been updating the KOGCF Industrial Safety Declaration (DSIU). In 2017, we developed safety declarations for the Karachaganak field well stock and the KPC processing complex. Development of Unit 2 and Unit 3 DSIUs was initiated.



To maintain the existing risk reduction measures for Unit-3, the Achieving Risk Tolerability Study and ALARP Demonstration reports were delivered and endorsed by Parent Companies.

Achieving Risk Tolerability Study outlines four operational control Risk Reduction Measures (RRMs), committed to implement at Unit 3 to ensure the risk is reduced to the tolerable region. As part of the implementation of the RRMs control of the Unit 3, worker groups' exposure time based on Electronic Access Control System (EACS) data have been regularly performed since 2017.

Worker groups' exposure time or time fraction data for the duration that worker groups spend in the units' process areas is a key underlying assumption in the Quantitative Risk Assessment (QRA). The original time fraction data used in the QRAs was based on the unit managers' experience of the activities carried out annually in the past. The Electronic Access Control System has been installed in 2016 at units to assist in validating the time fraction and POB data to be used in the QRA and to enable greater management control over the time spent by worker groups within the process area. Data sourced from the EACS demonstrates actual Time Fractions of anyone entering the unit and can be utilised as reliable input data to the unit's base case QRAs, DSIUs and other technical studies.

Based on the EACS data, time fractions of each worker groups within KPC and Unit 2 were also monitored and top contributors optimized to achieve a level of risk as low as reasonably practicable in compliance with the tolerability criteria set forth by the KPO Risk Management Framework (RMF) in 2017.

KPO faces a risk of potential exposure of its personnel, contractors, visitors and authorized third parties working within the Field to highly toxic H<sub>2</sub>S gas. Aiming to minimize this risk a Strategy for Protection of People in H<sub>2</sub>S Emergencies in the Field has been initiated in 2017 as part of the field-wide H<sub>2</sub>S 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. Minimum requirements for development of H<sub>2</sub>S management plans, procedures and instructions of processing units and other affected specific workplaces are covered in the strategy as well. Strategy for Protection of People in H<sub>2</sub>S Emergencies in the Field was based on rule sets and assumptions outlined in the KPO Escape, Evacuation and Rescue Assessments (EERA) methodology endorsed by Parent Companies' subject matter experts in 2017.

KPO has eight operational safety cases specific for each production unit and one general overarching Field Safety Case developed in accordance with the UK HSE regulation and best industry practice. The operational safety case is a live document that is subject to periodic reviews and updates, which is developed to address major hazards associated with the Field operations to allow a robust examination of the design and to identify risk reduction measures.

In 2017, review and update of the Unit 2 and KPC Safety Cases was initiated. As part of the update the Bow-tie review workshops were carried out at Unit 2 KPC with units' representatives and third party contractor. Workshop outputs have been captured in relevant reports.

Units' Quantitative Risk Assessments (QRA) support the safety cases and have been updated to account for facilities modifications and upgrade projects, as well as the QRA Methodology, Rule-sets and

Assumptions review at the PSA Authority request. KPC and Unit 2 Qualitative Risk Assessment (QRA) reports have been reviewed and updated in accordance with the endorsed QRA Methodology.

In addition, in 2017 SIMOPS and concept select QRAs were performed to support KPO operations and management in decision making process and to identify the risk levels to personnel as a result of the implementation of modifications and upgrade projects.

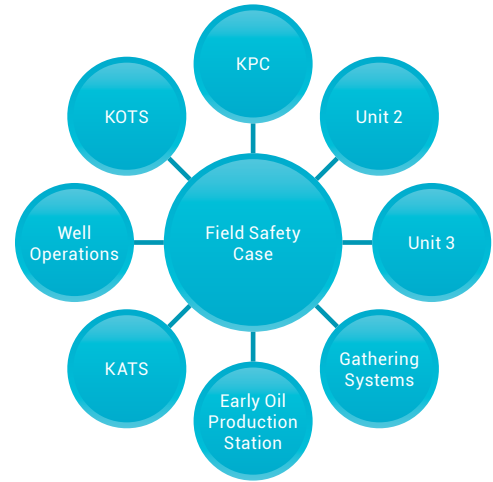
With support from Eni KPO initiated the review of the field-wide blowout risk assessment with the eRainbow software package to account for the introduction of the QRA Methodology, Rule-sets and Assumptions, thus allowing for a review of the field-wide EER requirements and, hence, the ER controls, in particular in case of H<sub>2</sub>S effects.

Moreover, in 2017 a number of qualitative risk assessment sessions were facilitated to identify, evaluate and control previously unidentified hazards. Risk assessment results were captured in relevant reports.

Unit 2 Assurance Hazard and Operability study (HAZOP) was initiated in 2017 and finalized in 2018. Assurance HAZOP provides assurance that all hazards and operability issues associated with plant modifications and changes in operating regimes since the original design stage HAZOP are captured and adequately assessed.

Fire & Gas (F&G) Detection mapping assessment was performed for Unit 2, KPC and well sites in 2017. This exercise aims to review the existing F&G detection systems arrangements, layout configurations and capabilities at processing facilities to ensure that there is system with adequate coverage to respond to any Loss of Containment events. Verification of F&G Layout and fire & gas detection coverage using 3D modelling was complete. The F&G mapping study was initiated for Unit 3.

The report on the test results of the acoustic gas leak detectors (AGLD) trial at wellhead locations was prepared with recommendations. Final conclusions about the suitability of AGLD type for use at KPO well sites was made in mutual agreement between all parties involved based on the data collected during the trial period.





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Ainur Sukhanberdina, Chemical Laboratory Assistant, receives an award from Shell 'Upstream Goal Zero Hero'

#### 2017 HSE IMPROVEMENT PLAN GRI 102-11, GRI 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. Every element is actioned by relevant KPO division according to their role in the company-wide projects. 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 2017 HSE Improvement Plan consisted of 40 key actions and improvements distributed and shared throughout all company directorates. Over 93% of the Plan was implemented with a few activities postponed to 2018. The core activities and results are summarized below.

#### I. Compliance with HSE Management system

As part of improvement of hazards awareness and incidents reporting culture, an Incident Investigation E-learning programme was developed with all supportive training materials. The e-learning was rolled-out to all employees 40% of which passed the training.

#### II. HSE Leadership and Supervision

Follow-up the HSE Competency of KPO and contractor supervisor was performed in 2017. The HSE Competence Enhancement Plan was developed to address the gaps identified during the HSE competence assessment of the KPO frontline supervisors.

#### III. Contractor HSE Management

In 2017 the Contractor HSE Performance Management Strategy was updated with some new elements introduced, notably:

- Standardised HSE questionnaires with evaluation criteria by contract modes for the inclusion in standard tender evaluation plans.
- Pre-mobilization HSE inspection checklist of a Contractor.
- Contractor HSE Performance Evaluation Form to measure contractors' compliance with the requirements of Schedule D 'HSE requirements', records on contractor HSE evaluation to be used for future reference at contract extension or during new tenders.
- Roll-out sessions on updated Strategy and implemented changes were conducted to key personnel involved in contractor management.



#### IV. Asset Integrity & Risk Management G4-OG13, GRI 103-3

To upgrade the Barrier Model toward partial automation, the Barrier Tool Model software requirement specification was developed.

Activities implemented in 2017 with regards to risk management have been described in detail in section 'HSE Risk Management.'

#### V. Occupational Health

With the aim to ensure that workplace health and environmental risks are fully understood and controlled, the following activities were implemented in 2017:

- Benzene Risk Reduction Plan activities were implemented including monitoring of benzene level, which revealed neither exceedance, nor risk to personnel.
- Recommendations from the 2016 Asbestos Management survey of KPO facilities and buildings were communicated to relevant landlords of offices and accommodations to ensure responsibility is taken for dealing with any proved cases of asbestos presence and to prevent further use of asbestos. It is worth mentioning that asbestos use in RoK is still legal whereas is prohibited for use in Europe.
- Legionella awareness and risk reduction plan was implemented comprising Water System risk assessment. Revision of the KPO Water quality procedure was based on the assessment's results.

#### VI. Environmental Management

Within the HSE Plan, the analysis of KPO opportunities on air emissions reduction for 2017-2021 was conducted to determine KPO's capabilities to reduce air pollutant emissions. A list of projects/recommended actions was approved for inclusion in the KOGCF development projects, EPMPs, KPI, etc.

Forest pathology research of green plantings in the area of 553.5 ha within the Karachaganak Field was done in 2017 in order to conserve the existing tree plantings and shrubs against the infesting ants and diseases.

Action Plan for the KOGCF Biological diversity conservation in 2018-2020 was developed with the aim to identify business risks related to biodiversity and ecosystem services, address them appropriately and, where possible, turn them into opportunities.

To determine the locations for storage of snow removed from the KOGCF facilities and drilling sites, 'Snow storage siting at KOGCF' project document was designed including recommendations for further actions on the use of certain areas for snow storage.

#### VII. Road Safety Management

To ensure sustainable road safety improvement, with particular emphasis on journey management planning and to share the experience, KPO hosted the Road Safety Peer Assist with participation of Shell, Eni, Chevron, KMG and TCO representatives. Recommendations for further improvement were integrated in the Road Safety Improvement Plan (RSIP) and implemented in 2017:

- Gap analysis of KPO and Contractor procedural requirements on journey management;

- Assurance of the in-vehicle monitoring system (IVMS) effectiveness and contractors' 100% fitting with the IVMS;
- Alignment of Motor Vehicle Incidents reporting with IOGP and Partner companies;
- Implementation of slabs transportation management of change (MoC);
- Aksai-Field railway restoration for materials transportation from/to the field, reducing the risk of loads transportation;
- Passengers' Railway Transport Review Study, development of risk mitigation measures.

#### VIII. Project HSE Management

In view of improving management of the HSE risks related to projects, Project Execution Directorate implemented a robust HSE Strategy 2017 to meet the level of project risks for 2017-2020.

#### IX. Security

To ensure compliance with the RoK Resolution # 191 requirements on antiterrorism protection, the short-term management of change measures on close-out of the Close Circuit TV installation were implemented in 2017.

To reduce risks from security threats, the Threat & Risk Assessment action plan was developed and implementation of measures started.

The 2018 HSE Improvement Plan consists of the same nine elements.



HSE Contractors' Forum 2017





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## HSE ENGAGEMENT AND COMMUNICATION GRI 102-11

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.

Thus, the KPO and Contractor Senior Management HSE Forum 'Getting to the Goal of Zero Harm and Zero Leaks' on 28<sup>th</sup> September 2017 was attended by the senior representatives from KPO, Shell, Eni and 45 contractor companies.

The Forum is a unique opportunity for leaders to share experiences and express commitment to HSE concerns on improving safety at workplace. Participants were involved in discussion and by means of LEGO game each participant designed his/hers personal commitments to enhance Safety Culture in their organisation.

'KPO in Safety 2017' 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 programme is focused on discussions in small groups about 'Care' (looking after each other), 'Complacency' (Risk Normalisation) and 'Dilemmas'. The programme was launched on 10<sup>th</sup> May 2017 and continued through August having involved over 7,400 KPO and contractor employees in 360 sessions.

The Winter Safety campaign was rolled out in October 2017 to remind employees and contractors about precautions to stay unharmed in winter time, whether walking or driving. Employees presented a lot of positive feedback about the programme.

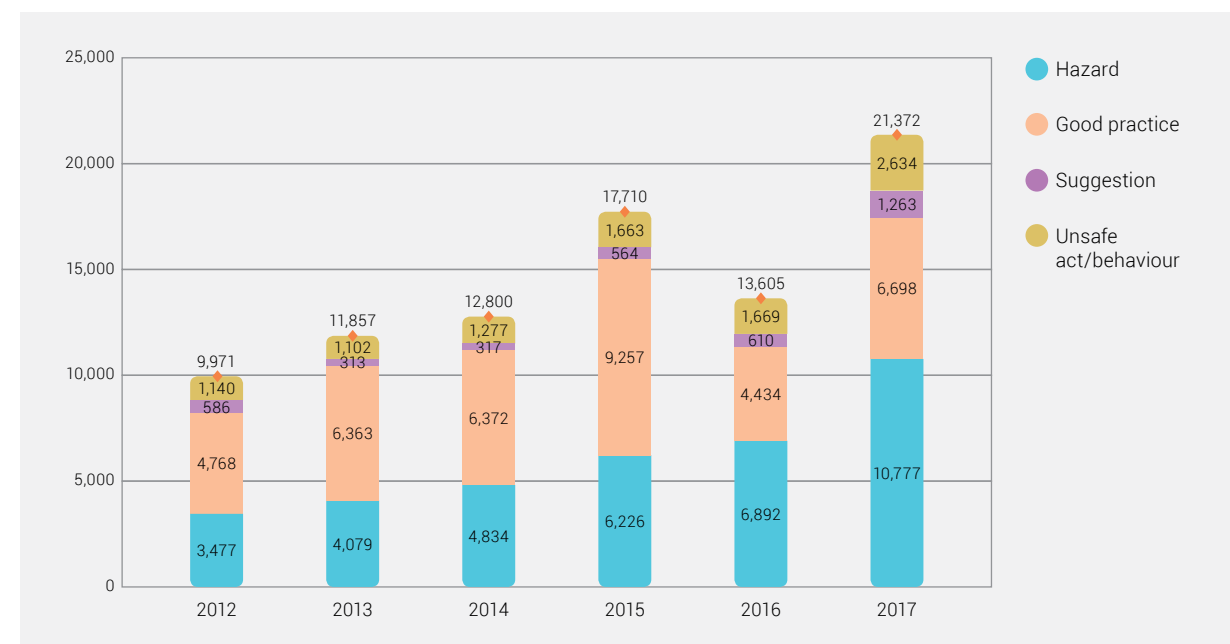
HSE Leadership and Management Tours programme was set for KPO Managers to be visible in the workplace and interact with the workforce. In 2017 the number of the HSE leadership tours exceeded the minimum target set for the year: 97 leadership tours were conducted by Directors and Controllers against the planned 50,652 HSE management tours 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 talk to Top Management about HSE and to address their HSE concerns and issues.

Maximise Safety Programme – implementation of the "Inside Lesson Learnt" Eni videos. These are 10 minutes videos that are based on the real events and contain the simple but crucial lessons learned on Permits to Work, risk assessment, toolbox talks, assigned roles etc. During 4 months of 2017, four safety video films related to personal safety in operations ('Back to Safe', 'Overload', 'I wait for you', 'Own goal') were rolled out to KPO and Contractors' personnel working in production facilities/units at the Karachaganak Field.

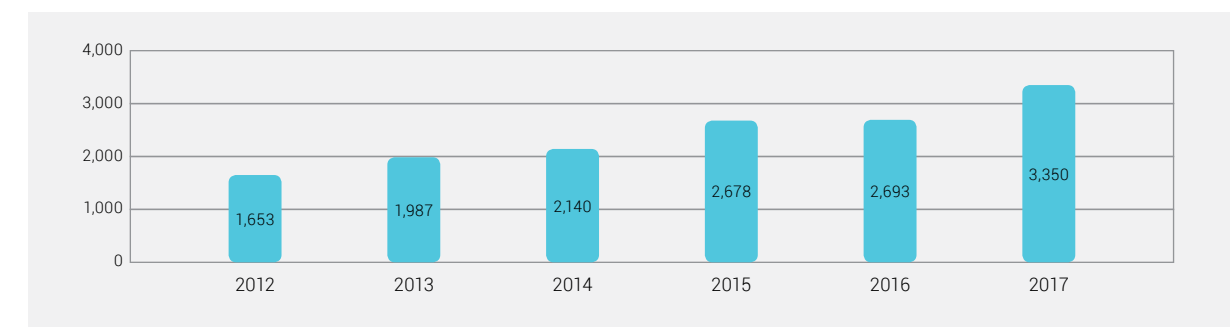
## HSE CARDS PROGRAMME GRI 102-11, 103-3

KPO HSE Card Programme has successfully progressed during 2017 both in terms of increased number of observations submitted and the number of new observers involved.

GRAPH №5. HSE CARDS BY TYPE OF OBSERVATIONS, 2012-2017



GRAPH №6. PERSONNEL ENGAGEMENT IN THE HSE CARD PROGRAMME, 2012-2017



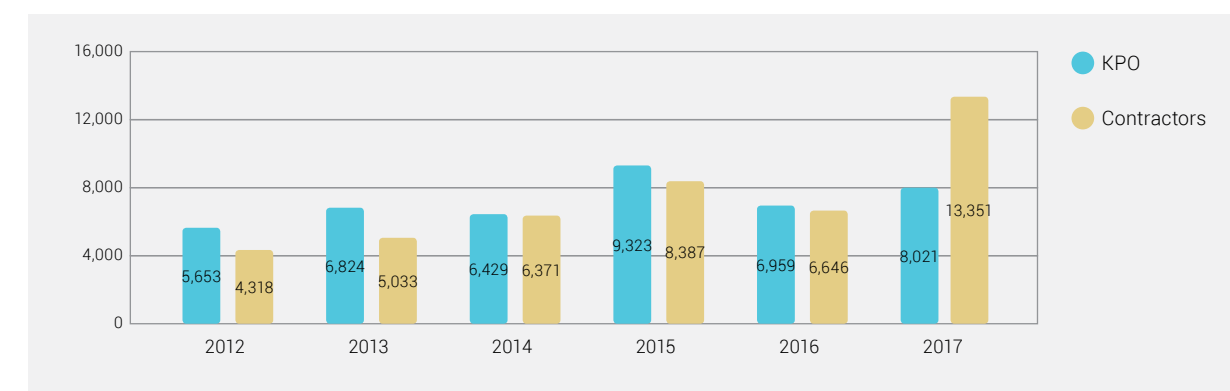
In total, the following 2017 statistics is worth noting:

- over 21,000 observations submitted throughout 2017;
- 14,716 corrective actions assigned, 98% of them have been successfully implemented;
- 23 Near Misses were reported via HSE Card and further investigated thus preventing more serious events from happening;
- 102 meetings of the HSE Card Committee held;
- 123 additional actions/initiatives were introduced based on analysis of the observation data;
- 1,653 new observers were trained.

A new HSE Card training video was shot and rolled out to contractors' personnel to increase their awareness about the observation and intervention techniques. For the Company personnel the video was supplemented with an e-learning questionnaire.

In 2017 the contractors' personnel involvement in the HSE Cards programme has significantly increased through promotion and encouragement by the Card Committees. In addition, 11 contractor companies were granted direct access to KPO HSE database to enable them to upload their cards and manage their follow up.

GRAPH №7. ENGAGEMENT OF KPO VS CONTRACTORS IN HSE CARDS PROGRAMME, 2012-2017



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

- Over 400 KPO and contractors' employees received promotional gifts for quality observations;
- 70 people were rewarded with monetary prizes for the best observations upon the quarterly results;

- Two new quarterly award categories were introduced in the scheme, such as 'Best observation over a Dangerous occurrence/ Near miss' for near misses' reporting and 'Best Office Safety Observation' for rewarding critical observations related to non-production areas.



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EMERGENCY RESPONSE MANAGEMENT GRI 102-11

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

KPO is responsible to ensure personnel's readiness to respond to any potential emergency in the short and long term. It is also important to monitor the Company's effectiveness in implementing the business contingency planning.

KPO has a robust 3-level Emergency Response system in place required to undertake prompt actions in case of any incident, accident or emergency situation, and to assess their scale, work out solutions for their containment and control.

- Level I: An event that can be dealt with on site or at a location with their resources.

- Level II: The emergency's impact remains limited within the site but there might be a potential external impact that necessitates the use of public emergency services or resources of other organisations.
- Level III: An event that is beyond the resource capabilities of the location and requires activation of the Crisis Management Team to provide additional resources and support or an incident that has the potential to escalate such that there may be damage to the company reputation.

Every year, the system is tested with the various exercises as per the KPO's Level I, II and III Emergency Response Training and Exercise Plan. The record-breaking number of such exercises was conducted in 2017:

TABLE №12. EMERGENCY RESPONSE EXERCISE CONDUCTED IN 2017

EXERCISE TYPE / NAME	ER LEVELS INVOLVED	DATE	DESCRIPTION OF ACTIVITIES
Special tactical training exercise	I	June 2017	Oil spills elimination in the waters of the Kushumsky Canal, at the points of its crossing with Karachaganak-Atyrau pipeline by deployment of booms and equipment for oil gathering
Integrated Emergency exercise ORION at KPC	I, II, III and Operator Companies	July 2017	Simulation of a release of toxic fluid at KPC area 230 with mobilisation of firefighting, emergency rescue and medical teams and evacuation of more than 700 personnel from the field
Table Top exercise QUASAR at Unit 2	I and II	August 2017	Simulation of a leak at the separator outlet at Area 200 in Unit 2
Table Top exercise PLUTON	II and III	August 2017	Evacuation of expatriate working staff due to deterioration of security and safety in the country
Table Top exercise SATURN	II and III	November 2017	Security incident simulating a terrorist attack involving an 'active shooter' to exercise emergency response and security teams
Table Top exercises at Unit 3, KPC, Gathering, Well Operations	I and II	August, November 2017	Scenarios chosen in accordance with the Units' Emergency Response Plans
Security exercise RHEA	II	November 2017	KPO Security Evacuation Plan (KPO-AL-SEC-GLS-00011) was tested to identify areas for improvement



Throughout 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.

91 persons were trained at more than 15 training sessions in the year. Thus, personnel expertise and effectiveness is maintained at a sufficient level to respond to emergency and potential mobilisation.

In 2017 KPO continued training of staff on civil protection via e-learning system, as required by the RoK legislation. KPO management team and leaders of emergency rescue teams and units passed training on civil protection at the WKO Department of Emergency Situations and had refresher courses at Emergency Situations Committee's training centre under the RoK Ministry of Internal Affairs. In addition, 68 participants of emergency management teams passed specialised training on management of large scale incidents during the year.

COMMUNITY PREPAREDNESS GRI 102-11

With the view to maintain continued readiness of the public address stations in the settlements around the perimeter of the Karachaganak Field, KPO emergency response specialists were running monthly test of the alarm signals throughout the 2017.

In addition, the Company carried out scheduled maintenance works on the equipment of the public address stations in order to ensure their uninterrupted functioning.

The upgrade of the public address stations in the Priuralnoye, Dimitrovo, Karachaganak, Zhanatalap, Zharsuat, Berezovka, Amangeldy, Karakemir and Uspenovka villages were successfully completed in 2017.

During 2017 KPO specialists held a number of meetings with the officials of the rural districts based in the vicinity of the Field and the KATS pipeline. The details on those meetings are described in the Table №13.

TABLE №13. KPO ENGAGEMENT ON EMERGENCY RESPONSE WITH THE OFFICIALS OF THE RURAL DISTRICTS BASED NEAR THE KARACHAGANAK FIELD ON 2017.

№	PURPOSE	QUANTITY	INVOLVED COMMUNITY GROUPS
1	Informing the officials of the Priuralnyi, Zharsuat Dimitrovo, Karachaganak, Zhanatalap, Uspenovka, Amangeldy, Berezovka, Bestau, Karakemir settlements and Tungush LLP about the purpose of public address stations, about the operating procedure for population upon alarm signals triggering	34 meetings with the participation of 148 people in total	Akims and employees of the Rural District Akimats, responsible persons and officials
2	Conducting training sessions with the participation of Akims of the Rural Districts, officials and residents of settlements, adjacent to KOGCF, on the operating procedure for population upon alarm signals triggering and evacuation of the public in case of an emergency in the Field	6 training sessions with the participation of 74 people in total	Akims and employees of the Rural District Akimats, responsible persons and officials, community members
3	Informing the officials of the Priuralnyi, Zharsuat Dimitrovo, Karachaganak, Zhanatalap, Uspenovka, Amangeldy, Berezovka, Bestau, Karakemir settlements and Tungush LLP about the procedure for safe implementation of agricultural activities during the fire hazard period	8 meetings with the participation of 51 people in total	Employees of Akimats and agricultural units
4	Informing the officials of settlements located along the export pipeline Karachaganak – Bolshoi Chagan – Atyrau (KATS), about interaction procedure in case of an emergency on export pipeline KATS	33 settlements visited, 80 people participated in total	Akims and employees of the Rural District Akimats, responsible persons and officials

Apart from the above KPO continued to work closely with the local authorities in the periods of high water, fire hazard and in winter.





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

TABLE №14. TARGETS IN ASSET INTEGRITY GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Finalise implementation of the Barrier Model for Eco Centre and export pipelines	Partially achieved	KPO developed and issued the Barrier Model scopes for further incorporation of Eco Centre and export pipelines. This expansion of BM requires updated software; software specification was finalised.	Finalise the procurement process of Barrier Model new Tool; start new software implementation in 2019
Perform independent verification of implemented operational performance standards	Partially achieved	20 Operational performance standards were developed of which 17 were verified by independent verification body. The analysis of the impact of implementing the performance standards in operation is on-going.	Start implementation of Performance Standards into the Computerised Maintenance Management System (CMMS) to strengthen management of physical barriers
Issue the Integrity Operating Window standard and trial its implementation at KPC	Partially achieved	KPO reviewed Alarm Management strategy and developed an action plan. Physical systems on site were upgraded, all internal standards and references reviewed, monitoring and supervision process improved.	Start-up and pursue full rationalization, targeting end of 2019
Set up a Process Safety Awareness Campaign to reduce Loss Of Primary Containment	Yes	In support of LOPC reduction, in mid-2017 Process Safety Fundamental campaign was launched aiming at increasing personnel awareness on their personal contribution to reduce leaks and spills. The reduction target aims up to 30% based on the analysis of the international and internal KPO incident statistics.	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

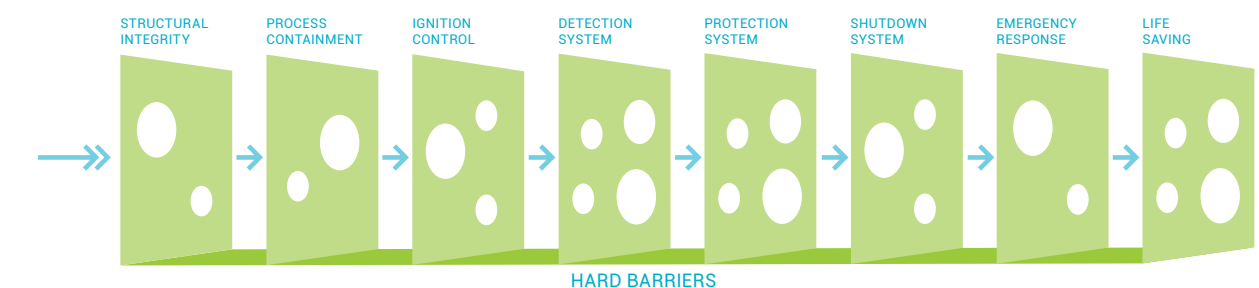
Mature organisations constantly seek knowledge of potential threats to its operation and welcome the knowledge of individual emerging risks that may warrant a 'high risk' ranking. Armed with this knowledge, risks can be effectively mitigated through the management and verification of designed safety barriers in place to prevent or control major accident hazard (MAH) events. With this frame of reference, KPO's Asset Integrity department continuously assesses the 'health status' of the designed safety barriers to identify deficiencies ("holes in the barriers") to prevent them from becoming major accidents.

The core tool used to achieve this target is the 'Barrier Model' that provides a visual risk-oriented analysis of each of the main operational plant. The main benefits of this tool are as follows:

- Categorises plant issues against the individual asset integrity barriers;
- Risk ranks the issues and subsequently prioritises the activities based on risk;
- Presents to management at Unit and Corporate level a cumulative MAH risk picture including 'top risks';
- Provides a risk picture for each Unit location in support of daily risk assessments at Unit level.



PIC. №6. BARRIER STATUS REPORTING IN KPO (EIGHT MAIN BARRIERS)



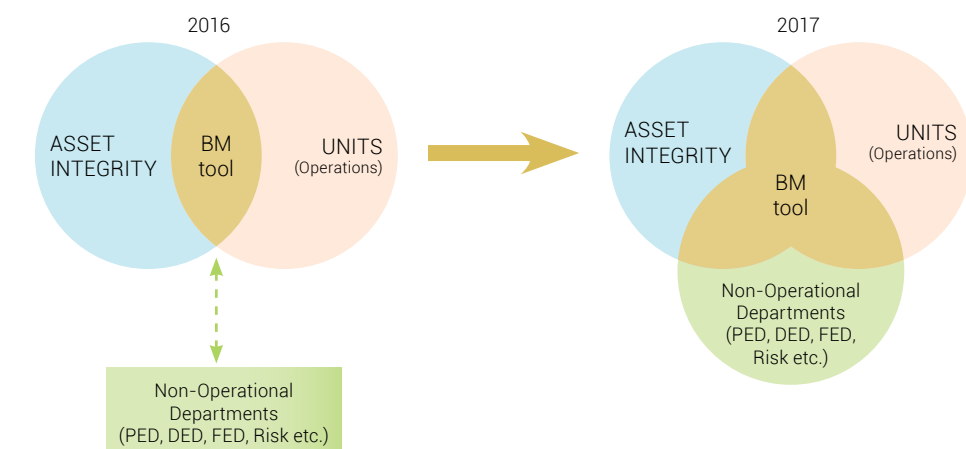
Additionally a number of Key Performance Indicators (KPIs) have been selected to analyse and report at Unit and Corporate level the cumulative risk picture to enable KPO to react on a timely basis to prevent any Process Safety events.

In this way throughout 2017 KPO continued to consolidate the Asset Integrity management system implemented across the field units to continuously improve the process safety culture and capabilities within the Company.

1. The KPO Asset Integrity Barrier Model GRI 103-2

The Barrier Model Tool is now widely used for decision making and is available on the KPO portal. Involvement of KPO Units/Departments' personnel has seen increasing gradually growing to some 170 users. Throughout 2017 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 top risk issues. The implementation of an upgraded Barrier Model software is planned for 2018/2019 in order to improve efficiency of the process with increasingly 'live data' and to reduce the response time to deal with identified potential hazards. The evolution from 2016 to 2017 and the increased integration between the KPO functions is further explained below.

PIC. №7. WIDER INVOLVEMENT WITH KPO BARRIER MODEL IN 2017





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Upon the outcome of 2016, KPO's Barrier Model was endorsed by KPO Parent Companies in various forums. This included winning the first prize for the Asset Integrity effort for the project 'Barrier Model and Area Specific Barrier Model' awarded by the Exploration & Production Subdivision of Shell in 2017.

Overall in 2017, KPO identified 70 process safety hazards that required special attention, 24 of which have been mitigated or eliminated. A dedicated action plan is developed for the remaining 46 hazards. By their character some of the hazards identified and recorded in the Barrier Model are of long-term nature and require close monitoring of existing interim control measures until long term plan actions are implemented.

## 2. Monitoring of Asset Integrity KPIs GRI 103-3

The Asset Integrity department facilitates the monitoring of the effectiveness of barriers' performance. This is done by means of compiling critical data into the KPO Process Safety Key Performance Indicators (KPIs). The analysis is aimed at raising awareness of critical controls to prevent and mitigate against Major Accident Hazard (MAH) events. The reporting is conducted on a monthly and quarterly basis to operations personnel and senior management as well as to KPO

Operators. Some of the KPI data is provided to IOGP for industry wide reporting (without reference to specific companies).

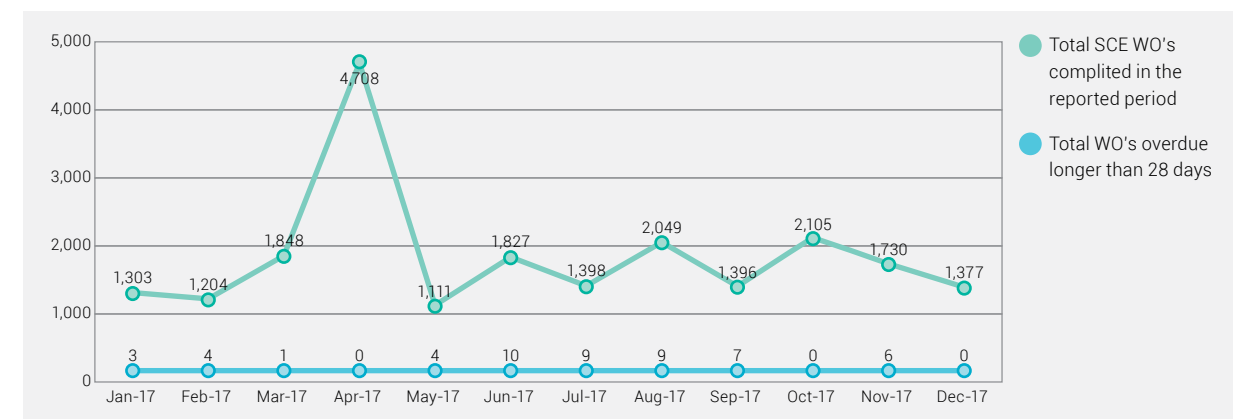
In 2017 there were three significant achievements generated by the proactive use of KPIs:

- 1) reduction to zero of overdue Safety Critical Element (SCE) maintenance work orders (WOs);
- 2) 30% reduction of the total number of Loss of Primary Containment (LOPC) events against 2016 performance;
- 3) alarm rationalisation project.

### 2.1 Safety critical maintenance

KPO closely monitors the effort of maintenance to ensure that suitable and sufficient controls are in place for safety critical equipment to remain functional and available. This is done through tracking the completion of safety critical equipment work orders (WOs). The effort has resulted in maintenance backlogs being brought to very low levels. The graph N°8 demonstrates the number of overdue SCE maintenance WO's against the activities completed in the reporting period.

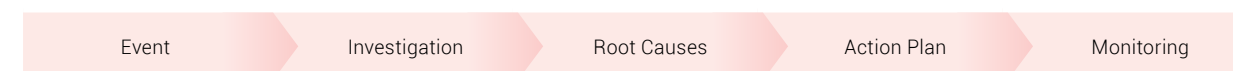
GRAPH N°8. MAINTENANCE BACKLOG OF SAFETY CRITICAL ELEMENTS EQUIPMENT



In 2018 a set of new KPIs will be introduced and a Process Safety Dashboard will be created in order to ensure that KPIs remain relevant and communicate valuable information to the stakeholders.

## 2.2 Loss of Primary Containment (LOPC) G4 OG 13

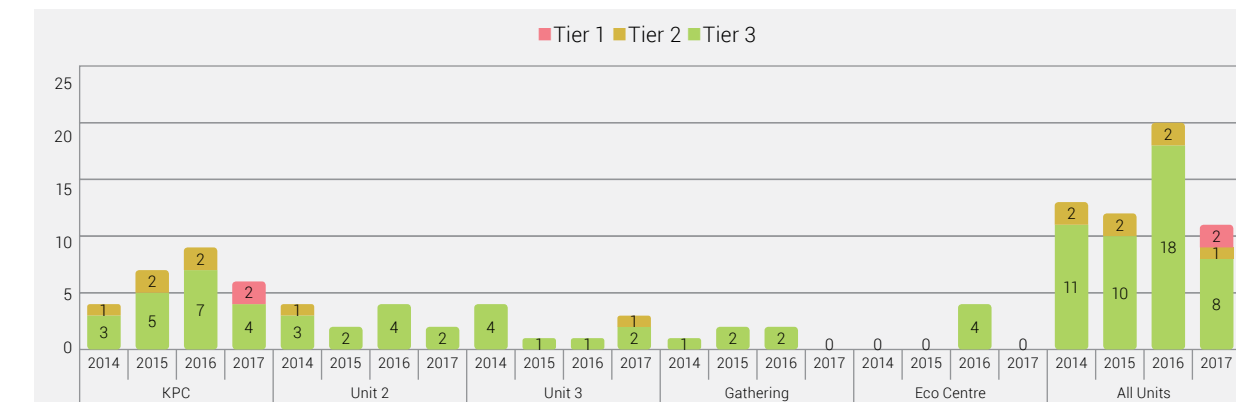
Management and analysis of major accident hazards is the key to prevent or reduce the likelihood and severity of process safety events. Once a main Process Safety event occurs, an appropriate level investigation is carried out. The related data, findings, root causes and recommend actions are entered into the KPO Synergi database for further actions tracking and monitoring.



The statistical analysis for 2014-2017 shows that the number of Loss of Primary Containment events in 2017 is at the lowest level comparing to the last four years.



GRAPH N°9. LOSS OF PRIMARY CONTAINMENT BY PROCESS FACILITY, 2014-2017



Legend:

Process Safety Event ■ Tier 1 refers to a number of Losses of Primary Containment events related to the process with greatest consequences (reportable to IOGP);  
Process Safety Event ■ Tier 2 refers to a number of Losses of Primary Containment events related to the process with lesser consequences (reportable to IOGP);  
Process Safety Event ■ Tier 3 refers to a number of other Losses of Primary Containment events related to the process. These events are not reportable to IOGP and are collected by Company for internal analysis and lessons learning.

One may see two Tier 1 leaks indicated on the 2017 bar. KPO has been using threshold limits for Tier levels from the international standards API 754 and IOGP 456, which were revised at more rigorous parameters in 2016. Tier 1 leaks did not occur in previous years. One of the 2017 Tier 1 leaks would have been classified as Tier 2 according to the previous edition of the standards.

The 2017 Tier 1 leaks included one gas leak in KPC Water Treatment Unit and one condensate spill in KPC Condensate Export area.

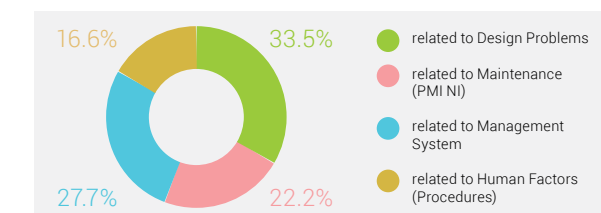
In the first event, the gas leak was through a hole (13 mm) on a nozzle of a vessel. No injuries were reported. The main root cause of the event was corrosion due to the aggressive inventory stream coming from the existing Caustic Neutralization Unit. The mitigation action was composite wrapping of all the nozzles of the vessel. The plan is to revise the operation of this process.

The second event was a condensate spill that occurred from a process safety valve on a drain vessel. There were no plant alarms and no evacuation. No injuries were reported. There are several root causes of the incident, e.g. deficient design of the KPC Condensate Export Pump and Level Control in the Closed Drain Vessel. After investigation, 13 of 21 raised actions have been closed by the end of year.

For all process safety events, KPO conducts investigations, root cause analyses and develops action plans. This can be seen from the analysis performed in the graph N°10.

Reducing the number of LOPC events is a complex process, which requires contribution by all KPO directorates at all of the design, construction, operate and sustain stages of the plant life cycle. Work will continue in 2018 to learn lessons by identifying and addressing weaknesses in the management system that has led to process safety events.

GRAPH N°10. KPO LOPC ROOT CAUSES IN 2017



One of the initiatives set up in 2017 was the Process Safety Fundamentals campaign. This is a targeted programme to increase the awareness of personnel in the basic process safety requirements. It covers issues that are common causes for the majority of process leaks and spills and incorporates lessons learned from other operators. This campaign is further summarized in the Process Safety Fundamentals section of the report.

## 2.3 Alarm Rationalisation Project GRI 103-3

In 2017 KPO initiated the Alarm Rationalisation Project. The objective of this project is to define and optimise consistent criteria to be used for specifying alarms and their priorities to manage the risk of harm to people and the environment associated with control of operational situations.

During the reporting year all internal alarm standards and procedures were reviewed for their compliance with relevant International Standards and Guidelines. The review results were published in the document 'KPO Alarm Management Philosophy'. This document provides guidance for how to provide a more consistent approach to



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alarm management and defines how the activities of the alarm management lifecycle will be improved.

As per 'KPO Alarm Management Philosophy', all required activities will be performed in three stages, targeting end of 2019 for project completion. The stages are:

- Initial evaluation (ongoing): the report of the existing Alarm Database (e.g. priorities, set points, etc.) for each facility to be produced (Unit 3, Unit 2, KPC, etc.);
- Alarm Rationalization exercise: a series of workshops will be carried out involving the main stakeholders (Operations, Technical Authorities, Central Maintenance, etc.) based on the review done on the previous stage;
- Implementation: the outcome of the Rationalization exercise will be physically implemented in the existing automation systems by Maintenance department.

After upgrade of the Alarm Systems is implemented there will be updated and fuller compliance with the requirements of the International Standards. The final objective is to rationalize the number of alarms received by Control Room Operators to enable the operators to focus on the critical signals only.

### 3. Process Safety Fundamentals campaign GRI 103-3

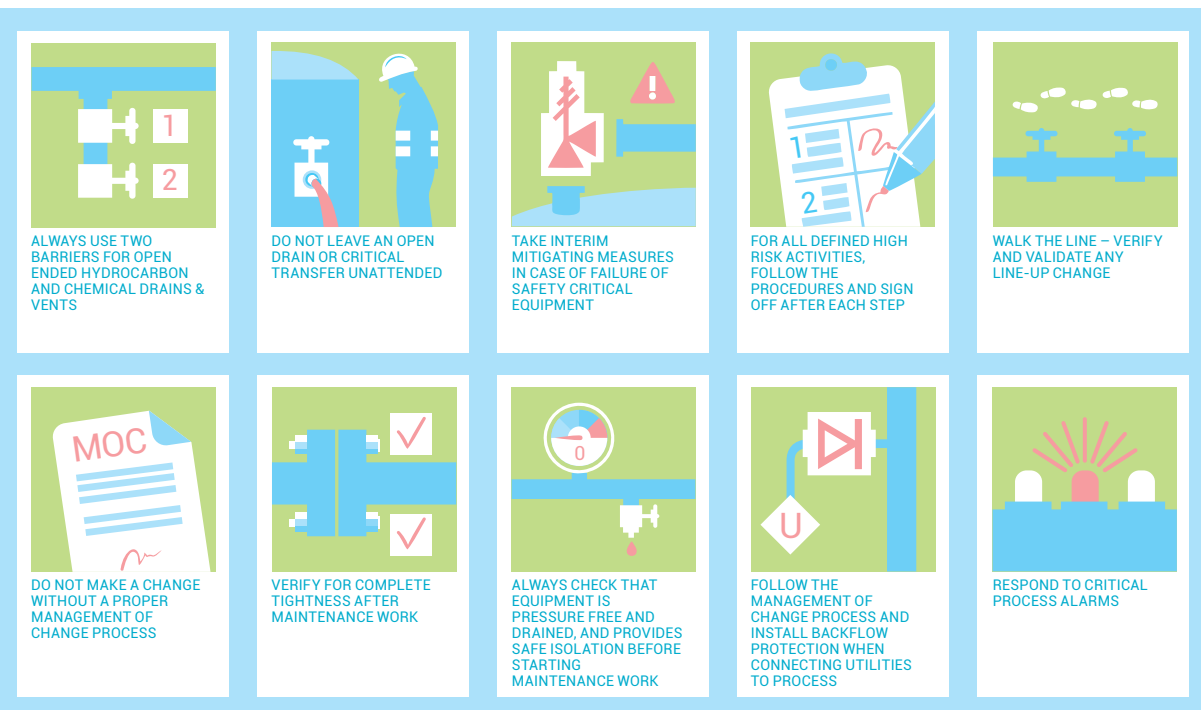
Process Safety Fundamentals (PSFs) are the learnings from significant Process Safety incidents in the wider oil and gas industry. The

Shell PSF campaign materials were adapted by KPO and the Programme launched in August 2017. The focus was on existing good operating practices and behaviour, rather than establishing new requirements.

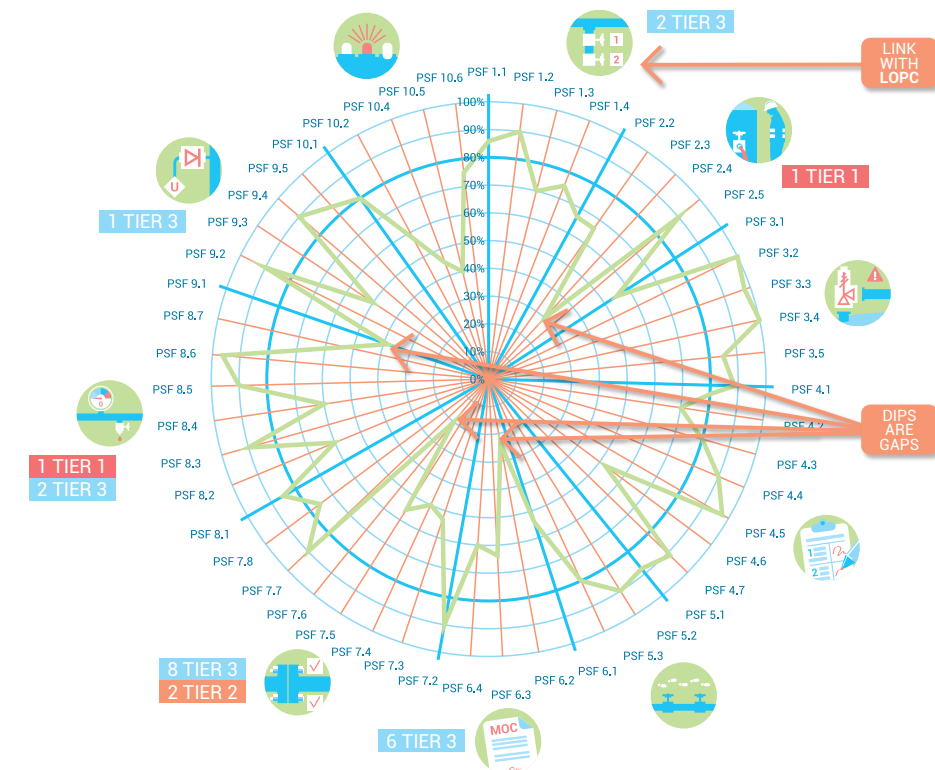
The aim of PSFs is to reduce the number of process safety incidents by making extra emphasis on the routine on-site activities and requirements to reduce unsafe acts and conditions. The campaign was oriented to front line operations personnel (KPO and Contractors). To deliver this message, visual materials (billboards, posters and plastic cards) were distributed across the field locations together with roll-out presentations carried out by Asset Integrity representatives.

The programme, mainly held in Russian, has been extensive with engagement with 1,108 out of 1,509 frontline operational staff plus 214 contractor employees that attended PSF roll-out awareness sessions. During these sessions attendees have been requested to participate with their own knowledge and concerns. This included completing a specific questionnaire with 52 questions covering all ten topics of the PSFs. The KPO Asset Integrity team developed this questionnaire to identify potential process safety critical issues related to KPO facilities and systems for each of ten topics. 704 Questionnaires were filled in (i.e. 63.53 % out of all captured staff) and responses have been analysed. The feedback was fed back to Unit Managers for further treatment.

PIC. N°8. KPO PROCESS SAFETY FUNDAMENTALS



PIC. N°9. REVEALED WEAK POINTS IN PROCESS SAFETY FUNDAMENTALS CAMPAIGN



This diagram shows the statistical data from responded questionnaires. It includes analysis of critical process safety issues with each PSF topic correlated with relevant process safety incidents that have occurred in KPO (e.g. "2 Tier 3" associated with a particular PSF topic). A green line tending to the centre of the "spider diagram" demonstrates the lack of positive answers or concerns raised. These will be reviewed and suitably actioned by management.

KPO will continue to build a process safety oriented culture and reinforce proactive approaches to the management of major accident hazard risks. The objective is to develop and lead the Asset Integrity and Process Safety activities to make all KPO functions jointly able to avoid major accident events; 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 protect integrity of the Company and contractors' personnel as well as assets, including intellectual and intangible assets, in line with best international standards and in full compliance with the RoK laws and regulations.

KPO Security Department conducts security risk assessment cycles based on annual reviews to identify possible security risks and threats for KPO and accordingly security measures are to be taken to mitigate security risks. Aligning with Parent Companies security representatives none of the security risks was assessed as a high risk in 2017.

KPO deploys over 900 professional security personnel, who provide continuous control and protection of access gates, offices and pipelines. Over 2017, thanks to the effective security controls, seven thefts of Company assets were investigated resulting in six dismissals. Moreover, security interventions to suspected violators of Prohibition on use of alcohol, drugs and psychotropic substances policy continued in 2017 and the total number of 58 cases was intervened by security.

With a significant effort put in the pipeline security KPO has not registered a single case of illegal tapping in the export pipeline over the last eight years.

We highly value the support and involvement of the local communities in security patrolling of the export pipeline. In fact, in 2017 3 towns and 28 villages located along the pipeline were visited with the aim of raising awareness among the officials and population about potential risks and consequences of an incident,





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TABLE №15. OUR TARGETS IN SECURITY GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Maintain zero illegal taps in the KPO Export pipeline	Yes	Perpetual monitoring of export pipeline sections was held by means of mobile patrols and 'Optasense' alarm system.	Maintain zero illegal taps in the KPO export pipeline
Continue training on Human Rights and Security Principles for Security service providers, including newly hired employees	Yes	As of the end 2017, the percentage of trained Security personnel reached 100%.	Continue training on Human Rights and Security Principles for Security service providers, including newly hired employees
Complete 1 <sup>st</sup> phase of Security Management System (SMS) Project: <ul style="list-style-type: none"><li>Finalise fencing installation at Unit 2 and EOPS</li><li>Install fencing at KPC and Unit 3</li></ul> Start Phase 2 of SMS project: <ul style="list-style-type: none"><li>Complete tender for the SMS Phase 2 engineering, procurement and installation</li><li>Progress engineering stage of the project</li></ul>	Ongoing	Fencing installation was completed in Unit 2 and Early Oil Production Satellite (EOPS). Tender exercise for engineering, procurement and construction contract was started.	<ul style="list-style-type: none"><li>Complete fence installation in KPC and Unit 3</li><li>Award the engineering, procurement and construction contract</li><li>Provide support to Project Execution Directorate in implementation of the new projects</li></ul>

evacuation procedure in case of an incident, scope of emergency response exercises, etc. We recommend that community members behave proactively in informing about suspicious activities nearby the pipeline.

Numerous meetings were conducted with officials of the local Akimats, school staff, high rank representatives of the Department for Emergency Situations and population on the above topics.

Since 2015, KPO has been supporting an initiative of the Parent Companies in following the Voluntary Principles on Security and Human Rights (VPSHR). In 2017, the newly hired personnel of the two KPO Security contractors in the Field, Aksai, and export pipeline received ad hoc training in human rights policies and procedures relevant to operations. As of end 2017, 100% security personnel were trained. GRI 410-1

In 2017, the work on development and implementation of the Security Management System (SMS) progressed significantly. During the year, 4.5 km of new fence were successfully installed with and the old fencing of Unit 2 and EOPS fully replaced. The Unit 3 and KPC fencing is planned to be completed in 2018. GRI 103-3

In addition, the SMS project will be integrated by the installation of a broader system of electronic security means integrated into dedicated control points.

In the end, security monitoring in all facilities will be integrated with lighting, perimeter intrusion detection system, Electronic Access Control System, CCTV, centralized control room, public address / general alarm, data transfer capability to Incident Management Centre. With all the above completed KPO will eventually fully meet the requirements of the Kazakhstani regulations.

In 2017, a broad campaign on security awareness was carried out involving all KPO personnel. This included six evacuation drills jointly with Civil Defence Department, two e-learning courses, two table-top exercises and one Incident and Crisis Management exercise testing the Security Evacuation Plan in case of major incidents.

As in previous years, a potential risk of extremist activity against the Company remains our big concern. Interrelation between KPO and the RoK law enforcement authorities at the local, regional and national levels is essential for our forewarning and preparedness. Regular meetings with officials, who had assisted in raising awareness in this area, will be continued in 2018.



PROTECTION OF HEALTH

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

TABLE №16. TARGETS IN HEALTH PROTECTION GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
<ul style="list-style-type: none"><li>Complete the final year of the Healthy Heart programme;</li><li>Develop health improvement actions based on the analysis the 4-year results</li></ul>	Yes	The Healthy Heart programme was completed.	Implement a cardiovascular health promotion programme with the focus on awareness enhancement activities
Re-evaluate the Back pain program to identify deficiencies and consider other ways to tackle the back disorder problem	Yes	The program has been closed. No plans for a rejuvenation of the programme.	
Continue promotion activities aimed at increasing employee attendance of medical check-ups	Yes	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 the Health Risk Assessment activities	Yes	210 Health Risk Assessments were carried out. The increase compared with 2016 was due to the addition of ergonomics and "at request" workplace assessments to the total number.	Continue Health Risk Assessments
Conduct a series of personal benzene monitoring for various exposure scenarios	Yes	Personal benzene monitoring was conducted; the analysis of samples showed the exposure levels well within safe limits. No routine monitoring is planned for 2018; the Benzene exposure risk reduction plan has been developed.	
Complete the risk assessment for legionella; Develop a Legionella management program and action plan	Yes	Risk assessment was conducted. Legionella control procedure has been issued. Legionella risk reduction plan has been developed.	Implement the Legionella risk reduction plan



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PRIMARY HEALTH CARE AT WORKPLACES

KPO Medical Support clinics in the Field and Aksai provide first line medical care to KPO employees. They also perform pre-shift check-ups of the safety-critical personnel, including random alcohol testing.

TABLE №17. MEDICAL SUPPORT INDICATORS, 2017

MEDICAL SUPPORT INDICATORS		PRE-SHIFT MEDICAL EXAMINATIONS (DRIVERS/OPERATORS/ELECTRICIANS)	
Number of patients, visited clinics	2,062	No. of visits	91,296
Number of patients, transported to medical facilities	98	Unfit	2
Exercises and drills participated	481	Random alcohol tests	2,158
First aid training provided for Company employees	296	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

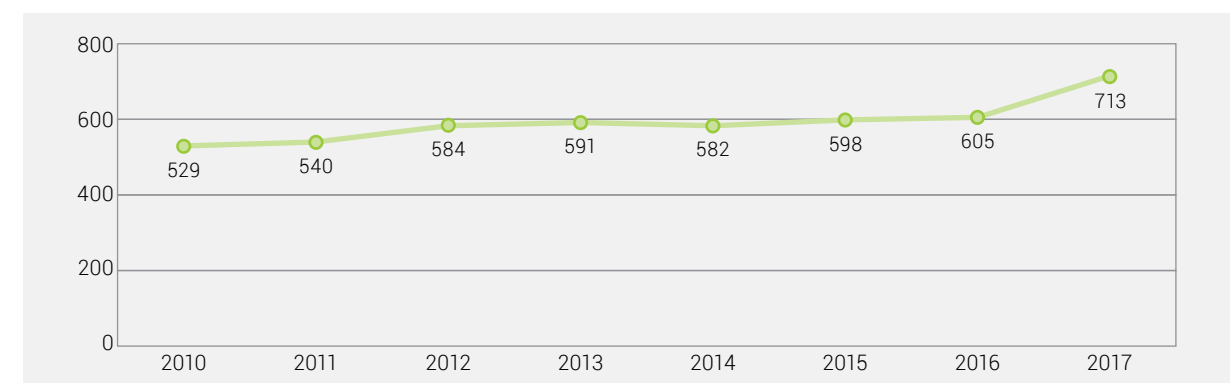
Absenteeism rates in KPO remain stable as given in graph №11. The small increase over the last six years may be explained by the

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,
- Injuries and poisoning in everyday life,
- Diseases of musculoskeletal system and connective tissue M 00-99.

GRAPH №11. KPO ABSENTEEISM RATE, 2010-2017



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.

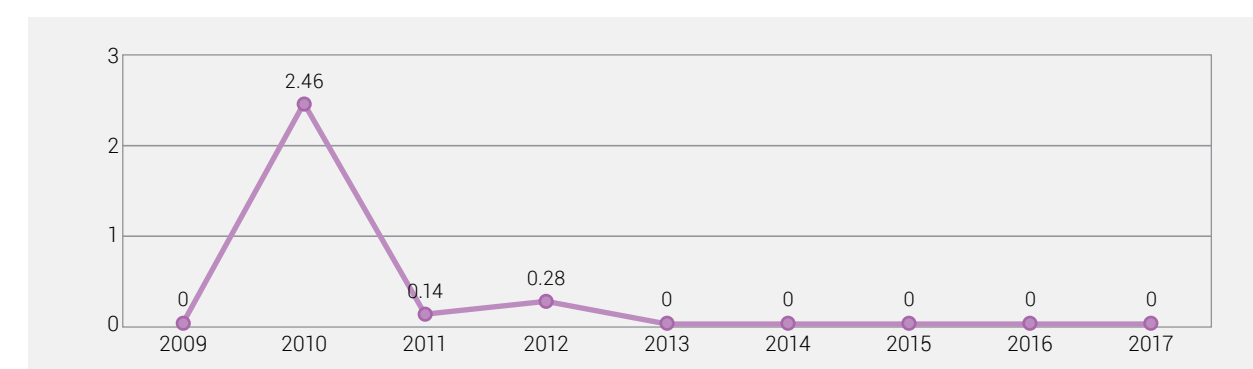


YEAR	2010	2011	2012	2013	2014	2015	2016	2017
Number of employees	2,689	2,655	2,764	2,911	3,067	3,187	3,173	3,126
Days lost	14,224	14,344	16,149	17,215	17,855	19,066	19,181	22,277
Absenteeism	529	540	584	591	582	598	605	713

Occupational Diseases GRI 403-2, 403-3

There were no occupational illnesses observed in KPO in the period of 2013-2017.

GRAPH №12. OCCUPATIONAL DISEASES FREQUENCY IN KPO, 2009-2017



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.

Food and drinking water safety

Food safety inspections in 2017 extended beyond the KPO and contractors' canteens to include Uralsk public restaurants. It was dictated by the increased number of staff working there and the need to ensure that only approved caterers are used to supply food for company-sponsored events. The General Services Department contacted the management of several establishments and offered to inspect their facilities. Eventually, seven restaurants accepted and they were inspected by the Occupational Health and Hygiene Specialists. Three of them met our standards and were declared acceptable catering providers for the Company-sponsored events.

As part of the annual Food safety programme, our hygiene specialists conducted 51 inspections of canteens providing catering services to KPO and contractors' employees.

Legionella risk assessment of the hot and cold water systems was carried out by a specialist consultant company in all KPO facilities in 2017. As a result, a legionella control plan has been developed to manage risks.

Health risk assessments GRI 403-3, 403-4

210 Health risk assessments (HRAs) were conducted in 2017. These include HRA for safety critical positions, ergonomics assessments and changes to workplace risks. Detailed description of HRA is available in the Sustainability Report 2016.

Fitness to work

KPO Fitness to Work (FTW) procedures were reviewed in order to include IOGP guidelines, and to merge with local regulatory requirements. OGUK Fitness to Work evaluation performed by international-accredited doctors will be made available in Aksai and Uralsk by 2019.

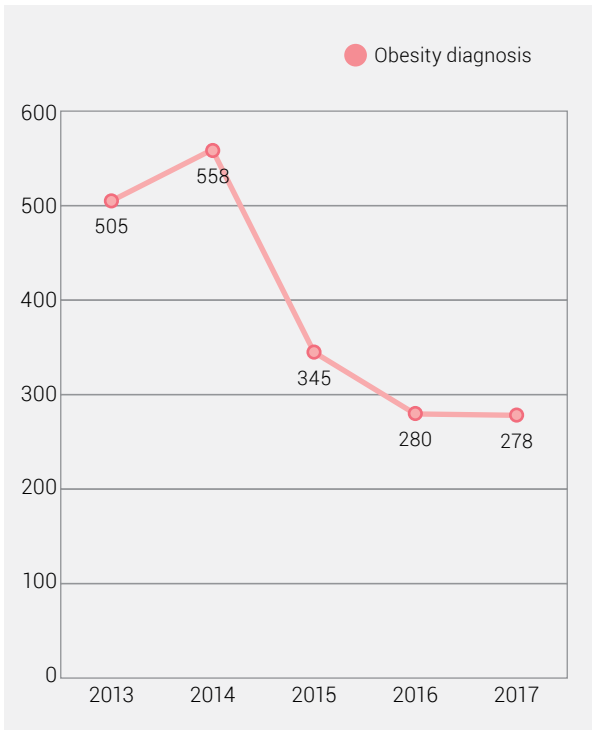


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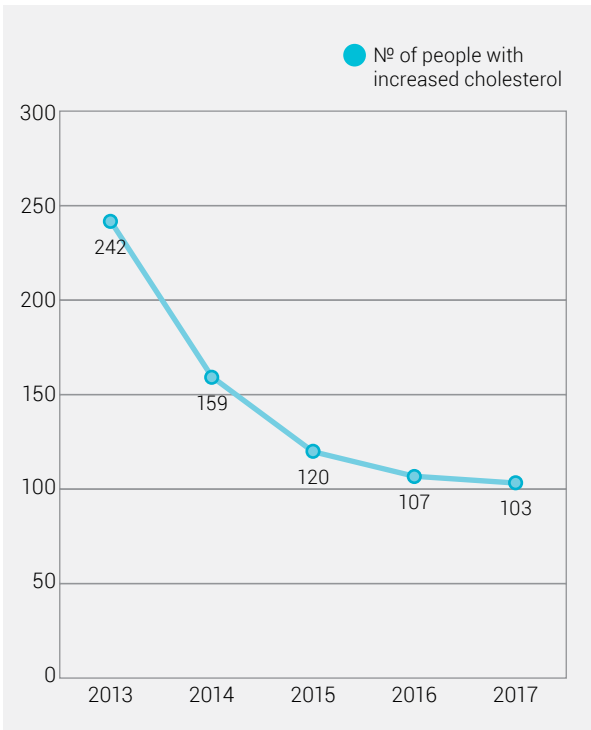
HEALTH PROMOTION

Health promotion is an integral part of the Health Management System aimed at increasing employee awareness of occupational and general health problems and how they can be prevented. The Healthy Heart programme, which began in 2013, came to a close in 2017 with excellent results. The indicators and the results of annual medical inspections being tracked over the period of the programme showed the decrease of cholesterol in blood of the participants. At the same time, a number of employees with obesity have been decreased as well.

GRAPH №13. OBESITY AMONG KPO EMPLOYEES, 2013-2017



GRAPH №14. HIGH CHOLESTEROL LEVELS AMONG KPO EMPLOYEES, 2013-2017



Community Health impact assessment GRI 413-1

In 2017, KPO completed an evaluation of the impact of its operations on the health of the surrounding communities. This was conducted through collaboration with an independent external non-governmental organisation specialising in impact assessments.

The communities evaluated comprised of 4,117 individuals living in the 8 villages around the Karachaganak field. The evaluation included environmental (soil, water, air) and epidemiological studies as well as considerations into communities' access to healthcare. There was no negative health impact identified from KPO's operations to the surrounding communities. The HIA also identified opportunities in social investment in health – particularly in improving the communities' access to healthcare. This will be included in the KPO's social investment plans for next years.

INDUSTRIAL HYGIENE AND CONTROL OF WORKPLACE EXPOSURES

Workplace attestation

Workplace attestation is a statutory evaluation of the working conditions for their compliance with the RoK regulations. In 2017 the Health Department took over this activity and arranged for the attestation of KPC, Main workshop, Warehouse, EOPS and Unit 3 by a licensed contractor.

The action plans developed by assessment results were aimed at bringing of disclosed incompliance to normative values.

Asbestos control

Asbestos management survey conducted in 2016 was followed upon in 2017. The high risk items were reported to relevant facility



managers for urgent action. An asbestos management procedure was also developed and put into effect. More work is expected in 2018 to implement asbestos management system and to control the risks.

**Operational control of industrial facilities** is a regulatory compliance activity that includes an industrial hygiene monitoring programme.

As can be seen from the table №18, the number of exceedances has been steady over the last two years with the majority of non-compliance attributed to low lighting and high noise levels. Currently, KPO is conducting 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.

TABLE №18. MONITORING OF PHYSICAL FACTORS, 2017

PHYSICAL FACTORS	2016		2017	
	No. of surveys	No. exceeding MPL***	No. of surveys	No. exceeding MPL
Noise	452	103 (22.8%)	426	106 (24.8%)
Vibration	93	19 (20.4%)	81	19 (23.4%)
EMF*	3,824	50 (0.13%)	3,936	11 (0.2%)
ESF**	2,062	0	2,133	0
Lighting	2,741	767 (27.9%)	2,741	765 (27.9%)
Microclimate	7,644	498 (6.51%)	6,630	387 (5.8%)
Total	16,816	1,437 (8.5%)	15,947	1,288 (8.0%)

\* EMF – electromagnetic fields

\*\* ESF – electrostatic fields

\*\*\* MPL – maximum permissible level

TABLE №19. WORKPLACE AIR TESTING IN 2017

MONITORING ACTIVITIES	NUMBER OF TESTS
Planned measurements	16,536
Completed measurements	15,462*
Number of exceedances	0
Percentage of measurements exceeding maximum permissible limits (MPL)	0

\* 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.





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# PEOPLE AND SKILLS

KPO business objectives can only be achieved through dedication, hard work and professional skills of its people. Our employees are essential and fundamental for the development and operations of the Karachaganak Field. We continue our efforts on staff development by adopting practices of our Parent Companies, organizing necessary training and attracting educational institutions. <sup>GRI 103-1</sup>

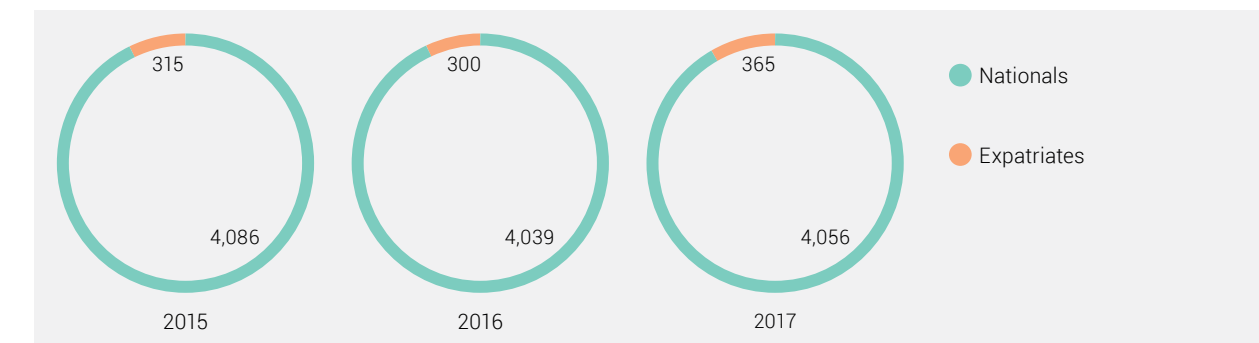
TABLE №20. OUR TARGETS IN PERSONNEL DEVELOPMENT AND REMUNERATION <sup>GRI 103-2</sup>

OUR 2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017 TO ACHIEVE TARGETS	TARGETS FOR 2018
Continue implementation of the Programme for increasing Local Content in Staff for 2015-2020 maintaining performance ≥ 75% in the Category 1+2	YES	In 2017, 76% was achieved in the Category 1+2 for executive management and their deputies, department/unit management. The target is aimed at training, retraining and advanced training of the citizens of Kazakhstan. In the framework of the KPO Programme for increasing Local Content in Staff for 2015-2020, the Intake III for Enhanced development programme was launched.	<ul style="list-style-type: none"><li>As part of the Enhanced Development Programme, implement training programmes for 173 participants as scheduled in their Individual Development Plans;</li><li>Continue implementation of the Programme for increasing Local Content in staff for 2015-2020 and maintaining performance ≥ 75% in Category 1+2 for executive management and their deputies, department/unit management.</li></ul>
Conduct a monitoring of timeliness and due fulfilment of provisions of the Collective Agreement	YES	Payment of all benefits as per the provisions of the Collective Agreement performed in line with allocated budget. Regular meetings held with both Trade Unions / Trade Union Federation. Monthly monitoring / checks of guaranteed payments to employees.	<ul style="list-style-type: none"><li>Conduct negotiations of the new Collective Agreement by 31.12.2018,</li><li>Continue cordial industrial relations with Trade Unions and employees</li></ul>
Continue the analysis of pay levels in KPO compared to the current market levels and make adjustments if necessary	YES	KPO actual salaries were compared against relevant market values provided in Oil & Gas salary survey. As per the comparison, KPO is in line with the market and there was no need in pay adjustments.	Implement annual comparison of KPO salaries against the RoK Oil & Gas market based on the salary survey and initiate adjustments, if required
Review the work made by HSE units to improve cooperation and efficiency	IN PROGRESS	The HSE Organizational Review took place in December 2017 – February 2018 resulting in produced report with improvement recommendations.	Support the implementation of the optimization of HSE functions across the Company including review of organizational structure, job descriptions, employee's work conditions, etc.

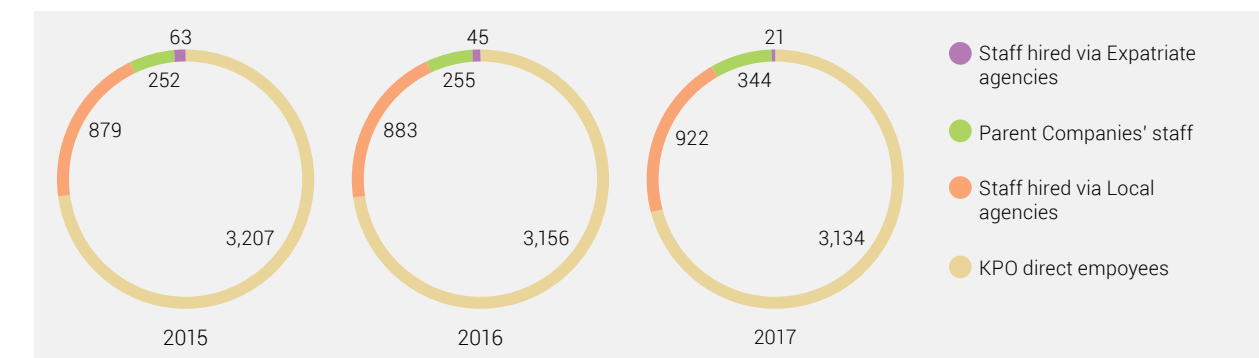


The total number of employees in KPO, both within the company and those working on temporary projects, as of end 2017 amounted to 4,421 employees with 4,056 of them being Kazakh nationals and 365 expatriates. <sup>GRI 102-7</sup>

GRAPH №15. KPO EMPLOYEES, 2015-2017

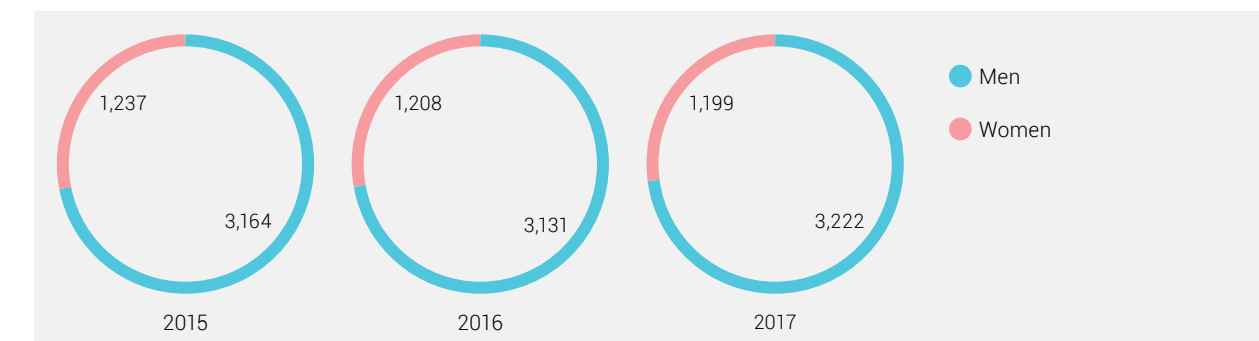


GRAPH №16. KPO EMPLOYEES BY TYPE OF EMPLOYMENT, 2015-2017 <sup>GRI 102-8</sup>



Graph №17 shows the employees by gender. In 2017, 3,222 men and 1,199 women worked at KPO. <sup>GRI 102-8</sup>

GRAPH №17. KPO EMPLOYEES BY GENDER, 2015-2017 <sup>GRI 102-8</sup>

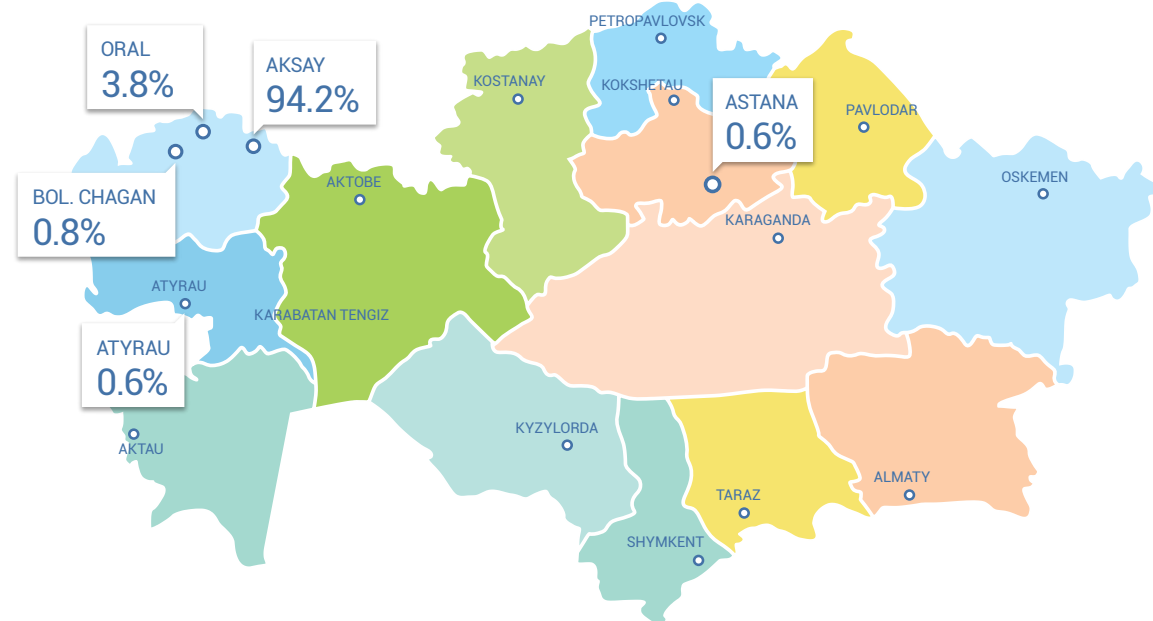


## RESPONSIBLE OPERATOR



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The map shows the percentage of the number of KPO workers in different cities of Kazakhstan. In comparison with 2016 in 2017, the number of personnel in the city of Uralsk increased due to the relocation of some workers from different departments that were in demand for the work in the Uralsk office. GRI 102-8



In 2017, the number of temporary employees totalled to 91. GRI 401-2, 102-8. 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.

The total number of employees leaving employment and newcomers, by age groups for the reporting period, is shown in Graph №18. This graph includes local staff, regardless of the type of contract, and excludes expatriate staff. GRI 401-1



Winners of the 2017 Best Efficiency and Optimization Programme

## RESPONSIBLE OPERATOR

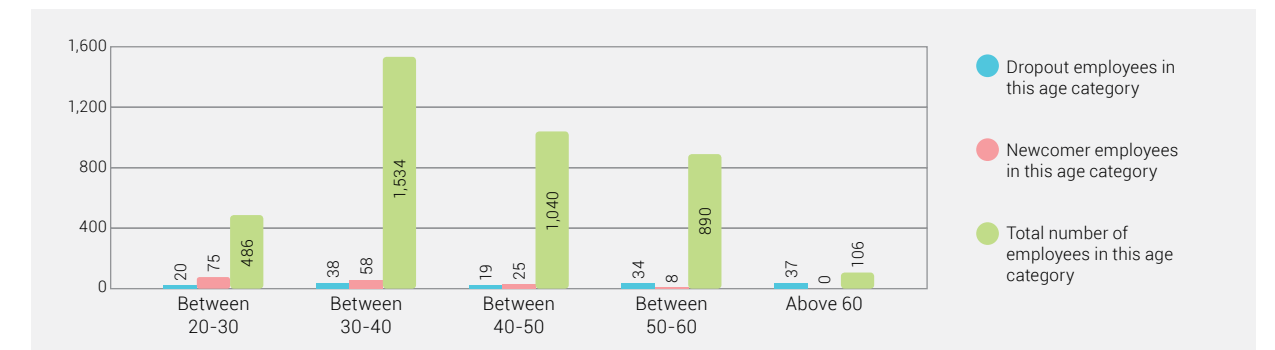


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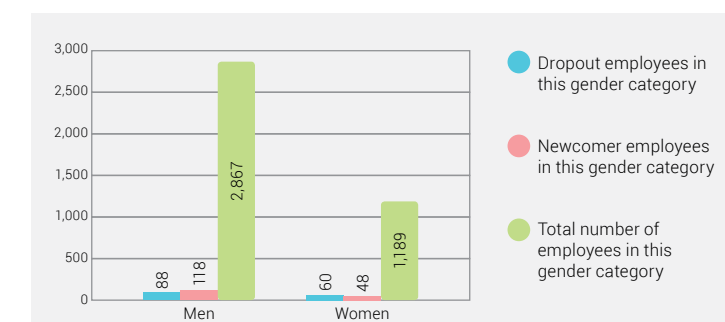
KPO employees at the Unity Day festivities in Aksai

GRAPH №18. PERSONNEL TURNOVER BY AGE, 2017 GRI 401-1

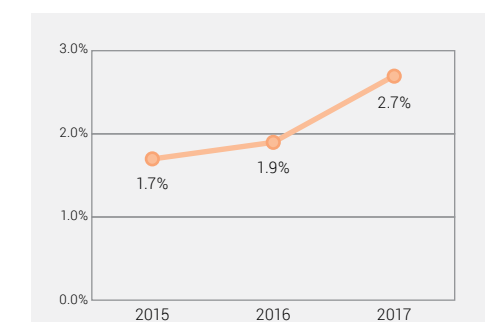


Graph №19 shows the total number of employees, who left the company and newly hired employees by gender for 2017. The newly hired employees at KPO made up 4.1% out of average number of employees in 2017. The turnover made 2.7% in 2017 versus 1.9% in 2016 (see Graph №20 on turnover). GRI 401-1

GRAPH №19. PERSONNEL TURNOVER BY GENDER, 2017 GRI 401-1



GRAPH №20. DYNAMICS OF LOCAL PERSONNEL TURNOVER, 2015-2017 GRI 401-1, 103-3



Note: According to the RoK legislation, the turnover indicator includes the number of employees voluntarily resigned within 2017.



People and skills

Development of national personnel

Training and development  
Employee relations  
Compensations and benefits  
Scholarship programmes  
KPO partnership with Kazakhstan universities

DEVELOPMENT OF NATIONAL PERSONNEL GRI 405-1, 103-3

KPO pays special attention to creating favourable working environment enabling continuous professional development of employees. The Company annually invests into development of staff's proficiency and capabilities.

As a result of implementation of the nationalisation programmes in the periods of 1998-2007 and 2008-2015, the share of local workforce in staff reached: 71% in the category 1+2, and 95% in the category 3+4. This calculation is presented in accordance with the employees' categorization applied in the validity periods of the programmes. Overall in the period from 1999 to 2017, over 180 expatriate specialists

were replaced by local staff, and 177 positions occupied by expatriate personnel were reduced.

The revised KPO Programme for Increasing Local Content in Staff for 2015-2020 aims at maximizing job opportunities for local communities and investing in local workforce. In 2017 as part of this programme, 10 positions held by expatriate personnel were nationalised, i.e. substituted by local workforce. Alongside with this, 22 positions previously held by expatriates were abolished. In result, local employees made up 91% of the total staff as of end 2017. Indicators by categories are shown in Table №21. GRI 103-2

TABLE №21. IMPLEMENTATION OF PLAN FOR LOCAL CONTENT INCREASE IN STAFF IN 2017, BY CATEGORIES OF EMPLOYEES. GRI 202-2, 103-3

CATEGORY	DESCRIPTION	PLAN FOR 31.12.2020	2017
1+2	Executive management and their deputies, Department / Unit management	No less than 74%	76%
3+4	Professional staff / Qualified workers	No less than 92%	95%

Increasing of local content in staff is an important element in creation of the KPO economic heritage. The Company uses many development tools for personnel to promote them to management levels across all business units. The focus is made on development of the talented and high-potential local employees. It is expected that the programme will allow achieving the following goals:

- Improve effectiveness of the training and development process of local employees;

- Increase the number of local KPO employees, contractors and subcontractors.

In accordance with the goals set in the Programme for Increasing Local Content in Staff, in 2017 KPO has been tracking their performance among 41 contractors and subcontractors registered in WKO. The monitoring was held on a quarterly, biannual and annual basis. Performance by categories is shown in Table №22.

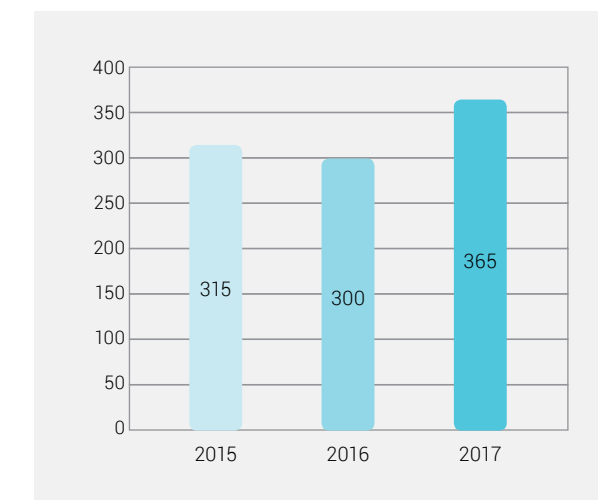
TABLE №22. AGGREGATED SHARE OF LOCAL CONTENT IN STAFF FOR CONTRACTORS AND SUBCONTRACTORS, REGISTERED IN WKO, IN 2017

CATEGORY	DESCRIPTION	2017
1+2	Executive management and their deputies, Department / Unit management	73%
3+4	Professional staff / qualified workers	94%



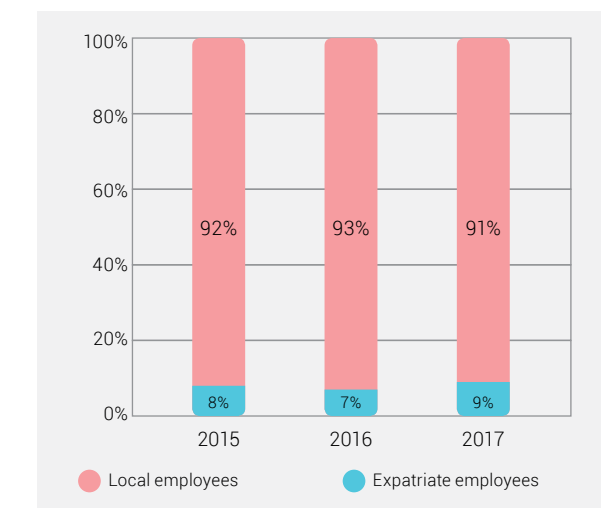
Graph №21 shows the total number of expatriates in KPO including personnel involved in the temporary projects as per the Programme for increasing Local Content in staff for 2015-2020.

GRAPH №21. NUMBER OF EXPATRIATE STAFF, 2015-2017



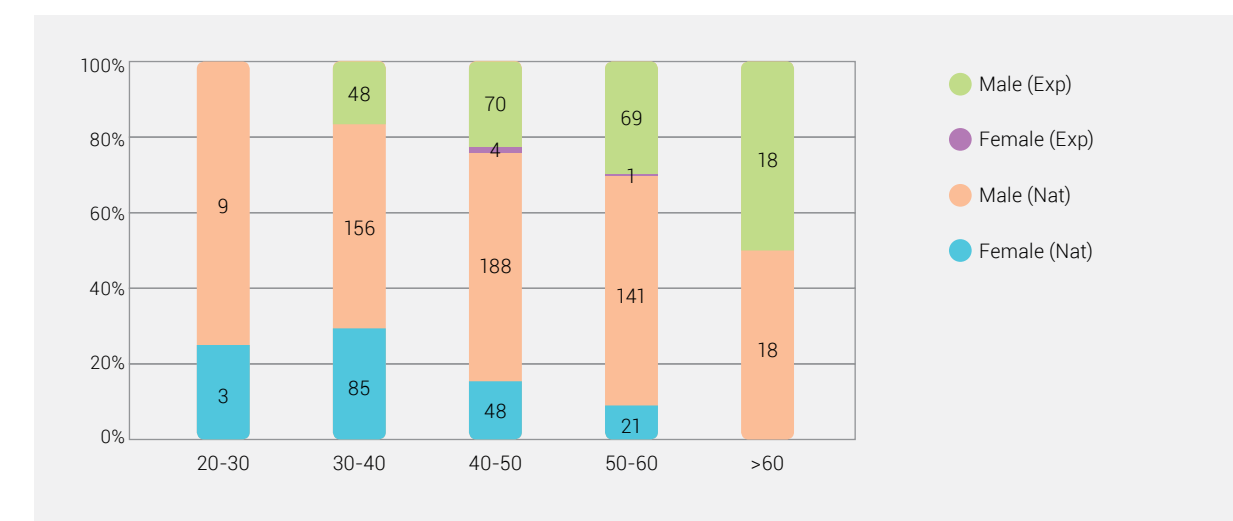
Graph №22 shows data on the number of local and expatriate staff in KPO.

GRAPH №22. SHARE OF LOCAL AND EXPATRIATE STAFF, 2015-2017



Graph №23 shows the total number of senior and middle management in KPO organisational structure (including the main organization and temporary projects) by expatriates and locals, divided by age groups and by gender.

GRAPH №23. NUMBER OF LOCAL AND EXPATRIATE MANAGERS BY AGE AND GENDER CATEGORY, 2017 GRI 405-1







#### People and skills

Development of national personnel  
**Training and development**  
 Employee relations  
 Compensations and benefits  
 Scholarship programmes  
 KPO partnership with Kazakhstan universities



Participants of the KPO Graduates Development Programme at the 10th Anniversary of the Programme

### TRAINING AND DEVELOPMENT GRI 103-3

Staff training increases motivation and efficiency of work, ensures that qualification of employees meet operational requirements, and promotes further career growth of staff.

Raising of skills and professional level is an integral condition of effective operations, and is one of the KPO priorities in personnel policy. In this view, KPO works to support its employees in continuous professional development by addressing their training and development needs.

In meeting the FPSA conditions, training at KPO is conducted based on operational needs and technical safety requirements. In 2017, KPO also continued costs optimisation with regard to training programmes and mandatory courses. GRI 103-2

KPO training and development programmes provide opportunities for employees to improve their knowledge and competency taking into account the strategic plans of Parent Companies and professional skills lacked by personnel. These include training, retraining and advanced training.

In 2017, KPO implemented the following training and development programmes:

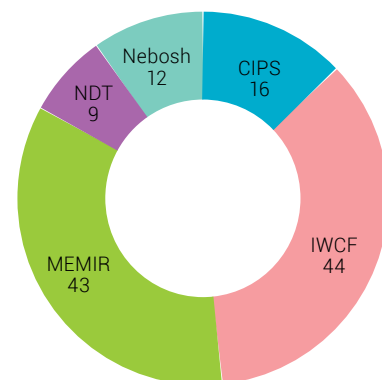
- International qualifications presented in graph №24 including:
  - **CIPS** Diploma - certified programme of Chartered Institute of Procurement and Supply for contracts and procurement specialists.
  - **IWCF** – well control / well pressure control during gas, oil and water shows;
  - **MEMIR** – Emergency Response training (OPITO standard);
  - **NDT** – Non-destructive testing certification;

- **NEBOSH** Technical Certificate provided by the UK National Examination Board in Occupational Safety and Health, delivering vocational qualifications in health, safety & environmental practice and management.

- Professional training;
- HSE mandatory training.

On the Internship programme, in 2017 the Company worked on the analysis of needs, candidates' selection and identification of potential locations and projects for candidates to take part in.

GRAPH №24. TOTAL NUMBER OF PERSONNEL TRAINED AT THE INTERNATIONAL QUALIFICATION CERTIFIED PROGRAMMES IN 2017



### ENHANCED DEVELOPMENT PROGRAMME FOR 2017-2020

The aim of the Enhanced Development Programme is to identify high-potential local employees and develop their skills to reach maximum potential in the period from 2017 to 2020. The programme creates conditions for employees to obtain knowledge and skills necessary for sustainable professional development and career growth, thus allowing the Company reach its set goals.

At the end of 2016, KPO Training and Development Department began the process of selecting potential candidates for participation in the third intake for the Enhanced Development Programme for the period of 2017-2020. 217 high-potential employees of the Company took part in the programme. All the employees passed through the selection criteria following the programme conditions. The selection was carried out by departmental managers.

This process required tremendous effort, from arranging the Assessment Centre to preparing individual profiles for each employee. The selected candidates' assessment was carried out from February until May 2017. The selection consisted of a series of tests, including psychometric tests, identification of abilities, motivation and potential to manage people and processes. Assessment Centre identified the candidates' strengths and directions for further development.

The duration of the Programme for one intake of employees is three years. This Programme is an integral part of the process of creating a personnel reserve, which in turn ensures the continuity of human resources planning and implementation of the programme to increase local content in personnel for 2015-2020.

In implementing the Enhanced Development Programme, the focus is on creating a pool of talent, selecting high-potential employees, identifying their strengths and weaknesses, developing and implementing individual development programmes, eventually assigning them to the planned positions in order to meet the Company business needs.

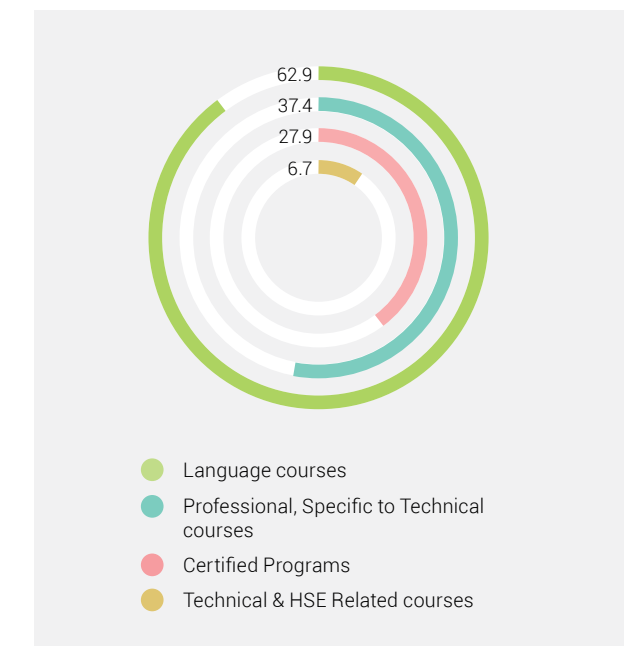
#### TRAINING STATISTICS GRI 404-1

In 2017, 380,922.8 hours of training (406,402 hours in 2016) were held, 260, 207.8 hours of which were provided to KPO employees (220,706 hours in 2016). The remaining 120,715 hours (185,696 hours in 2016) - to employees of contracting organizations for HSE mandatory courses.

On the average in 2017 KPO spent USD 106 (USD 115 in 2016) for training per employee.

The average number of training hours per employee is shown in the graph №25.

GRAPH №25. AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE BY TYPE, 2017



Handing over a certificate for completion of the KPO Graduates Development Programme



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Training conducted for the Company employees in 2017 by categories is shown in Table №23. In total in 2017, 42,944 courses were conducted, 25,124 of them - for employees of contracting organizations.

TABLE №23. TRAINING OF EMPLOYEES BY CATEGORIES, 2015-2017

CATEGORY	2015	2016	2017
1. Managers and supervisors	219 persons (39.64 hours per 1 employee)	293 persons (52.91 hours per 1 employee)	125 persons (29.27 hours per 1 employee)
2. Qualified specialists / supervisors	1,682 persons (49.13 hours per 1 employee)	1,019 persons (41.85 hours per 1 employee)	1,749 persons (59.64 hours per 1 employee)
3. Technical personnel	1,045 persons (92.1 hours per 1 employee)	1,233 persons (105.94 hours per 1 employee)	1,356 persons (113.43 hours per 1 employee)
4. Office and administrative personnel	421 persons (16.5 hours per 1 employee)	265 persons (38.99 hours per 1 employee)	138 persons (18.96 hours per 1 employee)

DUAL EDUCATION IN KPO

Dual education programme has been practiced in KPO since 2005. In 2016, 50 graduates from higher and secondary vocational educational institutions of the West-Kazakhstan Oblast were selected to participate in the programme 'Production Operations and Maintenance Technician'. The selection was made with a series of tests and technical interviews on the disciplines of electrical and instrument technician, production operator and mechanical technician. Upon completion of the in-class training in July 2017 all trainees have passed on-the-job training at KPO production facilities to gain hands-on experience and new skills. As of end 2017, 31 trainees were employed at KPO.

- Development of effective planning tool for training and development of KPO employees with involvement of line managers;
- Improvement of safety culture of all personnel involved in operations to reach the required level of competency at workplace;
- Support in more effective planning of funds for personnel's training and development purposes.

Based on the results of the OPITO's annual monitoring audit held in June 2017, KPO has received a confirmation for extending the validity of the awarded OPITO accreditation for the Competency Management System (CMS) until June 2019. The accreditation includes regular annual reviews. For the purposes of cost effectiveness and continuous improvement of the CMS, KPO conducts internal audits with the help of own employees who had passed the OPITO training and became certified auditors. GRI 103-3

In 2017, KPO has continued the application of the Competency management system in both non-technical and technical areas. The development of CMS Expansion programme is planned for 2018-2022, which includes, along with current scope, the Competency assurance system for Production and Maintenance engineers/supervisors, and the Competency assurance system for Production & Maintenance core contractors with high and medium HSE risks.

COMPETENCY MANAGEMENT SYSTEM GRI 103-2, 103-3

Competency management system is one of the most relevant methods to determine the competency levels of the personnel within the Company. Effective competency management ensures that workflow is operated safely and in an efficient way, maximising productivity and ensuring workforce capability. Encompassing the performance and professional development of all staff members with a structured, measured system gives the organisation more control over risk and cost at every step of the competency management lifestyle (selection, assessment, training and development, staff deployment and carrying out the job role).

The system has defined the requirements for personnel's training and development allowing setting the following objectives:



For non-technical departments, the CMS envisages the assessment of personnel once every three years based on the dedicated specialist competency assessment models. In 2017, the assessment and professional developments needs identification was implemented in Legal department resulting in development of a customized competency model.

For technical departments, the assessment is performed to ensure that personnel on site possess the required level of competency and to minimize occurrence of incidents associated with lack of personnel's competency.

We conduct periodic competency assessments and training, if needed, to maintain the achieved level of competency of technical staff and identify new requirements to the competency development. For

tracking changes against the assessments conducted and defining frequency KPO uses an electronic database, which provides easy generation of the reporting data in various presentations.

In 2017, KPO has achieved 93% of competence standards' compliance required for technical personnel. As a result, 852 employees with technical qualification have completed initial assessment and received the CMS certificates.

In 2017, the CMS teams of Training & Development department jointly with CMS of Production & Maintenance department started developing a plan for integrating two competency systems (technical and non-technical) into one with further OPITO accreditation. Pilot testing and launch of the new system were scheduled for mid-2018.

EMPLOYEE RELATIONS

KPO respects the rights of KPO employees to organize a trade union and participate in negotiations of the collective agreement.

Two Trade Union organizations represent the interests of Company employees: Public Association 'Local Trade Union of KPO employees' and Public Association 'Karachaganak local professional union of KPO employees and contractors'. As part of their work, Trade Unions develop their draft Collective Agreements addressing various aspects of social and labour relations. The provisions of the Collective Agreement apply to all KPO employees regardless of their membership in the Trade Unions. The latest KPO Collective agreement was updated and re-signed in 2016. GRI 102-41, 103-3, 103-2

KPO has a few feedback tool mechanisms: filing applications to HR Controllershship either directly or through Trade Union, and using anonymous Hotline. In 2017, HR received 7 grievances and 10 applications. The grievances received primarily addressed such issues as employment assistance, conflict situations within the department, exceeding one's authority in job duties, misconduct with contractors, misconduct to a contractor employee. All the mentioned grievances and appeals have been considered and resolved by KPO Employee Relations group. GRI 102-16, 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 type, system or amount of payment leading to deterioration of employees' conditions. GRI 402-1

In 2017, 45 KPO employees applied for the voluntary dissolution under the KPO Pension plan (18 employees in 2016) as part of the Voluntary Dissolution of Employment Relationship Programme as per the Collective Agreement. The increase in the number of employees who had used the voluntary dissolution programme was due to the enactment of the new Labour Code of the Republic of Kazakhstan. The provisions of sub-it. 24 it. 1 of Art. 52 of Labour Code allow the employer to terminate the employment contract upon employee's reaching a retirement age. Thus, the provisions of the new Labour Code entailed a voluntary dissolution of employment relationships under the current Programme by a greater mass of pre-retirement employees in order to receive appropriate payments.

Collective bargaining plays an important role in the Company. In this regard, KPO regularly provides clarification sessions on legislation requirements, internal procedures and policies to contractor organisations to prevent any potential risk of forced labour and/or violation of employees' rights to hold meetings or have a collective bargaining. These are not excluded in case of insufficient attention to legislative requirements in some contracting and subcontracting organisations. GRI 407-1



Yerdos Bersugurov, Senior Well Services Engineer, received Special Appreciation from KPO top management



**People and skills**

Development of national personnel  
Training and development  
Employee relations

**Compensations and benefits****Scholarship programmes**

KPO partnership with Kazakhstan universities



Participants of the HSE Award Ceremony

**COMPENSATIONS AND BENEFITS**

Over 20 years KPO has been involved into the economy of the region and always will be interested in retaining the qualified local staff.

KPO provides social benefits package to all employees who signed an employment agreement with KPO. The social package is an essential part of employment, and consists of financial and non-financial benefits. <sup>GRI 401-2</sup>

**Annual benefits for direct employees**

- Year-end bonus;
- Oil & Gas Worker's Day bonus;
- Payment for health recovery;
- Payment for sanatorium treatment.

**Social benefits**

- Educational Scholarship Program;
- Allowance for Afghan War veterans;
- Dismissal pay for early retirement;
- Social aid to KPO's pensioners;
- Monthly loyalty allowance for KPO seniority;
- Payment for a birth of a child.

**Regional benefits**

- Housing and travel allowances for personnel with permanent registration outside of Aksai;
- Allowance for improvement of living conditions for personnel living in Aksai;
- Regional allowance for employees in Astana.

**Holiday and anniversary payments**

- Jubilee Bonus for female employees reached 50 and 55 years and male employees on their 50- and 60-year anniversary;

- International Women's Day bonus;
- Bonus on the Final Production Sharing Agreement anniversary every 5 years.

**Financial aid**

- Financial aid to a deceased employee's family;
- Financial aid in case of an employee's family member death;
- Financial aid in case of a KPO pensioner's death.

**Non-financial benefits**

- Medical insurance;
- Free transport to/from work;
- Free meals for employees working in the Field or meal allowance for personnel with particular working conditions on site;
- New Year gifts for employee's children;
- Additional paid vacation;
- Accident insurance.

One of the non-financial benefits provided to all local employees hired in KPO directly is Voluntary Group Accident Insurance. The insurance covers events that led to the KPO worker's injury, a sudden accidental physical injury that could lead to disability, hospitalization or death. Insurance operates around the world, 24 hours, 365 days per year, regardless of working or non-working days.

For employees hired in KPO via recruitment agencies the collective agreements of these agencies are applied. Independently planned benefits to cover allowances for employees hired via agencies are agreed between KPO and the agencies as part of the approved budget.



Pursuant to the Collective Agreement, the minimum salary of newcomers in the Company is established as KZT 155,000. Based on the 2017 annual benchmarking analysis against the statistics data, an average salary in KPO is 3.3 times higher than an average salary in the Western Kazakhstan Oblast. <sup>GRI 202-1</sup>

Every year the Company makes a review of employees' remuneration, including the cost-of-living salary increase at the beginning of the year, annual bonus payment to employees, who received positive performance evaluation, as well as individual pay rises and additional lumpsum payments. In 2017, the overall salary increase made up 8.5%, which reflects the inflation rate for the previous year of 2016.

In addition to the above, in January 2017 the Company paid the bonus to employees for the excellent HSE performance. The bonus on the Oil & Gas Workers' Day was paid in August 2017 earlier than scheduled. The bonus on the 20th anniversary of the signing of the Final Production Sharing Agreement was paid in October 2017. An extraordinary one-time bonus for local employees was paid in December 2017 in recognition of achievements in the key areas of the Company's activities.

Based on the benchmarking analysis of the labour market that confirmed KPO salaries matching the market remuneration level in the oil & gas sector in Kazakhstan, no additional salary adjustment was made in 2017.

KPO respects the right of its employees' to retain their positions. Following the RoK Labour Code, an employee has the right for an unpaid leave to attend to a child up to the age of three years. In the 2017 reporting year, 24% of employees, who took parental leave, returned to work in the reporting period, with a 100% retention rate. The remaining 76% employees took a child-care leave for a over 1 year.

Graph №26 shows the number of employees, who took a parental leave and a leave to attend to a child up to the three years age, and of those, who returned to work after parental leave ended, by gender, in 2017. <sup>GRI 401-3</sup>

**PERSONNEL DEVELOPMENT REVIEW** <sup>GRI 404-3, 103-3</sup>

With the view of continuous improvement of labour performance, the Company conducts a Personnel Development Review (PDR) on an annual basis. This process covers all employees who have employment agreement with KPO for no less than half a year. For

**SCHOLARSHIP PROGRAMMES FOR NATIONAL EMPLOYEES AND THEIR CHILDREN** <sup>GRI 404-2</sup>

KPO takes continuous efforts to upgrade skills of employees and to provide opportunities of professional development, thus contributing to their sustainable growth. Introduced in 2002, KPO Scholarship Programme for national employees and their children is one of the important incentives

for professional development and further education of employees.

In 2017, in the framework of the above programmes KZT 33 mln (equivalent to USD 104 k) were allocated to sponsor scholarships for 20 KPO employees and for 40 employees' children.

Additional qualifications obtained through the KPO scholarships helped 14 employees in changing their positions, thus continue career development and work for the benefit of the company.

GRAPH №26. PARENTAL LEAVES AT KPO FOR 2017



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** <sup>GRI 103-3</sup>

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

In 2017, with the aim to improve the organizational model, the KPO Project Execution Directorate was reorganised using a matrix organizational structure in creation of project management teams.

This approach assumes subordination of staff directly to project managers and in parallel to managers responsible for standards and control within certain functions, such as engineering, labour protection, occupational health and safety, environmental protection, contract administration and quality control.

Application of the matrix structure provides the necessary functional support to the departments managing the key Company projects and ensures better workflows.

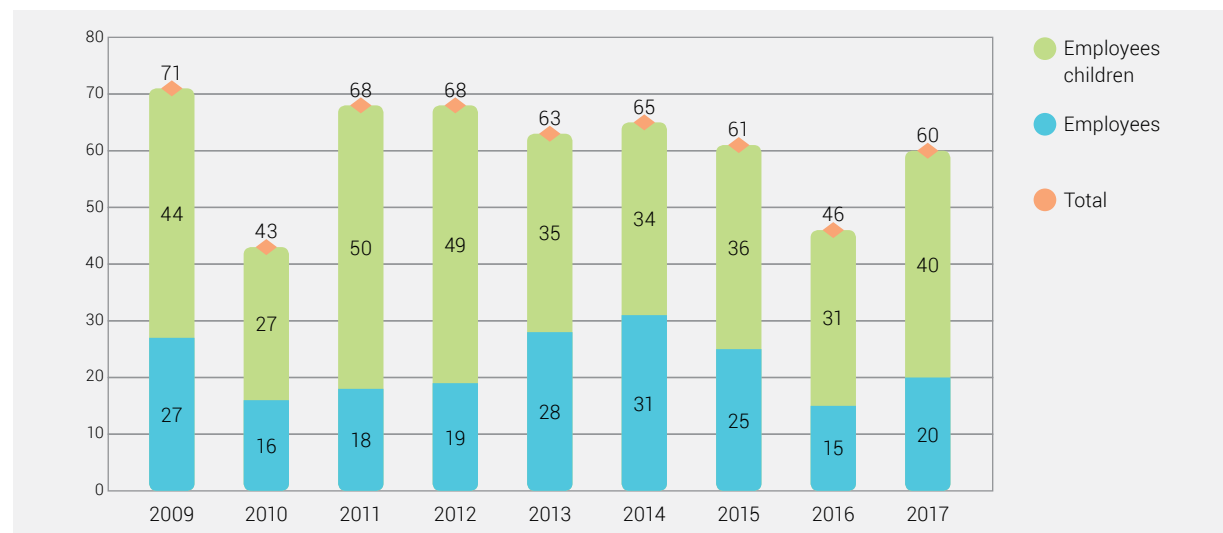




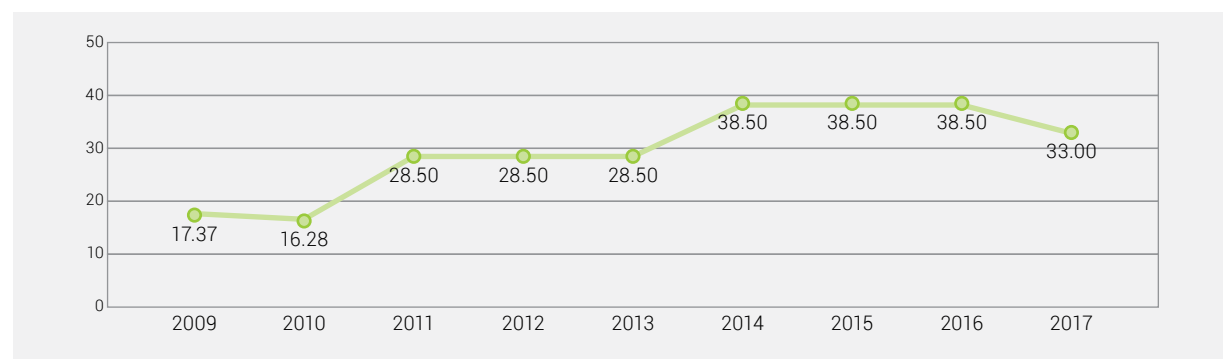
People and skills

Development of national personnel  
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GRAPH №27. DYNAMICS OF PARTICIPATION IN THE KPO SCHOLARSHIP PROGRAMME, 2009-2017



GRAPH №28. FUNDS ALLOCATED BY KPO FOR THE SCHOLARSHIP PROGRAMME, 2009-2017 (IN MLN KZT)



SUCCESS STORY OF THE SCHOLARSHIP PROGRAMME

One of the success stories of the Scholarship Programme implementation is Aigerim Sarsenbay. Aigerim used to work as an HSE Document Management System Coordinator in Safety and Asset Integrity Controllershship. In 2015, she applied for a scholarship for advanced vocational training in safety and health protection in order to professionally grow in this area. Her scholarship for vocational training on the specialty 'Health and environmental protection' allowed Aigerim to increase knowledge and skills and to move up on career path. From 2015 to 2017, Aigerim has been working as Management of Change Superintendent in Asset Integrity department. Since 2018, she has moved to a position of HSE Performance Section Head in Project Execution Directorate, having applied on practice the acquired knowledge and experience.



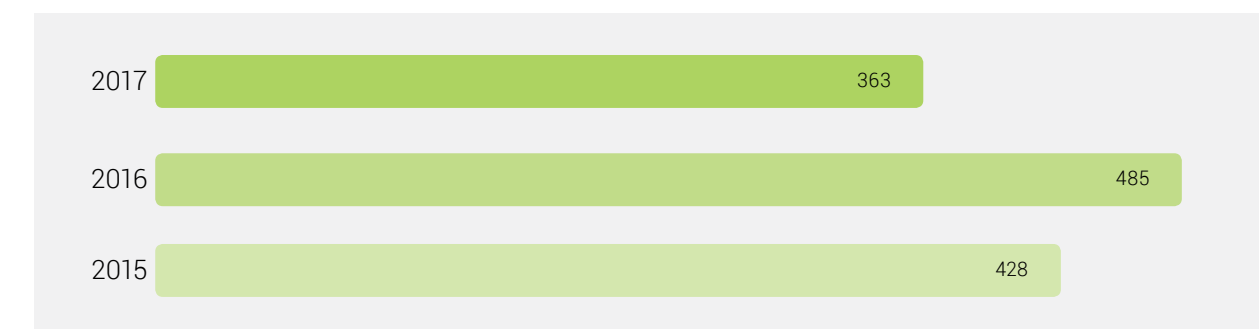
KPO PARTNERSHIP WITH KAZAKHSTAN UNIVERSITIES

Cooperation between universities and employers is seen as a long-term mutually beneficial activity facilitating preparation and adaptation of young specialists in the scientific, technological and operating processes.

In KPO, interaction with universities is carried out through the Student Placement Programme following the relevant agreements.

In 2017, 363 students from 31 educational institutions on 23 specialties had practical and pre-graduation internship in various departments of KPO. In the period from 2013 to 2017, the Company has employed 114 people out of those, who had passed the student placement.

GRAPH №29. NUMBER OF STUDENTS COMPLETED INTERNSHIP AT KPO, 2015-2017



Besides, KPO is involved in the National Youth Placement Programme, thereby supporting those graduates, who are residents of the Burlin district. Since the start of this programme in 2009, 155 young professionals completed such internship in KPO. In 2017, 10 graduates passed the youth internship; some of them will continue working in the Company. In the period of 2013-2017, 23 graduates, who completed the Youth Placement Programme were employed by KPO.

The following activities were conducted in the framework of cooperation with educational institutions in 2017:

- On 9-13 January 2017, professional internship of young teachers from the West Kazakhstan Agrarian-Technical University after Zhanir Khan (WKATU) on 'Power engineering' and 'Oil & Gas business' was held at the KPO Maintenance Department in KPC. The internship was conducted as part of the Cooperation Agreement signed in 2016 between the WKATU and KPO in order to render joint support to the Society of Petroleum Engineers (SPE).
- On 5<sup>th</sup> April 2017, Human Resources Controllershship employees visited a Job Fair in Almaty organized by Kazakhstan-British University for the final-year students assisting in their job placement. On April 6, 2017, Internship and Career Division of the Consolidated Analytical Department of the Kazakh National Technical University after K.I. Satpayev held a presentation about KPO for the third-year students. At the meeting, HR specialists of KPO told the students about the Company's activities, student placement procedure, and work conditions in the Karachaganak field. Students actively engaged in questions and answers session.

- On 26<sup>th</sup> April 2017, KPO took part in the Career Day at the WKATU. During the event KPO specialists have demonstrated a film 'Karachaganak: A Sustainable Presence' and made a presentation about the Student Placement Programme. At the close, the Rector of the university Mr. N.Kh. Sergaliyev awarded diplomas to a number of companies, including KPO, for cooperation and substantial contribution in job placement.
- On 30<sup>th</sup> May 2017, a work meeting of the Advisory Council on training personnel for the WKO machine-building industry was held at the WKATU. The topic of discussion was the development of Oil & Gas engineering sub-cluster. The meeting was attended by representatives of the WKO Chamber of Entrepreneurs, the WKO Department of Entrepreneurship and Industrial Innovative Development, Oral Social-Entrepreneurial Corporation, Algorithm Technological Park, managers and experts of WKO machine-building and O&G enterprises, as well as teachers of the WKATU machine-building and polytechnic faculties. KPO was represented by Tanat Sultanov, Production Support Superintendent, and Aslan Davletov, Piping Engineer. At the meeting, the participants shared their experience in improving the quality of training for future engineers and actively discussed such issues, as criteria for the student-training programme, issues in organization of practical sessions for students, and research works by university scientists at the enterprises. The need of exchanging experience at similar events was unanimously shared. That would allow more effectively address issues of both graduates' employment and engagement of universities and KPO in scientific and research areas.



Environmental management systems  
Environmental protective measures plan  
Air emissions  
Environmental monitoring  
Energy management

The production and processing of hydrocarbons impose high accountability on KPO for protection of the environment. Development of such a technically complex oil gas condensate field as the Karachaganak in harmony with nature is a challenge. We apply advanced techniques and world-class technologies to succeed in this area. <sup>GRI 103-1</sup>

KPO carries out its operations by ensuring the principles of sustainable development and complying with the high environmental protection standards. The key commitments of the Company's HSE Policy are:

- to minimize adverse impacts on the environment;
- to reduce the environmental pollution;
- to ensure the environmental safety. <sup>GRI 103-2</sup>

The Company focuses its efforts on reduction of greenhouse gas emissions and conservation of natural resources by applying the best available technologies, where it is possible. Operational targets for ensuring the environmental protection principles are listed in Table №24.

TABLE №24. OUR ENVIRONMENTAL TARGETS <sup>GRI 103-2</sup>

OUR 2017 TARGETS	TARGET ACHIEVE- MENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
MANAGEMENT SYSTEMS			
Obtain the re-certification of the KPO Environmental Management Systems in compliance with the new environmental management standard - ISO 14001:2015	Yes	A certification audit for compliance to the international standard ISO 14001:2015 was conducted. Based on the results, the Bureau Veritas certification body confirmed the effectiveness of the KPO Environmental Management System and its compliance with the ISO standard 14001:2015.	Organize and conduct an external surveillance audit against the ISO 14001:2015 standard
AIR EMISSIONS & GHG			
Achieve reduction of greenhouse gas emissions by 203 thous. tonnes of CO <sub>2</sub> -equivalent	Yes	The implementation of scheduled measures has made possible a reduction of greenhouse gas emissions by 447 thous. tonnes of CO <sub>2</sub> -equivalent.	Achieve reduction of GHG emissions by 250 thous. tonnes of CO <sub>2</sub> -equivalent
Ensure that specific GHG Emissions do not exceed 69 tonnes CO <sub>2</sub> per one thous. tonnes of produced hydrocarbons	Yes	The implementation of scheduled measures to reduce GHG emissions allowed achieving the specific CO <sub>2</sub> emissions of 63 tonnes per one thousand tonnes of produced hydrocarbons.	Ensure that specific GHG Emissions do not exceed 68 tonnes of CO <sub>2</sub> per one thousand tonnes of produced hydrocarbons
Ensure that the throughput losses do not exceed 3.71%	Yes	Efficient operations arrangements along with the EPMP implementation allowed reducing the throughput losses to 3.52%.	Ensure that the throughput losses do not exceed 3.7%
	New target		Develop feasibility study for implementation of the continuous emissions monitoring system at stationary sources



TABLE № 24. OUR ENVIRONMENTAL TARGETS (CONTINUED) <sup>GRI 103-2</sup>

OUR 2017 TARGETS	TARGET ACHIEVE- MENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
ENERGY MANAGEMENT			
<ul style="list-style-type: none"><li>■ Carry out energy saving and energy efficiency activities scheduled for 2017 as part of the 2016-2020 Plan.</li><li>■ Obtain certification of the KPO Environmental Management System to the ISO 50001 standard.</li><li>■ Carry out research works and study possibilities to introduce renewable energy sources at the remote Company locations.</li></ul>	Yes	<ul style="list-style-type: none"><li>■ Feasibility study of installation of frequency-controlled drives at the production facilities was completed. The feasibility study results showed that the frequency-controlled drives installation was not economically sound. Old-style lamps at the production facilities were partially replaced with LED.</li><li>■ In July 2017, KPO has successfully passed Certification Audit for compliance with the ISO 50001:2011 standard requirements on 'Energy Management System'. The studies for use of renewable energy sources were completed with results presented to management.</li></ul>	<ul style="list-style-type: none"><li>■ Organize and conduct a surveillance audit in accordance with ISO 50001:2011 to confirm the certification of the KPO Environmental Management System.</li><li>■ Develop an energy efficiency improvement and GHG reduction strategy.</li><li>■ Review and improve the energy accounting and reporting process at KPC.</li></ul>
EFFLUENTS AND WASTE			
Develop a feasibility study for the upgrade of the Unit-3 BIO-50 plant and the Pilot camp treatment plant for the purpose of making a decision on the optimization of wastewater treatment and further use of BIO-50	Yes	The project 'Feasibility study for the upgrade of the Unit-3 BIO-50 plant and the KCC (Pilot Camp) treatment plant for the purpose of improving the domestic wastewater treatment quality' was developed and approved. Starting from 01.01.2018, the Unit-3 domestic wastewater is being sent to the Pilot Camp treatment plant as directed by the project solution. The BIO-50 plant has been decommissioned from 2018.	Develop a plan for the further use of the setting pond, taking into account the mothballing of BIO-50 and the risk reduction concept for Unit-3
Develop an operating procedure for reuse of the wastewater at the KOGCF in the 2018-2022 period	Yes	The operating procedure for reuse of the wastewater at the KOGCF in the 2018-2022 periods was developed.	Reuse the treated wastewater for irrigating forest plantation, dust suppression, making drilling muds, hydraulic testing, in the amount not less than 10% of the total water consumption



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TABLE № 24. OUR ENVIRONMENTAL TARGETS (CONTINUED) GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVE- MENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
<ul style="list-style-type: none"><li>Conduct a scientific and technical research on the possibility of reducing the concentration of H<sub>2</sub>S in the Unit-3 wastewater injected into formation at Injection Site 1;</li><li>Participate at the Expert Council of the WKO Environment Department on the reconsider the 2018 Maximum Permissible Discharges (MPD) Limits Project for pollutants discharged with wastewater into the subsurface.</li></ul>	Yes	Scientific and technical research was carried out to explore the possibility of reducing the H <sub>2</sub> S concentration in the Unit-3 wastewater, injected into Underground disposal site №1. The study report was submitted to the Environmental State Authorities. There were two expert councils held with the WKO Environment Department for the review of 2018 Maximum Permissible Discharge Limits Project for pollutants discharged with wastewater into the subsurface. As per the decision of the second expert council, a positive conclusion of the State Environmental Expert Review (SEER) on the Project was received.	<ul style="list-style-type: none"><li>Develop a feasibility study for the installation of the stripping column at Unit-3 to ensure environmental safety and reduction of the H<sub>2</sub>S concentration in the injected wastewater;</li><li>Conduct research and selection of H<sub>2</sub>S scavenger for the use at Unit-3 to reduce H<sub>2</sub>S concentration in the wastewater injected into the subsurface of Underground disposal site №1.</li></ul>
	New target		Carry out additional exploration operations and studies at the Underground Disposal site 1 for justification to increase volumes of injected wastewater and confirmation of isolation security (according to the schedule of the Roadmap on updating the Project of KOGCF Industrial Wastewater Injection into Deep-laying Water Bearing Formations and EIA to it)
Cover at least 6 cells the Eco-Centre Solid Industrial Waste Burial Site	Yes	6 cells filled with waste were closed at the Eco Centre's Solid Waste Burial Site	
Develop a 2018-2020 KOGCF Waste Management Program	Yes	The 2018-2020 KOGCF Waste Management Program has been developed and approved. The Program aims at reducing the amount of generated and accumulated waste.	Ensure implementation of the activities planned for 2018, according to the 2018-2020 Waste Management Program
SOIL			
For the purpose of planting, as part of the Work Project for Phase I Tree-planting along the Established SPZ and setting out of its boundaries, prepare 28 ha of soil along the Aksai-Priuralnyi motor road, including the early spring ploughing, disk plowing, cultivation, harrowing, autumn reploughing of fallow land	Yes	The work on preparing 28 ha of soil for further planting along the Aksai-Priuralnyi motor road was completed.	Undertake mechanical planting activities in the area of 28 ha along the Aksai-Priuralnyi motor road with post-planting tending
Produce the Plan of further development of the Sanitary Protection Zone (SPZ)	Yes	The further SPZ Development Plan has been drawn up and submitted to the WKO Department of Public Health Protection (SES) for review. In reply, the WKO DPHP (SES) sent a letter agreeing to the works specified by the Plan.	Continue work on further SPZ Development Plan once tender is completed and the contractor is determined.



TABLE № 24. OUR ENVIRONMENTAL TARGETS (CONTINUED) GRI 103-2

OUR 2017 TARGETS	TARGET ACHIEVE- MENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Conduct a research into the pathology of green plants within the KOGCF as required by the RK Forest Code	Yes	The forest pathology study of green plantations at the KOGCF was carried out by the specialists of the Kazakh Scientific Research Institute of Forestry. KPO was provided with recommendations for the implementation of measures aimed at improving the sanitary state of forests and the tending activities.	Carry out sanitary cutting of forest plantations to improve the sanitary stat of forest and to ensure its fire protection
Continue the research studies into the development of methods for the reuse of clay drill cuttings of the oil and water-based drilling mud following the thermo-mechanical treatment	Ongoing	The work had a late start in October 2017 due to the delay in signing the single source justification (WKSU).	Continue the research studies into the development of methods for the reuse of clay drill cuttings of the oil and water-based drilling mud
BIODIVERSITY			
Develop a Biodiversity Conservation Plan 2018-2019 as per the 'Guidance to the biodiversity conservation plan for the oil and gas sector' issued by IPIECA/OGP	Yes	The 2018-2020 Biodiversity Conservation Plan was developed as per the Guidance to the biodiversity conservation plan for the oil and gas sector issued by IPIECA/OGP.	Carry out the monitoring of fauna, including additional studies of ichthyofauna in the KOGCF water basins

ENVIRONMENTAL MANAGEMENT SYSTEMS GRI 103-2, GRI 103-3

Management of environmental protection system in KPO has been carried out as part of the integrated HSE management system that has been certified to comply with the ISO 14001 international standard since 2008. After introduction of the Environmental Management System three recurring certification audits were successfully conducted at KPO in 2008, 2011 and 2014, fully confirming the standard's compliance.

Moreover, the year 2017 was marked by KPO certification against the ISO 50001-2011 standard, which was another international recognition of the company's commitment to energy saving and energy efficiency.

In September 2015, the International Organization for Standardization adopted the third edition of the ISO 14001. The new standard has a number of substantial variations from the previous edition and requires certified organizations to analyze the degree of compliance with the new requirements. To ensure effective transition to the new standard, prior to a certification audit, KPO Environmental Management Systems (EMS) Controllershship has undertaken a gap analysis and assessment of the existing system in the light of new requirements.

In light of this, the Company management decided to adopt the new edition of the ISO 14001:2015 as part of a system's continuous improvement, and to apply new recommendations of the standard in day-to-day operations.

Pursuing this goal, qualitative corrections were made to the existing KPO management system and operations. In 2016-2017 as part of the mentioned activity about 30 external and internal audits have been conducted, the system documentation have been analyzed including the revision of HSE Policy and other Company strategic documents.

During the 2016-2017 over 80 KPO employees have been engaged in introduction of the new ISO 14001:2015 standard edition and attended training workshops. Full revision of 17 Environmental Aspects' Registers related to KPO operational departments and divisions was undertaken. KPO updated its Consolidated Significant Environmental Aspects' Register within which all aspects of KPO activities that may significantly affect the environment were analyzed and summarized.

In July 2017, a certification audit against the new edition of ISO 14001:2015 was held, having resulted in validation of the environmental management system's effectiveness by the auditors of a credible organization Bureau Veritas.

To control all the elements of the integrated HSE management system pursuant to the approved annual programmes and plans, external and internal audits are carried out, as well as audits of KPO's contractors. In 2017, the EMS Controllershship conducted 15 internal and external environmental audits as well as contractors' audits, including the evaluation of the KPO's EMS compliance degree to the





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requirements of the RoK legislation and international standards. The results of the conducted audits have shown the effectiveness of the environmental management system in the audited processes and improvement opportunities.

#### ENERGY MANAGEMENT SYSTEM GRI 103-2, GRI 103-3

To ensure adequate environment for the 'green economy' transition, a fully new Energy management division was set up in June 2014 in the company structure with a primary objective to ensure compliance to the RoK and international requirements in energy saving and energy effectiveness.

In 2015, in accordance with the current legislation in this area, a first energy audit was conducted, which became a starting point for further improvement of the KPO energy performance.

Based on the results of this activity in 2016, KPO introduced an energy management system aimed at energy conservation and Company's financial and material costs saving by means of systematic management of energy resources.

In July 2017, KPO became one of the first companies - subsurface users in Kazakhstan that conducted an ISO 50001:2011 certification for Energy management systems and obtained a compliance certificate, having validated the Company's commitment to key principles of energy saving and energy efficiency. The ISO 50001 certificate is valid until September 2020 (the year of next certification audit). In order to verify the compliance with the standard the Company plans a surveillance audit to be annually conducted by an independent third party. This step will further contribute to enhance business reputation of KPO as a reliable partner of the Republic of Kazakhstan, taking appropriate actions to meet both regulatory requirements and international standards.

#### ENVIRONMENTAL PROTECTIVE MEASURES PLAN FOR 2017 GRI 103-2

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

In order to obtain an Environmental Emissions Permit, KPO submits the EPMP to the authority for the permit's validity period, as provided by the RoK Environmental Code (chapter 8). The Plan's measures focus on ensuring the environmental safety, improving the

environmental protection methods and technologies, the rational use of nature and implementation of the ISO 14001 and ISO 50001 international standards.

In 2017, KPO performed its operations in accordance with the obtained Environmental Emissions Permits and developed EPMPs as presented in table №25.

TABLE № 25. KPO ENVIRONMENTAL PROTECTIVE MEASURES PLANS FOR 2017 AND ISSUED PERMITS GRI 307-1

DEVELOPED AND AGREED ENVIRONMENTAL PROTECTIVE MEASURES PLANS FOR 2017	PERMITS OBTAINED AND VALID FOR 2017	PERMIT ISSUED BY
2017 KPO EPMP for the Karachaganak Field	Environmental Emissions Permit No. KZ19VCZ00122269 dated 26.12.2016 (validity: January 1, 2017 – December 31, 2017)	Committee for Environmental Regulation and Control of the RoK Ministry of Energy
2016-2020 KPO EPMP for the KPC-Bolshoi Chagan-Atyrau export condensate pipeline in the West-Kazakhstan Oblast (WKO)	Environmental Emissions Permit No. KZ68VDD00021755 dated 12.08.2015 (validity: January 1, 2016 – December 31, 2020)	WKO Akimat, West-Kazakhstan Oblast Administration of Natural Resources and Nature Use Control
2016-2020 KPO EPMP for the Atyrau Oblast	Environmental Emissions Permit No. KZ87VDD00021510 dated 07.08.2015 (validity: January 1, 2016 – December 31, 2020)	Atyrau Oblast Akimat, Atyrau Oblast Administration of Natural Resources and Nature Use Control



In 2017, KPO developed its Environmental Protective Measures Plan (EPMP) for the Karachaganak Field for the term of validity of the Environmental Emissions Permit (EEP). The environmental protection measures included in the KPO EPMP for the Karachaganak Field (KOGCF) were agreed by the Committee for Environmental Regulation and Control of the RoK Ministry of Energy.

Environmental Emissions Permits for the export pipeline facilities at the WKO Bolshoi Chagan OPS and the Atyrau Terminal OPS were received in 2015 being valid until 2020, as shown in table №25. The Environmental Protective Measures Plans for 2016-2020 were scheduled according to the validity terms of the received permits.

In 2017, the total actual expenditures for implementation of the environmental measures at the Karachaganak Field amounted to KZT 9.4 bln, while the planned costs made up to 9.6 bln.

Compared to 2016, in 2017 KPO's investments in environmental protection increased by 1.5 times, which is explained by such activities, as:

- the use of a hydrocarbon-based fluid for the reservoir operations (Lamix or Deisel) (invested KZT 1.7 bln);
- the use of the 'Super Green burner' reducing soot emissions when burning hydrocarbons at wells (invested KZT 0.35 bln). The technology of the 'Super Green burner' allows eliminating emissions of polluting substances into air during well testing. Its function is to pump air with compressors to a burning zone, thus facilitating more effective burning of gas with a complete absence of soot.

Expenses broken down by sections of the 2017 KPO EPMP are shown in table №26.

TABLE № 26. EXPENSES FOR IMPLEMENTATION OF THE 2017 EPMP, IN THOUS. KZT GRI 103-2

NO.	SECTIONS OF THE ENVIRONMENTAL PROTECTION MEASURES PLAN	ACTUAL EXPENSES FOR IMPLEMENTATION OF KPO MEASURES IN 2017, THOUS. KZT:		
		- within the Karachaganak Field	- on the KPC-Bolshoi Chagan-Atyrau export condensate pipeline (WKO)	- on the KPC-Bolshoi Chagan-Atyrau export condensate pipeline (Atyrau oblast)
1	Air conservation	5,069,616	8,793	5,218
2	Conservation and rational use of water resources	5,925	N/A*	N/A*
3	Land conservation	314,301	N/A*	N/A*
4	Subsoil conservation and rational use	223,621	N/A*	N/A*
5	Flora and fauna conservation	68,154	224	11,015
6	Production and consumption waste management	3,422,333	62	0
7	Radiation, biological and chemical safety	200	N/A*	N/A*
8	Introduction of management systems and best safe technologies	62,346	N/A*	N/A*
9	Scientific research and survey and design works on environmental protection	193,172	4,300	4,355
10	Environmental awareness and promotion	25,361	0	0
TOTAL:		9,385,029	13,379	20,588

\* N/A – measures are not applicable.



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Employees of KPO Environmental Controllershship and state officials visiting KPC

The results of the EP measures implemented in KPO in 2017:

**Air emissions**

- Use of high pressure separators in completion of 9 wells helped reduce the amount of air pollutants by 11,629 tonnes;
- Use of high pressure pump for pumping oil helped reduce the amount of air pollutants by 328 tonnes;
- Use of hydrocarbon-based fluid for the reservoir operations (Lamix or Deisel) helped reduce the amount of air pollutants by 428 tonnes.

**Waste and wastewater management**

- 929.94 tonnes of municipal and production waste was sorted and sent for incineration at the General Purpose Incinerator (GPI);
- The following was sorted and sent for processing and reuse as recyclable materials:
  - 101.98 tonnes of waste paper, which is by 26% more compared to 75.32 tonnes in 2016;
  - 12.08 tonnes of scrap metal, which is by 14% less compared to 14.04 tonnes in 2016;
  - 18.04 tonnes of plastic, which is by 28% less compared to 23.18 tonnes in 2016.
- Covering 6 cells filled with waste was completed at the Eco Centre Solid Waste Burial Landfill;
- In 2017, the total volume of treated liquid waste and wastewater amounted to 14,638.64 tonnes, of which 4,815.46 tonnes were reused for preparation of drilling muds/brines. Volume of reused processing products depends on the operational needs of the Company.
- KPO continues transfer of waste accumulated at Solid Waste and Spent Drilling Mud Site to the Eco Centre Solid Waste Burial Landfill. The waste is treated in the Eco Centre's Rotary Kiln Incinerator prior to disposal on the Landfill. 5,266.26 tonnes of waste were treated in 2017 (5,733 tonnes in 2016). Some 2,000 tonnes are planned to move in 2018.

- In 2017, the volume of treated wastewater reused at the KOGCF for making drilling muds, irrigation of planted trees and dust control amounted to 50,476 m<sup>3</sup> (48,023 m<sup>3</sup> in 2016). The volume of reused wastewater was 11% of the total consumption of fresh technical water.

**Land reclamation** GRI 304-3

- In 2017, 103.2 ha of land disturbed as a result of well operations and construction activities was reclaimed, i.e. the area of the reclaimed land increased by 17% compared with 2016 (85.5 ha);

**Environmental management system** GRI 103-3

- Energy management system was adopted, and ISO 50001:2011 certification audit was successfully conducted;
- Environmental Management System was under certification process to verify its compliance with the requirements of ISO 14001:2015.

**ENVIRONMENTAL FINES** GRI 307-1

As described in the 2016 Sustainability Report, starting from May 2016 the changes in the RoK legislation applicable to subsoil use and environmental protection have allowed subsoil users to set the limits for emissions caused by gas flaring associated with the process equipment upsets, failures and malfunction. For the period of 2017, KPO set the limits both for volumes of technologically unavoidable gas flaring in the Associated Gas Processing Development Programme, and for emissions caused by such flaring in the Maximum Permissible Emissions (MPE) Project.

In 2017, KPO was not subjected either to administrative or civil liability on environmental matters. The amounts of administrative fines and civil claims paid by KPO in 2017 attributed to the periods of 2015-2016, which happen owing to the duration of judicial appeal procedure. The payment made in 2017 included KZT 153.5 mln of administrative fines and KZT 3.07 bln of civil actions filed in 2016.

As in previous periods, KPO did not exceed the pollutant emissions limits set in the 2017 Environmental Emissions Permit.



**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 2017, the total amount of air emissions decreased by 25% compared to 2016, totalling 8,600 tonnes. The reduction of emissions is explained by a significant decrease in the volumes of gas and liquid combusted at well flares.

Table №27 shows data on the permissible and actual KPO's emissions for the period of 2015-2017.

TABLE №27. PERMITTED AND ACTUAL VOLUMES OF POLLUTANTS EMISSIONS, 2015-2017

ANNUAL VOLUME OF EMISSIONS BY POLLUTANTS, IN TONNES	2015	2016	2017
Permitted:	14,807	21,876	26,577
Actual, including:	11,314	11,421	8,569
Nitrogen oxides	1,594	1,934	1,967
Sulphur dioxide	6,113	5,819	3,641
Carbon monoxide	1,723	1,850	1,266
Volatile organic compounds	1,515	1,449	1,533
Hydrogen sulphide	29	28	27
Solid particles	90	89	48
Other	249	252	87

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

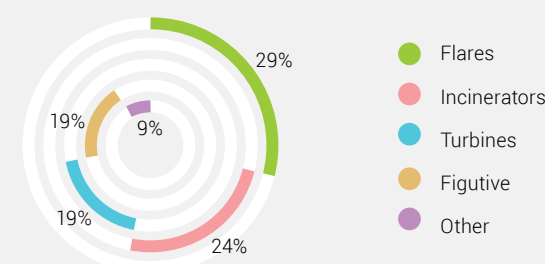
In KPO, pollutants' emissions are estimated using the calculation method based on the initial data on fuel consumption and composition, and equipment operation time. The calculation method was adopted in KPO due to the absence of approved emission accounting methods utilizing the measurement data at the emission sources, and insufficient number of measurements to calculate.

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.



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GRAPH №30. POLLUTANT EMISSIONS IN KPO IN 2017 BY MAIN AIR POLLUTION SOURCES

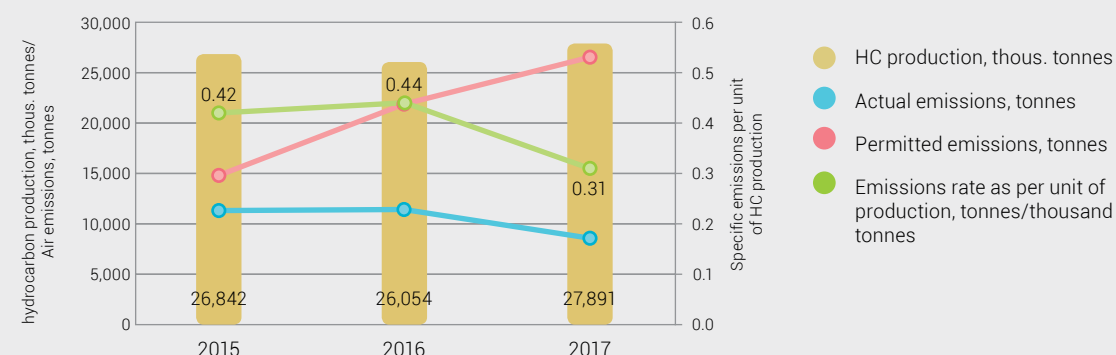


Emissions are calculated by each component and type of emission sources using the methods recommended for application in the Republic of Kazakhstan. Graph №30 shows pollutants emissions broken down by main air pollution sources.

In 2017, the specific emissions per unit of production amounted to 0.31 tonnes per 1,000 tonnes of hydrocarbons (HC) produced.

The decrease in specific emissions in 2017 as compared to 2016 was due to smaller volumes of flared mixture at wells and production facilities, and larger production volumes.

GRAPH №31. VOLUME OF HC PRODUCTION AND ENVIRONMENTAL EMISSIONS IN 2015-2017



View of KPC



GAS FLARING <sup>G4-O66</sup>

In 2017, the total amount of flared gas was only 0.08% of the total volume of gas produced by KPO or 0.49 tonnes per thousand tonnes of produced hydrocarbons. Such an emission rate as a result of flaring in 2017 is an evidence of a very high performance when compared to the worldwide industry average of 12.9 tonnes per thousand tonnes and European average of 3.6 tonnes per thousand tonnes<sup>3</sup>, as stated in the 2016 IOGP report.

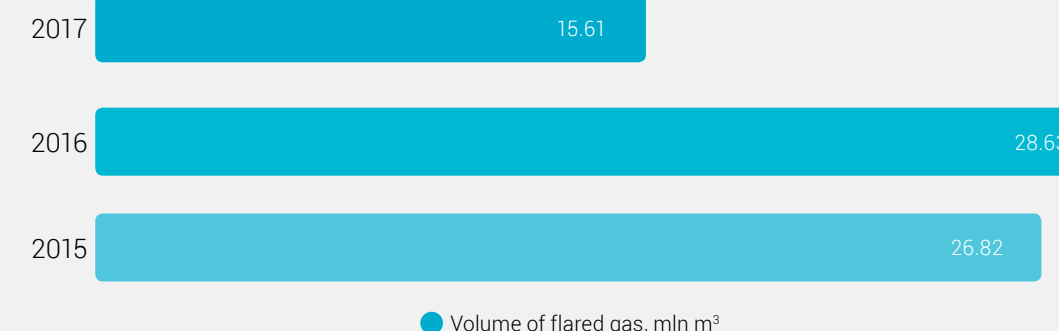
In 2017, KPO extensively used equipment and materials contributing to reduction of air emissions when cleaning up (completing) the

wells: high-pressure separators and high-pressure pumps, hydrocarbon-based fluid.

As a consequence of these initiatives, the volume of liquids flaring decreased by 95 thousand tonnes, which was 96% of the volume produced during the wells completion.

The volume of flared gas during the wells clean-up decreased by 44 mln m<sup>3</sup> (or 74% of the volume produced during the wells completion).

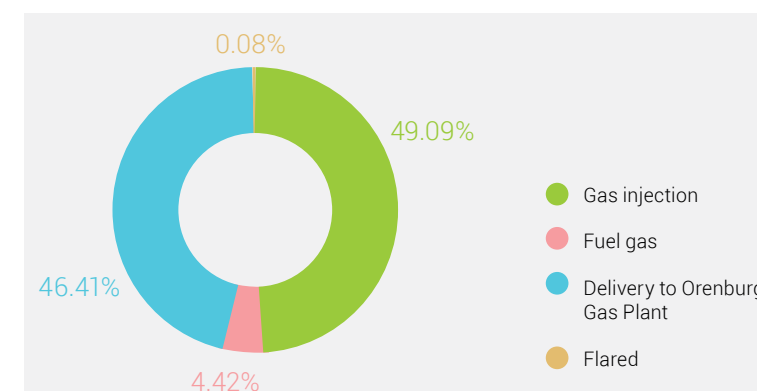
GRAPH №32. VOLUME OF ASSOCIATED GAS FLARED, MLN M<sup>3</sup>



GAS UTILIZATION

In 2017, the KPO gas utilization rate reached 99.92% (99.84% in 2016). The performance target approved by the RoK authority under the 2017 Associated Gas Processing Development Programme is 99.2%. Gas utilization in the Republic of Kazakhstan in 2016 amounted to 97.5%.<sup>4</sup>

GRAPH №33. GAS UTILIZATION AND FLARING IN 2017



<sup>3</sup> Data source: Annual reports of the International Association of Oil and Gas Producers (IOGP) – 'Environmental Performance Indicators – 2016 Data'.

<sup>4</sup> Data source: the RoK Energy Minister's Order No. 571 dated 28 December 2016 On the Strategic Plan of the RoK Ministry of Energy for 2017 - 2021.





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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. From 2013 to 2015, KPO obtained the GHG emission quotas.

According to Article 324.9 of the RoK Environmental Code, the quota system has been suspended until 01.01.2018. In view of that, no quota for GHG emissions for 2017 was granted. Thus, no base year for obtaining the quota has been officially established. To compare the GHG emissions and maintain the principles of reporting in this issue, we assumed the year 2016 as the base year (i.e. the year preceding the reporting year).

In accordance with the approved Monitoring Plan for 2016-2020, KPO performs quarterly assessment of GHG emissions for carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). 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) applying the effective Methodology No. 280 dated 05.11.2010 approved in an Order of the acting RoK Minister of Environmental Protection.

According to the verified GHG Emissions Inventory Report for 2017, the total volume of GHG emissions amounted to 1,928,700 tonnes in CO<sub>2</sub>-equivalent, of which CO<sub>2</sub> contribution equalled to 1,765,861 tonnes of CO<sub>2</sub>-equivalent (91.5%), CH<sub>4</sub> - 154,113 tonnes of CO<sub>2</sub>-equivalent (8%), N<sub>2</sub>O - 8,726 tonnes of CO<sub>2</sub>-equivalent (0.5%).

For converting the GHG emissions into the carbon dioxide equivalent (CO<sub>2</sub>-equivalent), the global warming potentials (GWP) of Intergovernmental Panel on Climate Change (IPCC) of 1995 were used based on the climate impact of greenhouse gas for a 100-year period.

The information on the dynamics of generated GHG emissions is provided in table 28. Compared to 2016, some increase of the GHG emissions in 2017 was observed due to longer equipment running hours as there was no total facilities' shutdown. 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.

TABLE №28. DYNAMICS OF GHG EMISSIONS GENERATED AS A RESULT OF KPO PRODUCTION ACTIVITIES

TOTAL VOLUME OF GREENHOUSE GAS EMISSIONS (TONNES OF CO <sub>2</sub> EQUIVALENT)					
From fuel combustion at flares and incinerators	From fuel combustion at stationary sources	Fugitive emissions	Total GHG emissions in 2017	Total GHG emissions in 2016	Total GHG emissions in 2015
137,106	1,640,090	151,504	1,928,700	1,870,041	1,944,165



SPECIFIC GREENHOUSE GAS EMISSIONS GRI 305-4

In 2017, the specific greenhouse gas emissions amounted to 69 tonnes per 1,000 tonnes of hydrocarbons produced, which is 4% lower than in 2016. The decrease is caused by larger production volumes and smaller volume of flared mixture during well completion for gas by 60%, for liquid - by 84% in result of implementation of the activities listed in Table №30. Dynamics of the specific greenhouse gas emissions is shown in Graph №34.

GRAPH №34. DYNAMICS OF SPECIFIC GHG EMISSIONS PER UNIT OF PRODUCED HYDROCARBONS (HC)

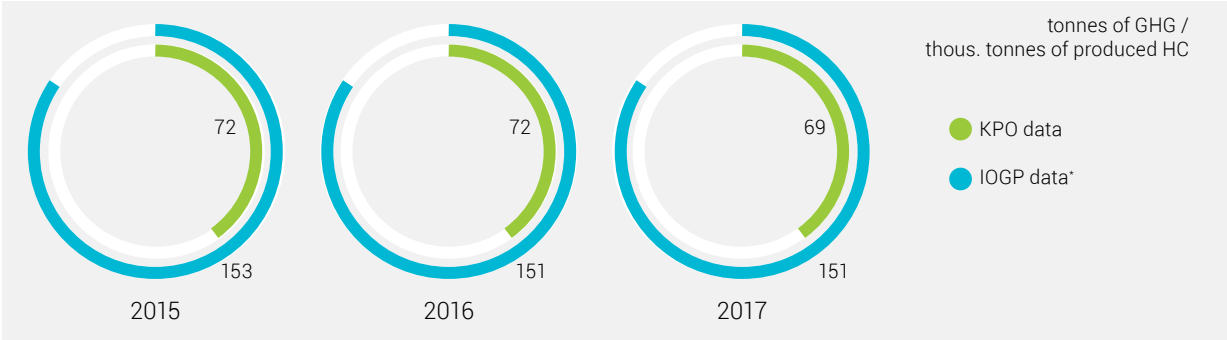


Table №29 shows the KPO GHG specific emissions comparing them with the specific emissions data provided by the IOGP. The actual specific GHG emissions in the Karachaganak Field in 2017 were lower than the European indicators by 30% and lower than the averaged international indicators by 54%.

TABLE № 29. 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* (EUROPE)	IOGP DATA* (IN TOTAL)	KPO DATA		
	2016	2016	2015	2016	2017
CO <sub>2</sub> + CH <sub>4</sub> + N <sub>2</sub> O (CO <sub>2</sub> e)	98	151	72	72	69
CO <sub>2</sub>	88	129	67	66	63

\* Note: The data was sourced by Annual reports of the International Associations of Oil and Gas Producers (IOGP) – 'Environmental Performance Indicators – 2016 Data'. The 2016 data was used for comparison purpose as the 2017 IOGP Report was not available at the time this issue was prepared.

REDUCTION OF GREENHOUSE GAS EMISSIONS GRI 305-5

In view of consistent reduction of GHG (CO<sub>2</sub>) emissions, KPO set the following objectives for 2017 in the 'Greenhouse Gas Emissions Reduction Programme for 2016-2020' verified by an independent accredited organization.

- to reduce the direct emissions of CO<sub>2</sub> by 203,081 tonnes through implementation of a number of production optimization and energy efficiency projects;

- to ensure that the volumes of specific emissions do not exceed 70 tonnes of CO<sub>2</sub> per 1,000 tonnes of hydrocarbons production.

Baseline scenario reflects the level of GHG emissions or the level of their absorption in the absence of a proposed internal project, in comparison with which an achieved volume of GHG emissions reduction and (or) absorption is estimated.

According to Greenhouse Gas Emissions Reduction Programme for 2016-2020, the estimated level of emissions in 2017 is amounted to 2,234,000 tonnes of CO<sub>2</sub><sup>5</sup>

<sup>5</sup> Implementation rules of project mechanisms in the field of greenhouse gas emissions control and absorption. Approved by a Ministry of Energy of RoK Order of 12 February, 2012 №76

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In 2017, the KPO's specific indicator of CO<sub>2</sub> emissions totalled 63 tonnes of CO<sub>2</sub>/thousand tonnes of HC production (Table №29). Owing to implementation of the five projects listed in Table №30, the actual reduction of the GHG emissions exceeded the target by more than twice.

TABLE № 30. GHG EMISSIONS' REDUCTION MEASURES IN 2017

№	MEASURES	EMISSIONS REDUCTION, CO <sub>2</sub> TONNES/YEAR		STATUS OF COMPLETION IN %
		Target	Actual	
1	Use of high-pressure separator when cleaning up the wells	88,680	364,391	411%
2	Use of high-pressure pump when cleaning up the wells	36,940	14,833	40%
3	Repair of valves of KPC flare headers	18,571	22,017	119%
4	Adjustment of the steam flowmeter at processing train No. 4	9,817	13,441	137%
5	Upgrade of piping of turbo compressors at Unit-2	49,073	32,406	66%
TOTAL:		203,081	447,088	220%

To calculate the actual reduction of CO<sub>2</sub> emissions we used methods and coefficients proposed by the verified GHG Emissions Reduction Programme for 2016-2020.



On-site meeting of the State Environmental Experts Council at KPC

ENVIRONMENTAL MONITORING

KPO performs comprehensive environmental monitoring as set in the Production Environmental Control (PEC) Programme. Within the PEC scope, 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 to assess the possible impact of production activities on the environment. 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. Our air quality monitoring was described in detail in our Sustainability Report 2016 (p.78).

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<sub>2</sub>S), sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) 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.

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 once a day at the boundary of the SPZ. Air sampling at the SPZ is made per 8 compass points (rhumbs): N, NE, E, SE, S, SW, W, and NW. The samples are analyzed for the content of the same components measured at the EMSs: hydrogen sulphide (H<sub>2</sub>S); sulphur dioxide (SO<sub>2</sub>); nitrogen dioxide (NO<sub>2</sub>); carbon monoxide (CO) plus methane (CH<sub>4</sub>) and methylmercaptan (CH<sub>3</sub>SH) content.

In 2017, no exceedance of the maximum permissible concentration of the monitored components at the KOGCF SPZ was recorded.

Average concentrations of the monitored air components at the boundary of the SPZ for 2017 are given in the table №31. The column 'Actual annual average concentration' shows the minimum and maximum values of average concentrations of the controlled air components per 8 points.

TABLE №31. THE AVERAGE ANNUAL CONCENTRATIONS OF THE MONITORED AIR COMPONENTS RECORDED AT THE SPZ BOUNDARY IN 2017

MONITORED COMPONENTS	ACTUAL ANNUAL AVERAGE CONCENTRATION, MG/M <sup>3</sup>	MPC ONE-TIME, MG/M <sup>3</sup>	EXCEEDANCE OF MPC
H <sub>2</sub> S	0.002	0.008	no
SO <sub>2</sub>	0.003 - 0.004	0.5	no
NO <sub>2</sub>	0.027 - 0.029	0.2	no
CO	below MDL*	5.0	no
CH <sub>4</sub>	1.092 - 1.106	50**	no
CH <sub>3</sub> SH	not detected	0.006	no

\* Measurements recorded were below the method's minimal detection limit (MDL). MDL for CO is 0.6 mg/m<sup>3</sup>.

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





Environmental management systems  
Environmental protective measures plan  
Air emissions  
**Environmental monitoring**  
Energy management

ATMOSPHERIC AIR MONITORING IN THE VILLAGES  
ADJACENT TO THE KARACHAGANAK FIELD

The certified contractor laboratory also has stationary air monitoring posts in 8 villages located around the field (Berezovka, Bestau, Zharsuat, Zhanatalap, Dimitrovo, Karachaganak, Priuralnoe, Uspenovka) and in the town of Aksai that perform air sampling 4 times a day (at 1:00 am, 7:00 am, 01:00 pm and 7:00 pm). Sampling of air is carried out by the permanent personnel of the contracted laboratory, who reside in the villages where the stationary air monitoring posts are located.

Furthermore, unscheduled air sampling is performed at the stationary monitoring posts if a complaint is received from the residents, such as a complaint regarding an unusual odour. Air samples are taken to the laboratory in the town of Aksai where the samples are chemically tested for the content of the 4 main components: hydrogen sulphide (H<sub>2</sub>S), sulphur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>) and carbon monoxide (CO) that are monitored in accordance with the State Standard and Ruling Documents. In addition, once in 10 days the air is monitored for concentration of volatile organic components: benzene (C<sub>6</sub>H<sub>6</sub>), toluene (C<sub>7</sub>H<sub>8</sub>), xylene (C<sub>8</sub>H<sub>10</sub>). In the village of Berezovka,

monitoring also includes the air concentration of methylmercaptan (CH<sub>3</sub>SH).

Monthly results of air monitoring are published in local printed media and sent to the villages for posting on public information boards. While the average monthly concentrations of NO<sub>2</sub> did not exceed MPC in 2017, there were a total of four exceedances of the daily average MPC of NO<sub>2</sub> measured out of 53,924 taken samples:

- 1 occurrence by 1.225 times MPC - registered in Berezovka village in I quarter 2017;
- 3 occurrence by 1.025; 1.1; 1.125 times MPC registered in Aksai town in III quarter 2017.

MPC exceedance of other monitored components was not recorded throughout 2017.

Annual average concentrations of monitored air components in the nine villages in 2017 are given in table №32. The column 'Actual annual average concentration' shows the minimum and maximum values of average concentrations of the controlled air components per 9 villages.

TABLE №32. ANNUAL AVERAGE CONCENTRATIONS OF MONITORED AIR COMPONENTS IN THE VILLAGES  
ADJACENT TO KOGCF IN 2017

MONITORED COMPONENTS	ACTUAL ANNUAL AVERAGE CONCENTRATION, MG/M <sup>3</sup>	MPC DAILY AVERAGE, MG/M <sup>3</sup>	EXCEEDANCE OF MPC DAILY AVERAGE
H <sub>2</sub> S	0.002	0.008**	no
SO <sub>2</sub>	0.003 - 0.004	0.05	no
NO <sub>2</sub>	0.028 - 0.029	0.04	no
CO	below MDL*	3.0	no
C <sub>6</sub> H <sub>6</sub>	0.143 - 0.158	0.3**	no
C <sub>7</sub> H <sub>8</sub>	below MDL*	0.6**	no
C <sub>8</sub> H <sub>10</sub>	below MDL*	0.2**	no
CH <sub>3</sub> SH	not detected	0.006**	no

\* Measurements recorded were below the method's minimal detection limit (MDL). MDLs for monitored parameters are the following: CO is 0.6 mg/m<sup>3</sup>; C<sub>7</sub>H<sub>8</sub> is 0.14 mg/m<sup>3</sup>; C<sub>8</sub>H<sub>10</sub> is 0.14 mg/m<sup>3</sup>.

\*\* 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

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 and in the village of Berezovka.

Annual average concentrations of monitored components recorded by EMSs in 2017 are given in Table №33 and Table №34. 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.

TABLE №33. ANNUAL AVERAGE CONCENTRATIONS OF MONITORED COMPONENTS IN 2017 RECORDED BY EMS

MONITORED COMPONENTS	ACTUAL ANNUAL AVERAGE CONCENTRATION, MG/M <sup>3</sup>	MPC ONE-TIME, MG/M <sup>3</sup>	EXCEEDANCE OF MPC ONE-TIME*
H <sub>2</sub> S	0 - 0.001	0.008	no
SO <sub>2</sub>	0.003 - 0.009	0.5	no
NO <sub>2</sub>	0.003 - 0.009	0.2	no
CO	0.1 - 0.4	5.0	no

\* Criteria of air quality at the SPZ boundary is MPC one-time.

TABLE №34. ANNUAL AVERAGE CONCENTRATION OF MONITORED COMPONENTS RECORDED BY EMSs № 013, 014 IN THE  
BEREZOVKA VILLAGE IN 2017

MONITORED COMPONENTS	ACTUAL ANNUAL AVERAGE CONCENTRATION, MG/M <sup>3</sup>	MPC DAILY AVERAGE, MG/M <sup>3</sup>	EXCEEDANCE OF MPC DAILY AVERAGE
H <sub>2</sub> S	0-0.001	0.008*	no
SO <sub>2</sub>	0.004 - 0.015	0.05	no
NO <sub>2</sub>	0.004 - 0.006	0.04	no
CO	0.3	3.0	no

\* MPC one-time. The MPC daily average for hydrogen sulphide is not determined, therefore, MPC one-time is applied for comparison purpose.

All existing 18 EMSs measure four main pollutants (H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>x</sub>, CO) on a continuous basis, i.e. 24 hours per day. According to the data received from the EMSs in 2017, the actual daily average

concentrations of H<sub>2</sub>S did not exceed the MPC; although a one-time short period (20 minutes) exceedance of MPC was registered.

Other ingredients did not exceed the MPC level in 2017.





Environmental monitoring  
Energy management  
Water use  
Waste management  
Biodiversity

TABLE № 35. EXCEEDANCES OF ONE-TIME MPC OF HYDROGEN SULFIDE (H<sub>2</sub>S) RECORDED BY EMS IN 2017

EMS NO.	ACTUAL ONE-TIME CONCENTRATIONS RECORDED IN 2017, MG/M³		NUMBER OF EXCEEDANCES	FREQUENCY RATIO OF MPC EXCEEDANCE, ONE-TIME
	MIN	MAX		
EMS-008	0	0.071	2	5.75 – 8.875
EMS-011	0	0.017	4	1.025 – 2.125
EMS-013	0	0.009	1	1.125
EMS-017	0	0.018	2	1.875 – 2.25

One-time MPC is 0.008 mg/m³.

As we reported in our Sustainability Report 2013, KPO created and successfully launched online information portal for transmission of air quality monitoring data from automatic EMS installed in Berezovka to the West Kazakhstan Regional branch of KazHydromet. This allowed the regional authorities to obtain air quality monitoring data in Berezovka independently in real time.

The project was done in 2013 as part of implementation of the Environmental Protective Measures Plan.

In 2018, KPO plans to launch an automated system for online transmission of air quality monitoring data from all 18 automatic EMS to the West Kazakhstan Oblast Environmental Department. This will increase the transparency of air monitoring data conducted by KPO.

SANITARY PROTECTION ZONE

In May 2015, the new Sanitary Protection Zone (SPZ) has been approved at the boundary of the Karachaganak Field following the project for expansion of the KPO operational facilities planned from 2018.

Within 2017 KPO has been working to find the best solution for relocating some of the current environmental monitoring stations (EMSs) from the old SPZ boundary to the new one and moving one station to the boundary of Aksai town. Earlier in the year, there have been conducted pre-feasibility studies on relocation of the monitoring stations.

In 2017, KPO developed the plan of further SPZ development and shared it with the WKO Healthcare Department. In 2018, KPO started its implementation.

At the end of 2017, KPO developed the Industrial Environmental Control Programme for the Karachaganak Field for the year 2018. In view with commissioning of the new SPZ and relocation of the automatic environmental monitoring stations, the scope of monitoring at four points at the estimated SPZ boundary (N,W,S,E) has been increased from 1 to 4 times per day.

Starting from 1<sup>st</sup> January 2018 KPO has been conducting air monitoring at the new SPZ boundary.



ENERGY MANAGEMENT

ENERGY CONSUMPTION GRI 302-1

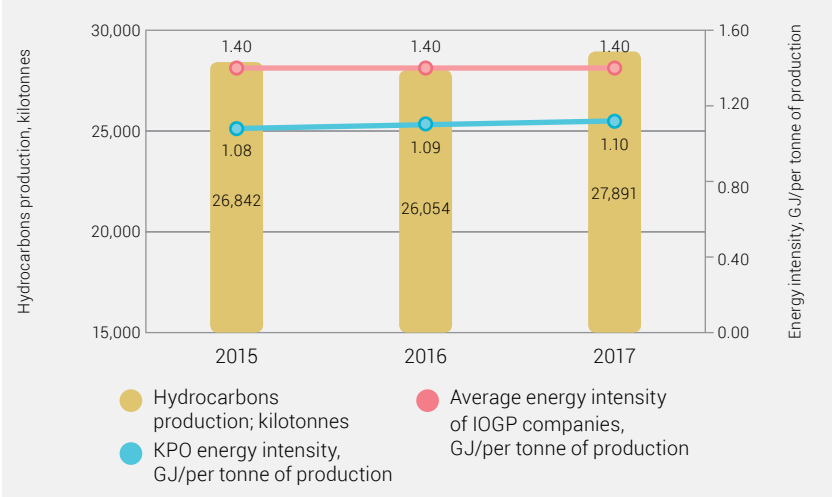
In 2017, the energy consumption totalled 1,051,285 tonnes of coal equivalent compared to 971,700 tonnes of coal equivalent in 2016. Table №36 shows the energy consumption volumes broken down by energy type.

TABLE №36. KPO ENERGY CONSUMPTION IN 2015-2017

TYPE OF ENERGY	UNIT OF MEASURE	ENERGY CONSUMPTION, PHYSICAL UNITS			ENERGY CONSUMPTION, TONNES OF COAL EQUIVALENT			ENERGY CONSUMPTION, GJ		
		2015	2016	2017	2015	2016	2017	2015	2016	2017
Fuel gas	K m³	804,002	785,007	850,765	990,531	967,129	1,048,142	29,032,455	28,346,542	30,721,053
Electric power (purchased)	MW/h	7,575	10,841	6,892	932	1,333	848	27,308	39,085	24,846
Diesel fuel	m³	1,215	1,436	772	1,532	1,811	911	44,901	53,074	26,696
Gasoline	m³	321	264	287	354	291	316	10,386	8,535	9,274
Heating (in rented offices)	Gcal	8,678	7,943	7,468	1,241	1,136	1,068	36,373	33,292	31,301
TOTAL					994,590	971,700	1,051,285	29,151,423	28,480,528	30,813,170

In 2017, increase in production resulted in increase of fuel gas consumption as compared to 2016. The consumption of purchased electricity is lower than in the previous year, as in 2016 increase in the purchased electricity consumption was due to the shutdown of production facilities. Consumption of diesel fuel and gasoline changed slightly.

GRAPH №35. DYNAMICS OF ENERGY INTENSITY IN 2015-2017 GRI 302-3, 102-48



In 2017, the energy intensity indicator was 1.10 GJ/tonnes of hydrocarbons, which was slightly higher compared to the previous period, but still remained below the average energy intensity indicator of the companies that submit their reports to the IOGP and below the 2014 base line value (1.40).

Note: Data on the hydrocarbons production in the graph for 2015, 2016 years was adjusted to bring it in line with the data on hydrocarbon production in the graph №31 'Volumes of HC production and environmental emissions in 2015-2017.' The difference in calculation of the level of production arose from the use of different density indicators when converting gas to tonnes.

ENERGY SAVING AND EFFICIENCY ACTION PLAN

Pursuant to the approved KPO's Energy Saving and Energy Efficiency Improvement Action Plan for 2016-2020, the following actions were taken in 2017:

- Feasibility study was conducted with regard to installation of variable-frequency drives (VFD) at process facilities.

Unfortunately, the study showed that the installation of VFDs was not cost effective.

- Old-style lamps were partially replaced with LED ones at Bolshoi Chagan OPS and in Chemical Laboratory.



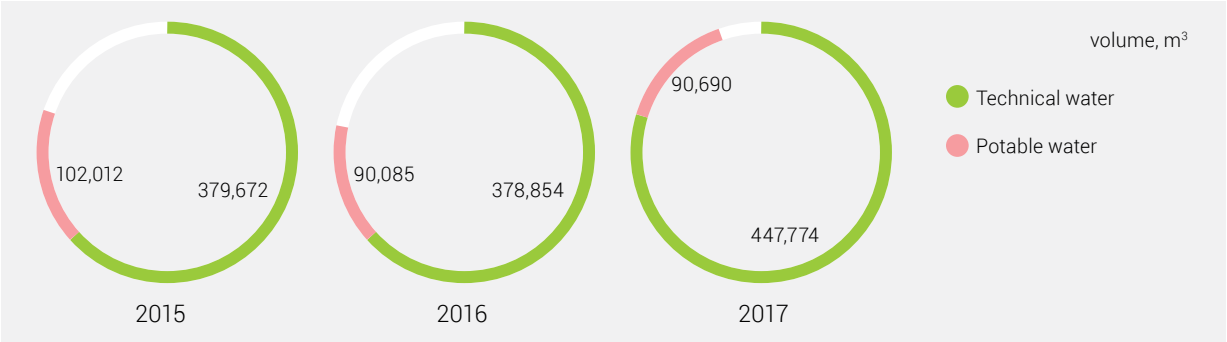
International Environmental Uralsk Green Forum

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 2017, the total water consumption in the Company amounted to 538,464 m³, of which 447,774 m³ was the technical water and 90,690 m³ was the potable water.

GRAPH №36. KPO WATER CONSUMPTION IN 2015-2017



The increase in water consumption was due to the use of more technical water in the production processes, as well as to losses of technical water in pipeline breakthroughs occurred within the 2017.

The source of water used by KPO for technical needs is Konchubai gully as specified by the Special Water Use Permit, issued for industrial needs, which sets the water intake limits. In this case, KPO is a primary water user. The water intake from other sources (Zharsuat, Serebryakovskiy and Kigach water intake facilities) is

ensured through contracts with potable water suppliers. In that case, the Company becomes a secondary water user.

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

Table №37 shows KPO's water consumption broken down by sources.

TABLE №37. KPO'S WATER CONSUMPTION IN 2015-2017 BROKEN DOWN BY SOURCES, M³ GRI 303-1

SOURCE	FACILITY	WATER QUALITY	CONSUMPTION		
			2015	2016	2017
1. Zharsuat water intake facility	KOGCF	groundwater, potable	100,304	88,415	89,034
Domestic needs			100,304	88,415	89,034
2. Serebryakovskiy water intake facility	Bolshoi Chagan OPS	groundwater, potable	1,708	1,670	1,656
Domestic needs			1,454	1,165	931
Production needs			254	505	725
3. Konchubai gully water pond	KOGCF	surface water, technical	377,020	374,956	445,591
Production needs			377,020	374,956	445,591
4. Kigach water intake facility	Atyrau OPS	surface water, technical	2,652	3,898	2,183
Domestic needs			845	1,053	1,054
Production needs			1,807	2,845	1,129

DOMESTIC WATER

The sources for KPO domestic water supply are Zharsuat water intake - the Karachaganak field, Serebriakovskiy water intake – in the Bolshoi Chagan OPS, and Kigach water intake – at the Atyrau Terminal OPS.

In 2017, the volume of water consumption for KPO domestic needs totalled 91,019 m³, which was 0.4% higher compared to the water consumption in 2016 (90,633 m³).

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 WKO Branch and, due to absence of alternative sources of water supply, is used only to replenish the fire tanks for fire safety purposes.

TECHNICAL WATER

The main source of water supply for technical needs in the Karachaganak field is a holding pond No.1 at 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 2017 amounted to 445,591 m³.

The Konchubai gully is not included in the list of local fishery water bodies according to the Resolution of the West-Kazakhstan Oblast Akimat No.176 dated 16.06.2017. The Konchubai gully is not fed by ground water; it is replenished only during spring by melting snow and rainfalls.





Energy management  
Water use  
Waste management  
Biodiversity



In case of low amount of precipitation in winter, there is a risk that the water level required for water intake for the needs in the Karachaganak Field will lower. In case of water shortage and in order to avoid the suspension of the Company operations, KPO has two backup wells № W-9 and № W-4 that can be used for technical water intake. In 2017, no backup wells water was used.

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

In 2017, the volume of water consumption for technical needs totalled 447,445 m³, which is 18% higher compared to 2016 (378,306 m³).

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 are also considered as wastewater.

In 2015, the Company developed and agreed with the regulatory authorities the projects on the maximum permissible contaminants discharge (MPD) limits and wastewater quality monitoring schedules in the KOGCF for the period of 2016-2017, for Bolshoi Chagan OPS and Atyrau OPS - for 2016-2020. The MPD limits projects specify

the types and volumes of the generated wastewater, locations of its discharge, and set the concentrations of contaminants and their discharge limits.

KPO uses special man-made facilities for collecting treated domestic and industrial wastewater and storm runoffs shown in Table №38. 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.

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.

Wastewater generated as a result of the KPO economic and production activities is not discharged into the natural water bodies.

Table №39 shows the KPO 2015-2017 discharge volumes indicating wastewater types and receiving facilities.



TABLE №38. WASTEWATER COLLECTION FACILITIES

TYPE OF WASTEWATER	FACILITY/ LOCATION
Treated domestic wastewater	<ul style="list-style-type: none"><li>KCC holding ponds № 1 and 2,</li><li>evaporation ponds at Bolshoi Chagan OPS and Atyrau OPS,</li><li>seasonal pond at Unit-3</li></ul>
Industrial wastewater	<ul style="list-style-type: none"><li>KPC sediment pond,</li><li>Unit-2 sediment pond,</li><li>Unit-3 collecting ponds (two)</li></ul>
Rainfall and snow melt wastewater	<ul style="list-style-type: none"><li>KPC irrigation lagoons (two),</li><li>KCC irrigation lagoon,</li><li>Unit-2 irrigation lagoon,</li><li>Eco Centre holding ponds (two)</li></ul>

TABLE №39. TOTAL DISCHARGE VOLUME BY WASTEWATER TYPE AND RECEIVING FACILITY, IN 2015-2017, M³

RECEIVING FACILITY	TYPE OF WASTEWATER	2015	2016	2017
Holding ponds	Treated domestic wastewater	66,213	62,767	63,935
Wastewater subsurface disposal sites	Industrial wastewater, process and associated formation wastewater	377,086	413,399	582,400
Terrain of Bolshoi Chagan and Atyrau Terminal OPSs	Rainfall and snow melt wastewater	3,297	5,543	2,862
Total discharge volume		446,596	481,709	649,197

The main reason of increase in wastewater discharges in 2017 was an increase in the volumes of associated water produced together with hydrocarbons.

KPO monitors the content of contaminants in generated and treated wastewater at its facilities, such as:

Treated domestic wastewater		pH, suspended solids, oil products, ammonia nitrogen, nitrates, nitrites, BOD5 (biological oxygen demand) and BOD20, total ferrum, synthetic surfactants, sulphates, chlorides, phosphates, dry residue, COD (chemical oxygen demand), dissolved oxygen
Industrial wastewater, snowmelt and rainfall wastewater		pH, suspended solids, oil products, dry residue, sulphates, chlorides, BOD, total ferrum
Process and associated formation wastewater		suspended solids, oil products, sulphides, sulphates, chlorides, hydrogen sulphide, methanol, ferrum, copper, zinc, aluminium





Unit-2 irrigation lagoon

The 2017 Environmental Emissions Permits do not specify the limits of the wastewater discharge. The limits were set for the contaminants in tonnes. Table №40 shows the amount of contaminants discharged with wastewater in the period of 2015-2017.

TABLE №40. THE AMOUNT OF CONTAMINANTS IN DISCHARGED WASTEWATER IN 2015-2017

FACILITY	LIMIT, TONNES			ACTUAL, TONNES		
	2015	2016	2017	2015	2016	2017
KOGCF	31,915.92	57,272.71	57,274.87	14,780.25	17,094.78	32,930.47
Bolshoi Chagan OPS	6.37	3.66	3.66	1.81	0.99	1.23
Atyrau OPS	5.99	2.37	2.37	0.78	0.85	1.36
TOTAL:	31,928.28	57,278.74	57,280.9	14,782.84	17,096.62	32,933.06

In 2017, the discharge of contaminants amounted to 32,933.06 tonnes, which was 1.9 times higher compared to 2016 - 17,096.62 tonnes. Of them, 28,791.17 tonnes were discharged within the MPD limits, while the excess discharge amounted to 4,141.88 tonnes. The excess discharge of contaminants results from the exceeded MPD concentration mainly on nitrates and rarely on phosphates and chlorides contained in domestic wastewater discharged into the holding ponds. The injected wastewater mainly contained excessive MPD concentrations on hydrogen sulphide and chlorides, and rarely on suspended solids, oil products and sulphates.

In 2017, the volume of injected industrial wastewater increased in 1.4 times as compared to 2016. The increase in industrial wastewater results from the increase of formation water volume appeared because of the high water cut in the Karachaganak 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 increased volume of industrial wastewater at the Industrial wastewater injection site 1 resulted in the exceeded annual MPD limits of suspended solids, oil products, hydrogen sulphide, aluminium, zinc, sulphates and chlorides, and in excessive discharges. As provided by the RoK 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 №1 is 2001 m, the depth of the wastewater subsurface disposal site № 2 - up to 2900 m.



REUSE OF TREATED WASTEWATER

In order to reduce fresh water intake for such works and operations like drilling, making drilling muds, watering of planted trees, dust suppression on roads and constructed sites, KPO uses treated domestic, production storm wastewater and storm runoffs. The wastewater is re-used at the Company facilities in line with the 2014-2017 Operating Procedure.

The volume of wastewater reused for technical needs by KPO in 2017 amounted to 11.3% of the technical water consumed from the Konchubai gully. Table №41 shows the activities that utilize treated wastewater.

TABLE №41. REUSE OF TREATED WASTEWATER IN 2015-2017, M<sup>3</sup> GRI 303-3

	2015	2016	2017
THE TOTAL VOLUME OF RE-USED TREATED WASTEWATER, INCLUDING:	31,213	48,023	50,476
For drilling and drilling mud preparation	23,744	30,655	32,130
Irrigation, hydro tests, and replenishing of fire tanks	-	1,553	6,506
Dust suppression	7,469	15,815	11,840

In 2017, the Company reused 50,476 m<sup>3</sup> of treated wastewater for technical needs, mostly for making drilling mud. In 2017, compared to 2016, the volume of reused domestic wastewater was higher with

the wastewater being used to water planted trees, refill the holding ponds of the well № 9816D for well drilling in the western part of the Field; also fire tanks were filled with wastewater.



KPO receives Eni award for the Water Reuse Project



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 Company applies the following waste management methods:

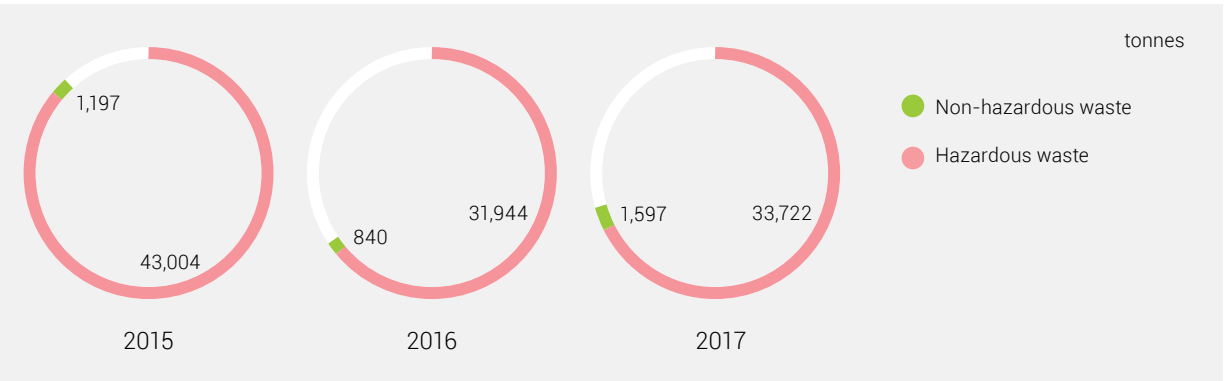
- waste recovery to process stream;
- waste treatment at the Eco Centre facilities;
- waste disposal at the Eco Centre facilities;

- waste handover to specialist contractor organizations for further disposal, processing and destruction.

The Graph № 37 shows the dynamics of waste generation for the last three years. In 2017, the volume of waste generated at KPO facilities totalled 35,319 tonnes.

The volume of waste generated at KPO facilities in 2017 increased insignificantly, if compared to 2016. Slight upward or downward fluctuations depend on regularity of certain types of operations.

GRAPH №37. THE VOLUME OF WASTE GENERATED AT KPO FACILITIES IN 2015-2017, TONNES



WASTE TREATMENT AND DISPOSAL

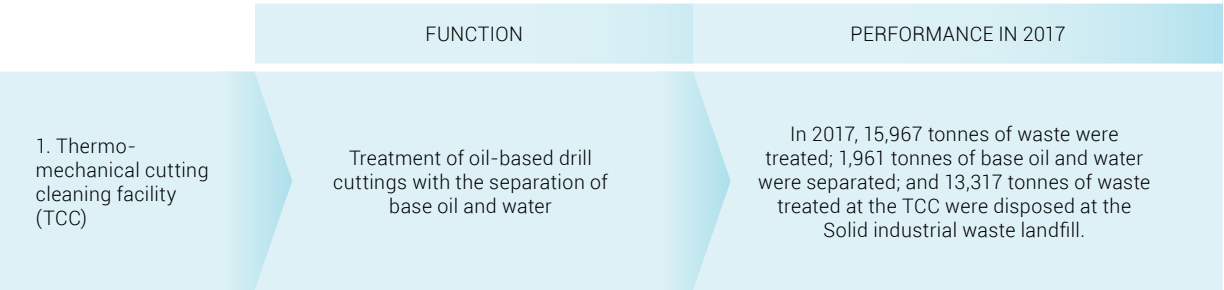
KPO Eco Center is truly considered as an example of the best drilling waste management practice in the West-Kazakhstan Oblast. The facility ensures cost-efficient and environmentally safe recycling and treatment of drilling cuttings and fluids.

The best available technologies are applied at the KPO Eco Centre facilities for treating production and consumption waste allowing

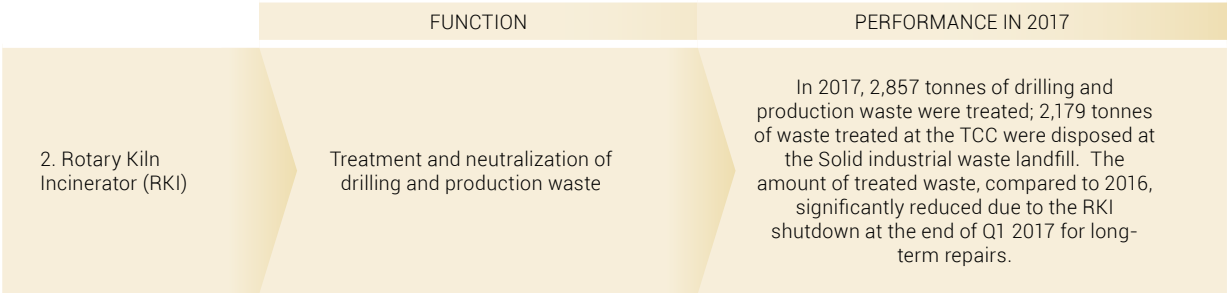
not only reducing the volume and hazards of waste, but also extracting valuable components as well as treating waste for further reuse.

Waste recovery to the process stream exercised by KPO is the best possible way to re-use the waste generated in drilling operations.

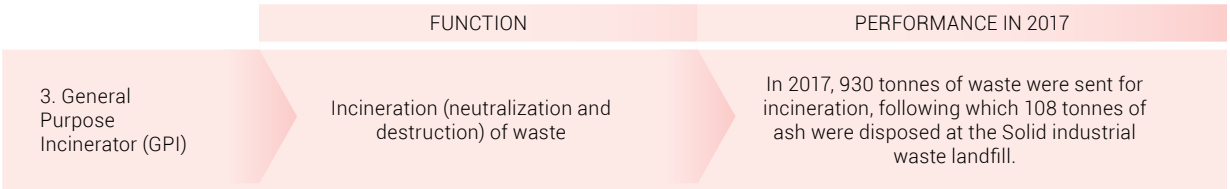
The KPO Eco Centre's waste treatment facilities are presented further.



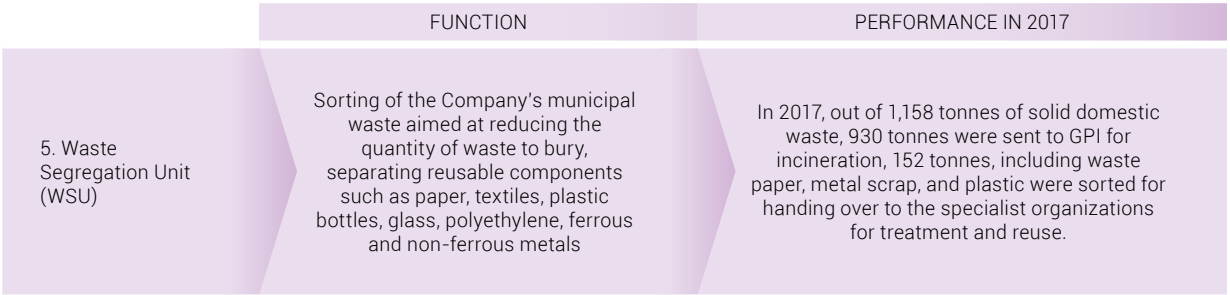
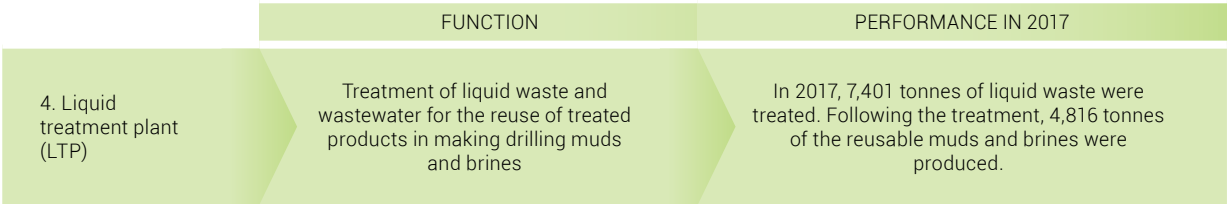
Owing to separation of base oil and water from the treated oil-based drilling cuttings, the quantity of KPO disposed waste was reduced by 17% (from the originally generated volume).



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 circa 24%. This waste is disposed at the KPO Eco Centre Solid industrial waste landfill.



Incineration of waste in the General Purpose Incinerator helps reduce the waste volume by 88% at the outlet.



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.

In 2017, owing to the segregation and sorting of waste paper, the total quantity of the Company municipal waste sent to the city dump

decreased by 102 tonnes. The collected waste paper was handed over to the local companies using the waste paper as a recyclable material to manufacture consumer goods.

Waste is disposed at the Eco Centre Solid Industrial Waste Landfill in compliance with the RoK environmental legislation.



	FUNCTION	PERFORMANCE IN 2017
6. Solid Industrial Waste Landfill	Safe disposal of solid waste generated at the Eco Centre waste treatment facilities (TCC, RKI, GPI), as well as water-based drilling muds. The Landfill has 24 cells, with a capacity of 7.5 thousand m <sup>3</sup> 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.	Starting from 2011, as such 210,891.44 tonnes of waste were buried at the landfill. The cells are shut-off once filled. In 2017, 6 cells were shut off. In total as of end 2017, 12 cells were shut off.

Solid Waste and Spent Drilling Mud Disposal Site has not been used for disposal since 2015. In 2017, the waste was continued to be moved from this Site, and after being treated at the Eco Centre facilities (TCC, RKI) the waste was disposed at the Eco Centre Solid Industrial Waste

Landfill. In 2017, 5,266.26 tonnes were sent from the Solid Waste and Spent Drilling Mud Disposal Site for treatment, while 5,733.18 tonnes were sent for treatment in 2016. Further processing of waste from the Site is planned in 2018-2019.

TABLE №42. THE VOLUME OF GENERATED WASTE, TREATED AND DISPOSED AT KPO FACILITIES IN 2017, TONNES <sup>GRI 306-2</sup>

KPO WASTE HANDLING IN 2017		GENERATED HAZARDOUS WASTE	GENERATED NON-HAZARDOUS WASTE	ACCUMULATED HAZARDOUS WASTE	ACCUMULATED NON-HAZARDOUS WASTE	PRODUCTS OF TREATMENT IN 2017	TOTAL:
1. Sorting of waste prior to the incineration in GPI	Sent to WSU	1,061.41	45.64	0.77	0	50.31	1,158.13
	Difference following the re-weighing of waste after the sorting		18.57				
	Waste sorted for handing over to the third party for further treatment		151.57				
	Waste sorted and handed over to the third party for burial		58.12				
2. Incineration	Waste sent for incineration in the GPI after the sorting		929.88				929.88
	Unsorted waste sent for incineration in the GPI	0.06	0	0	0	0	0.06
	Of which						
	Buried at the KPO Landfill after the incineration		108.4				
	Decrease of waste quantity due to incineration		821.54				



TABLE №42. THE VOLUME OF GENERATED WASTE, TREATED AND DISPOSED AT KPO FACILITIES IN 2017, TONNES <sup>GRI 306-2</sup>  
(CONTINUED)

KPO WASTE HANDLING IN 2017		GENERATED HAZARDOUS WASTE	GENERATED NON-HAZARDOUS WASTE	ACCUMULATED HAZARDOUS WASTE	ACCUMULATED NON-HAZARDOUS WASTE	PRODUCTS OF TREATMENT IN 2017	TOTAL:
3. Treatment	Sent for treatment at the RKI, TCC and LTP	17,372.39	43.44	8,041.52	0	768.10	26,225.45
	Of which						
	Reused after treatment (extracted oil base, treated brines and muds)			5,808.53			
	Further treatment			768.10			
	Water extracted at the TCC			788.16			
	Treatment losses			678.46			
	Placement in cells 35 A/B			1,828.52			
	Treated waste buried at the Landfill (TCC and RKI solid waste, water-based drill cuttings)			16,034.04			
	Waste sorted during treatment and handed over to the third party (cuttings of oil-containing drilling fluids and waste)			319.64			
	4. Waste re-use and recovery to process stream	87.23	2	1.5	0	0	90.73
	5. Neutralization at the facilities and drying at the sludge beds of KPO	735.48	0	0	0	0	735.48
	6. Burial at the KPO Landfill without treatment	2,553.50	0	0	0	0	2,553.50
	7. Accumulated by the company (waste disposed in cells 35 A/B during the year, and remaining waste stored till the handover in 2018)	9,466.86	3.14	516.22	0	1,839.26	11,825.47
	8. Waste handed over to the third party for further recycling, use, incineration and burial in 2017	2,445.62	1,502.65	157.37	46.02	529.33	4,680.99





The KPO waste is mainly produced in the process of the wells drilling and workover activities. Of note, the water or oil base of the drilling cuttings depends on the type of the drilling mud used for the well operations. In 2017, 28,719 tonnes of solid and liquid drilling waste was generated, equivalent to 81% of the total KPO waste quantity.

Table № 43 shows the main types of drilling waste broken down by the handling methods. As one may see, only water-based muds and cuttings are subject to disposal. Oil-based drilling cuttings can only be buried after treatment and extraction of the oil base.

TABLE №43. WASTE GENERATED FROM WELL OPERATIONS, BY HANDLING METHOD, 2015-2017 <sup>G4-067</sup>

WASTE DESCRIPTION	GENERATED QUANTITY, TONNES			HANDLING METHOD
	2015	2016	2017	
Spent water-based drilling mud	392	950	2,943	Treated at the Liquid Treatment Plant
	3,413	4,188	4,471	Disposal
Water-based drilling cuttings	1,200	1,994	2,554	Burial
	6	0	0	Thermal treatment in RKI
Spent oil-based drilling mud	2,216	2,156	2,043	Treated at TCC and LTP
	7	0	0	Thermal treatment in RKI
Oil-based drilling cuttings	17,688	12,026	12,808	Treated at the TCC with extraction of oil base, water and followed by the burial of the solid part
Spent brines	9,280	3,802	3,546	Treated at the Liquid Treatment Plant
	2,371	984	353	Disposal
Oil cuttings	133	60	0	Thermal treatment in RKI
	12	0	0	Treated at the TCC
Off spec oil	0	0	2	Handover to a specialist contractor

SPILLS <sup>GRI 306-3</sup>

In 2017, one case of significant condensate spill<sup>6</sup> was recorded at the territory of the Karachaganak field. The spill originated from pressure safety valve with the measured volume of approximately 1,000 litres. The condensate spilled on the ground and in storm drains was removed by means of a vacuum truck and absorbent material.

As per the IOGP, this event was classified as loss of primary containment (Tier 1). The incident was reported to the RoK regulatory bodies; the appointed incident investigation team identified the root causes. Based on the investigation results, corrective and preventive actions were taken to avoid reoccurrence of such incidents.

<sup>6</sup> 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).



BIODIVERSITY

We are committed to operate with minimal impact on biodiversity and ecosystem of the region of our presence; we are conscious that we are not the only stakeholder in this area.

The Karachaganak Oil and Gas Condensate Field (KOGCF) is located in the dry steppe zone in the north-west Kazakhstan covering an area of over 280 km<sup>2</sup>. The area of KPO operations is limited, since the official land use right has been granted for the areas located right under the field industrial facilities, pipelines and roads. The areas around KPO facilities are in the ownership and stewardship of number of other stakeholders. <sup>GRI 304-1</sup>

The past and present land use of the area has shaped the current landscape, biodiversity and ecosystems, which continue to be impacted with activities and processes at the local and global scales. The wider landscape and historical perspective is important in understanding the reasons behind the current state of the environment, and the activities and processes that continue to have influence upon biodiversity and ecosystems.

The KOGCF area is a home to a big variety of plant and animal species, amongst there are species red-listed by the International Union for Conservation of Nature (IUCN), by Kazakhstan, and species rare at the KOGCF. It is important for KPO to consider the presence of these species when planning or undertaking operations in the area, although it would be unwise considering their presence or numbers as indicators of the Company's environmental performance. This is because the species population is subject

to changes that may occur due to forces operating at global or landscape scales and are not related directly to KPO operations. Any fluctuations in the abundance of these species would need to be seen in a wider context of trends in a species population. In its turn, KPO strives to undertake its operations in such a way as not to cause direct or indirect impacts on individual species population.

KPO carries out a number of environmental monitoring and biodiversity conservation activities in order to assess the state of the environment, identify impact of operations, and develop corrective and mitigating measures.

The main document that defines the KPO principles and approaches for biodiversity conservation is the Biodiversity Action Plan (BAP). The goal of the BAP is to ensure conservation of flora and fauna species and their habitats in the KOGCF in consistency with KPO operations. <sup>GRI 103-2</sup>

In 2010, KPO carried out research studies to determine biodiversity baseline status. Scope of these surveys included the evaluation of biodiversity baseline status and the assessment of field operation impacts on it. The results of baseline studies were used later on to monitor dynamics of the flora and fauna state in the KOGCF territory.

Since 2011, the following phases of the Biodiversity Action Plan activities have been conducted:

TABLE № 44. IMPLEMENTATION OF KPO BIODIVERSITY ACTION PLAN FOR 2011-2020 <sup>GRI 103-2</sup>

PHASE	YEAR	RESEARCH STUDIES
1		Implemented:
	2011	Development of the Biodiversity Action Plan for 2012-2013
	2012	<b>Fauna monitoring</b> within the KOGCF, including the recording of rare fauna species
	2013	<ul style="list-style-type: none"><li>■ <b>Flora monitoring</b> within the KOGCF impact area by four drivers: air emissions, physical disturbance, water abstraction and grazing;</li><li>■ review of satellite images for three periods to identify changes in ecosystems;</li><li>■ mapping of the riverine ecosystems of KOGCF water bodies - the Berezovka river, the Konchubai gully.</li></ul>
2	2014	Development of the Biodiversity Action Plan for 2015-2016



TABLE № 44. IMPLEMENTATION OF KPO BIODIVERSITY ACTION PLAN FOR 2011-2020 (CONTINUED)

PHASE	YEAR	RESEARCH STUDIES
2	2015	<b>Fauna monitoring</b> , including: <ul style="list-style-type: none"><li>■ mapping of air emissions and contaminants concentration in the soil;</li><li>■ research of wildlife species diversity (mammals, birds, amphibians, reptiles) within the KOGCF with consideration of the KPO operations impact;</li><li>■ research of significant species of animals including beavers in the area of the Konchubai gully and the Berezovka river;</li><li>■ database update of species inhabiting the KOGCF area based on the results of fauna monitoring.</li></ul>
	2016	<b>Flora monitoring</b> , including: <ul style="list-style-type: none"><li>■ vegetation monitoring in respect of air emissions, physical disturbance, grazing, effects of the water abstraction;</li><li>■ further monitoring of distribution of the rare Russian Fritillary that grows in the areas of the Konchubai gully and the Berezovka river.</li></ul>
3	2017	Development of the Biodiversity Action Plan for 2018-2020 in accordance with the Guide to biodiversity action plans for the oil and gas sector published by IPIECA/IOGP
		Planned
	2018	<ul style="list-style-type: none"><li>■ The continued monitoring of fauna and flora in order to obtain the data on the dynamics of the species diversity state,</li><li>■ The continued recording of significant animal species, including beavers, on the territory of the Konchubai gully and the Berezovka River.</li></ul> <p>First time:</p> <ul style="list-style-type: none"><li>■ Ichthyofauna research study in the water bodies of the KOGCF;</li></ul>
	2019	<ul style="list-style-type: none"><li>■ The continued monitoring of flora, including rare significant species;</li><li>■ Monitoring the dynamics of coastal vegetation for the purpose of integrated assessment of biodiversity and the general state of ecosystems in the territory;</li></ul>
	2020	<p>First time:</p> <ul style="list-style-type: none"><li>■ Research on the invertebrates' species diversity of in the territory of the KOGCF.</li></ul>

Overall, it should be noted that within the Field there is a process of natural fallow<sup>7</sup> restoration as a result of cessation of agricultural use of the steppes.

In the process of monitoring the flora and fauna at the Karachaganak field being conducted since 2011, no any negative effect on the flora and fauna species' habitats from the KPO's production activities has been observed. On the contrary, the absence of agricultural activity, overall protection of the area, almost complete absence of the human

disturbance factor have contributed to creating favourable conditions for the life cycles of local flora and fauna in the field, facilitating conservation of rare species. GRI 304-2

The most significant species recorded within the KOGCF during the studies of 1990-2016 are presented in the relevant table, available on the website [www.kpo.kz](http://www.kpo.kz) in the section 'Sustainability / HSE / Protecting the Environment / Biodiversity'. All these species may also be found beyond the Karachaganak Field. GRI 304-4

<sup>7</sup> Fallow - agricultural land, formerly used as arable land, but not used for more than a year, beginning in the fall, for sowing crops and for steam. The deposit is an example of secondary (regenerative) succession.







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SOCIAL INVESTMENT

COMMUNITY ENGAGEMENT

OUR STRATEGY ON WORK WITH COMMUNITIES

KPO works to prevent or minimize the negative impacts and maximize the benefits from our presence by strengthening our 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 International Finance Corporation (IFC). KPO Stakeholder Engagement Operating Procedure, Involuntary Resettlement Operating Procedure, Grievance & Suggestion Management Procedure are guided by the IFC standards.

As mentioned in our sustainability reports for previous years, KPO pays its utmost care to establishing a dialogue with its stakeholders. This helps developing confidence and trust. As part of the existing Village Councils, 17 meetings were held in the five rural districts around the Karachaganak Field (Priuralnyi, Uspenovski, Berezovski, Zharsuatski, Pugachyovski) in 2017. Social, environmental and emergency evacuation issues were the main topics of our engagement

with communities at those meetings. The residents asked recommending the KPO sponsorship of the Akzhaik Sanatorium treatment for elderly community members, and Talap summer camp for schoolchildren, as well as the Scholarship Programme for the schoolchildren from disadvantaged families.

Furthermore, with Burlin District Akimat's support during the year 2017, KPO held nine public hearings on Environmental Impact Assessment (EIA) of its wells tie-in and construction projects. Representatives of local and regulatory authorities, media, general public and contracting companies took part in the public hearings. The participants had an opportunity to ask questions concerning the projects, waste management, land re-cultivation on completion of construction works, and answers were given to the questions.

The 2017 Social Performance Plan mainly included our assistance provided to local authorities on Phase 2 of the resettlement project of Berezovka and Bestau communities to Aksai and Araltal microregion. Please read this in more detail in Section "Resettlement of Berezovka and Bestau" on p.105.

TABLE №45. TARGETS ON COMMUNITY ENGAGEMENT

2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Implement KPO Social Performance Plan for 2017 subject to budget approval	Yes except for community development programmes not implemented due to non-approval of budget	During the year, KPO provided assistance to local authorities in implementation of the resettlement project for Berezovka and Bestau. The monitoring of grievance continued as per the procedure.	Implement the community development projects as per approved budget for 2018
Until the end of 2017 to conduct 16 Village Council sessions on environmental, social and economic aspects with local people living in five rural districts of Burlin District located nearby the Karachaganak field	Yes	The topics discussed at the Village Council's meetings included: health impact assessment held by KPO Health Department, the Scholarship Programme results, the Burlin District Akim annual report, subscription to local newspapers etc.	Hold 12 Village council meetings on social, environmental and economic topics with community members from the three rural districts (Priuralnyi, Zharsuatski, Uspenovski)
Continue community engagement according to the Community Grievance and Suggestion Management Procedure	Yes	410 grievances were logged during 2017. Feedback was provided.	Review and respond to community grievances in accordance with Community Grievance and Suggestion Procedure



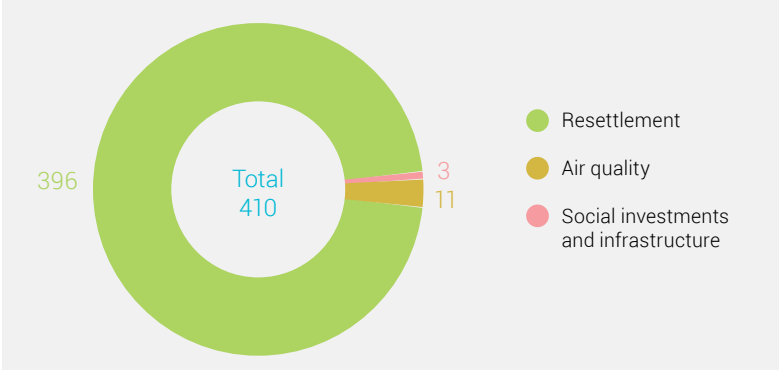
2017 TARGETS	TARGET ACHIEVEMENT	ACTIONS TAKEN IN 2017	TARGETS FOR 2018
Assist KPO management and the Burlin District authorities in implementing the second phase of Berezovka and Bestau resettlement project in line with applicable Kazakh legislation and international standards	Yes	Resettlement project for Berezovka and Bestau communities was completed at the end of 2017.	Implement the post-resettlement monitoring of the resettled households in Aksai and Araltal, reviewing their grievances as per the Grievance Procedure and support livelihood restoration

REVIEW OF COMMUNITY GRIEVANCE

The Company handles the Field-adjacent communities' grievances with special attention. The residents' complaints regarding gas odour received timely feedback from KPO Community Liaison team.

In accordance with the KPO Community Grievance Procedure 410 grievances were registered in 2017 (see the graph №38). Compared to 2016, this sharp growth of community grievances was mostly related to resettlement process of Berezovka and Bestau communities.

GRAPH №38. GRIEVANCE AND SUGGESTIONS RECEIVED FROM RESIDENTS IN 2017



The residents lodged their complaints both verbally contacting Community Liaison team and in writing. The issues raised by the residents included the rules of housing allocation, compensation details and requests to fix minor construction issues in their new housing in Araltal and Aksai.

KPO responded to grievances in different ways, providing face-to-face consultations with community members explaining the approach of housing allocation and compensations and liaising with construction companies who helped resolve the construction issues.

In accordance with Gas Odour Management Procedure for Communities Adjacent to the Karachaganak Field, the Company sought to give timely responses to community grievances. Following the grievances review, duly feedback was provided to community members through the KPO Community Liaison team.

For grievances related to gas odour KPO carries out comprehensive environmental monitoring in the aggrieved location, in accordance with its Operational Environmental Monitoring Programme. Detailed information about the data obtained from the monitoring of air condition and concentration of gas in the air is presented in the chapter "Caring for the environment" on pp.85-88.

RESETTLEMENT OF BEREZOVKA AND BESTAU COMMUNITIES

The physical resettlement of Berezovka and Bestau communities due to the planned Karachaganak field development was successfully completed at the end of 2017. All the inhabitants were either resettled to Aksai and Araltal microregion at some 5 km distance from Aksai, or received compensation. As was mentioned in our Sustainability Report for 2016, the resettlement of the two communities has been led by regional authorities of the West Kazakhstan Oblast with the funding support provided by KPO.

The resettlement was implemented in two phases. In phase 1, the vulnerable households, who wished to move earlier were relocated at the end of 2015.

Phase 2 was implemented in 2017. All remaining residents were given choices in this phase and moved either to detached houses with land plots in Araltal microregion, or to the 9-storey blocks of apartments in the Karachaganak-1 microregion of Aksai.

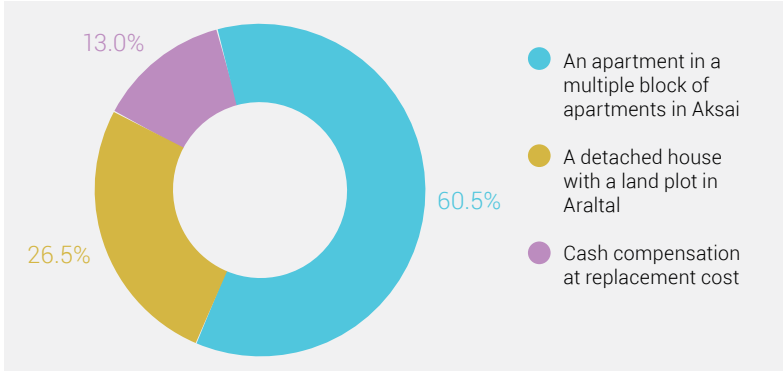
While the physical resettlement is completed, post resettlement monitoring and support are ongoing. The process has been performed in accordance with the Final Production Sharing Agreement (FPSA), the RoK legislation, the IFC (Performance Standard 5).





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GRAPH №39. PERCENTAGE OF THREE OPTIONS CHOICE FOR PHASE 2 RESETTLEMENT



To ensure compliance with the mentioned standards, independent consultants with the worldwide expertise on resettlement were involved from the very outset of the Project.

Graph №39 presents three options proposed to the resettling community members in line with above mentioned standards.

Throughout the resettlement process the residents were provided with detailed information on the available resettlement options.

The household owners and co-owners were invited for individual negotiations to discuss the proposed compensation options.

A Commission for Review of Residents Grievances and Applications was set up within Burlin District Akimat including representatives of the local authorities, public organisations, Maslikhat Deputies for Burlin District and KPO employees. The Commission reviewed the residents' grievances concerning resettlement issues, including compensations, allocation of housing and individual circumstances of the households. Residents received the replies in writing.

To review the residents' grievances related to resettlement, KPO applied its Community Grievance Procedure. It was widely communicated to resettling community members during a series of Open Days held in Berezovka and Bestau villages in 2015-2016. As part of the consultation campaign, printed leaflets with contact details of the Burlin District Akimat and the KPO Community Relations team were disseminated among community members. The residents had an opportunity to send applications and letters directly to the Burlin District Akimat. Burlin District Akimat representatives were available to meet with the resettling community members to discuss the resettlement issues.

To ensure participatory approach and inclusiveness, in 2016 a Residents' Committee was set up comprising of residents from Berezovka and Bestau communities. In 2016- 2017, the Residents' Committee members made monthly trips to construction sites to oversee the construction process of the new houses in Aksai and Araltal. Each time they were escorted by KPO representatives to show the construction process and hear the residents' opinion. Some of the comments and requests of the Residents' Committee were taken into consideration and actions were taken to implement the residents' requests. For example, new technical water wells were drilled in each resident's yard in Araltal for their domestic needs.

The social infrastructure provided for the resettled communities includes a new kindergarten for 320 children in the Karachaganak -1 microregion and a new school in Araltal for 300 pupils.

Complaint to organisation for economic cooperation and development (OECD)

In our Sustainability Reports for 2014 (p.113) and 2015 (p. 93) we notified that a complaint had been logged by the Crude Accountability NGO to the 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 substantially all claims made against the Consortium Partners, in the view of the OECD, two former households of Berezovka should qualify for compensation arrangements. In the Final Statement the NCP recommends 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".

We will provide an update on this matter in our 2018 Sustainability Report.



KPO top management visiting the resettled family



ENERGY SUPPLY TO WEST KAZAKHSTAN OBLAST

Generation and supply of the electrical power to the West Kazakhstan Oblast is made by KPO in addition to the primary power delivery to maintain operations in the Karachaganak Field. GRI 203-1

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 and the Pilot Camp. 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 WKO.

During the 2017 KPO has supplied 40-45 MW of electrical power to the regional network. The supplies of electrical power and fuel by KPO in the period of 2015-2017 are presented in Table №46.

TABLE №46. SUPPLY OF ELECTRICAL POWER AND FUEL GAS BY KPO, IN 2015-2017

DESCRIPTION	2015	2016	2017
Electrical power supplied to the WKO (in GWh) including the volumes supplied to:	233.94	294.1	307.64
■ Aksaienergo LLP	29.62	35.49	35.04
■ Batys Energoresursy LLP	204.32	258.61	272.60
Fuel gas used for generation of power supplied for WKO needs (in Mscm), including:	76.199	98.064	102.63
■ sales of own gas for power generation at the GTPP for WKO	68.05	50.808	97.72
■ purchase from third party supplier for power generation at GTPP for WKO	8.147	47.256	4.91

In 2017, the volume of electric power supplied to the WKO has increased by 4.6% as compared to the 2016. In 2017, there were concurrent works on turbine overhaul and gas flue replacement at the Gas Turbine Generator No. 1.

Due to the KPO process units' restrictions, part of the electrical power for the WKO is generated using the gas from a third-party supplier. Repair of the site 5-339 for gas purification conducted at the KPC in

2016 allowed to minimize technical limitations and to reduce the Company's consumption of third-party gas in 2017 accordingly.

In the reporting year, KPO did not experience production losses due to the influence of external power grids. Increased reliability of energy supply was facilitated by the earlier KPO investments in the upgrade of external grids (see Sustainability Reports for 2014 (p.133) and 2015 (page 100)).



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SUPPORTING SOCIAL INFRASTRUCTURE GRI 203-1

KPO implements social and infrastructure projects in the West Kazakhstan Oblast (WKO) 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 USD 20 mln per year for social and infrastructure projects in the WKO. For the period from 2014 to 2016, the JOC took a decision to allocate additional funding of USD 30 mln for social and infrastructure projects in Burlin district, USD 10 mln each year, actual spend of which continued throughout 2017.

The list of social projects to be implemented is annually approved between KPO and the WKO Akimat based on the priorities of the

Oblast's social development. The list is compiled by the WKO 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 project's design, procurement and management of the full process up to completion of construction and the subsequent handover to the Republic of Kazakhstan. 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.

The list of social projects completed in 2017 is provided hereunder in Tables №47 and №48.

TABLE №47. SOCIAL INFRASTRUCTURE PROJECTS IN URALSK COMPLETED BY KPO IN 2017

AREA	PROJECT NAME	PROJECT DESCRIPTION	ACTUAL COSTS (MLN KZT)*
Construction and Repair of Roads	Capital repair of the motor road at Azerbaijanskaya Street from Zhangir Khan Street to Entuziastov Street	The project was implemented in order to ensure restoration of the initial condition of the asphalt-concrete pavement for the comfortable flow of the vehicles.	352.6
	Capital repair of Chagano-Naberezhnaya Street from Saraishyk Street to Pugachev Street	The project was implemented due to the unsatisfactory condition of the road surfaces, in order to ensure the safe traffic flow at the city roads. Chagano-Naberezhnaya Street is one of the important city streets with access to the central micro-regions of the city.	240.1
	Repair of the road at Depovskaya Street, Vostochnaya Street from 2nd base to Depo overpass	The project is aimed at repair of the road pavement and engineering lines crossing the projected road section for the comfortable traffic and pedestrian flow.	247.8
	Capital repair of Urdinskaya street from Gagarin Street to Dzhambulskaya street in Uralsk	The purpose of the capital repair is restoration of the operation characteristics of the asphalt concrete pavement and road structures.	103
	Medium repair of the road at Zhangir Khan Street from Ch.Naberezhnaya Street to Azerbaydzhanskaya Street in Zachagansk village	The project is aimed at repair of the road pavement at one of the important city streets with heavy traffic flow for the convenience of the city residents.	340.8



TABLE №47. SOCIAL INFRASTRUCTURE PROJECTS IN URALSK COMPLETED BY KPO IN 2017 (CONTINUED)

AREA	PROJECT NAME	PROJECT DESCRIPTION	ACTUAL COSTS (MLN KZT)*
Construction and Repair of Roads	Construction of driveways in 7-9 micro-districts in Uralsk, WKO (Street No.1)	Street No.1 was constructed in order to connect Abulkhair Khan Avenue and Moscovskaya Street in the newly-build 7 and 9 micro-districts. The length of the street is 761 meters.	288.5
	Capital repair of the road at Shevchenko, Isayev Streets from Aitiyev Street to Nurpeisova Street in Uralsk	The purpose of the capital repair is restoration of the operation characteristics of the asphalt concrete pavement and road structures.	87.5
	Capital repair of the intra-village motor roads in Dar'inskoye village, Zelenov district	The project is aimed at repair of the road pavements for the improvement of the infrastructure in Dar'inskoye village.	350.4
Civil and Industrial Construction	Improvement of the right bank of Chagan river in the City Park of Culture and Recreation – Phase 2	The project was aimed at ensuring conduction of cultural-mass and sports events for the city residents. This project also foresees arrangement of bicycle lanes on the territory of right bank, provision of access road to the city park with a parking area for 100 vehicles.	307.5**
	Replacement of street lighting at the road to the Airport: ■ from the road Podstepnoye – Aksai to the Airport building, ■ from 261 km to the turning to the Airport, ■ from 261 km to the stella "Europe-Asia"	The project was implemented due to the worn-out condition of the overhead power lines in the specified areas with required replacement of them as per results of the conducted survey.	405.7
	Replacement of street lighting at Saraishyk street from Petrovskiy street to Daumov Street	The project was implemented due to the worn-out condition of the overhead power lines in the specified areas with required replacement of them as per results of the conducted survey.	105.4
Total			2,829.3

\* Amounts are VAT including;

\*\* In 2017, payment for this project was not made in full.



Social investment  
Community engagement  
Energy supply to WKO  
Supporting social infrastructure  
Supply chain  
Local content development

TABLE №48. SOCIAL INFRASTRUCTURE PROJECTS IN THE BURLIN DISTRICT OF WKO COMPLETED BY KPO IN 2017

AREA	PROJECT NAME	PROJECT DESCRIPTION	ACTUAL COSTS (MLN KZT)*
Construction and Repair of Roads	Arrangement and reconstruction of the road bed and road pavement at the Street named after Tsvilling in Aksai	The purpose of the project is reconstruction of the motor road in order to bring it to the functional state, as well as to refine the missing components of the road.	261.2
	Major overhaul of Zheleznodorozhanaya Street from Sadovaya Street to Zapadnaya Street in Aksai	The project was implemented in order to ensure restoration of the initial condition of the asphalt-concrete pavement for the comfortable flow of the vehicles.	262.5
	Major overhaul of Mametova Street in Aksai	The aim of the project is to arrange asphalt concrete pavement at streets and sidewalks in one of the important city streets.	221.6
Civil and Industrial Construction	Construction of Sports and Health Centre in Aksai	The project is aimed at ensuring development of physical education and sports in the city, as well as at strengthening the health of Aksai residents. The project envisaged construction of a sports hall with auxiliary facilities, construction of administrative building, modular boiler house, arrangement of open universal grounds for volleyball, basketball, tennis, construction of the football field with stands for 1,200 seats.	867.4
	Capital repair of Children's School of Arts building in the Burlin district, WKO	Capital repair of the building of "Children's Art School" foresees construction of a two-storey school building aimed at ensuring comprehensive development of schoolchildren.	116
	Total		1,728.7

\* Amounts are VAT including



KPO representatives at 'WestKazInvest-2017' IV International Investment Forum

SUPPLY CHAIN GRI 102-9

A sustainable supply chain is required to support KPO in the development of the Karachaganak Field in an environmentally and socially sound manner.

KPO is one of the most important participants of economic activities in West Kazakhstan oblast that contributes in sustainable development of the region. It is being delivered through KPO and Parent Companies in support of the Republic of Kazakhstan government programs and initiatives on Local Content and Industrial-Innovative Development of the country.

Supply Chain works closely with Local Business Development within the organization to support delivery of KPO Social Projects. More details are covered in the specific sections of this report.

Procurement of goods, works and services is performed in compliance with the requirements of the Republic of Kazakhstan legislation, Final Production Sharing Agreement (FPSA) and approved internal tendering procedures. Our principles include acting in an objective, non-discrimination and consistent manner and are fundamental on how KPO contract and do business with contractors and suppliers. More detailed information and a description of the KPO procurement process is provided in the Sustainability Report 2016 on p.105. GRI 103-2

KPO aims to work with contractors and suppliers that behave in a safe, economical, environmental, ethical and socially responsible way of providing goods, works and services for development of the Karachaganak Field.

A network of contractors and suppliers consists of the companies and organizations originated in Republic of Kazakhstan, Italy, UK, France, Germany, RF, USA, Netherlands, Norway, etc., that benefit the experience and technologies being brought into Karachaganak Field.

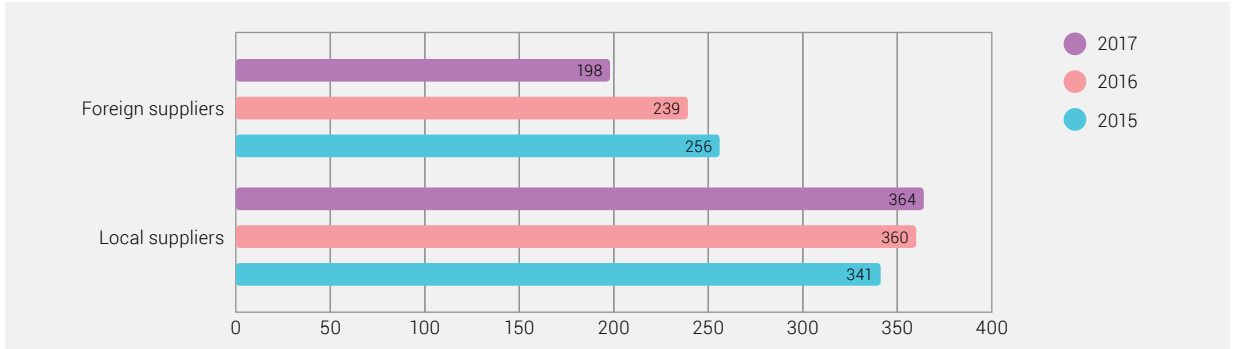
Since the inception of the Karachaganak Project and until the end of 2017, 8,500+ potential suppliers of goods, works and services have been registered in the KPO Vendor database.

In 2017, contracts and contract amendments have been awarded to 562 contractors and suppliers in overall:

- 364 of which (65%) - local entities;
- 198 (35%) - foreign entities not registered on the territory of Republic of Kazakhstan and foreign entities registered on the territory of RK through branches.

The following graph provides the proportion of local and foreign vendors engaged in KPO activities in the period from 2015 to 2017.

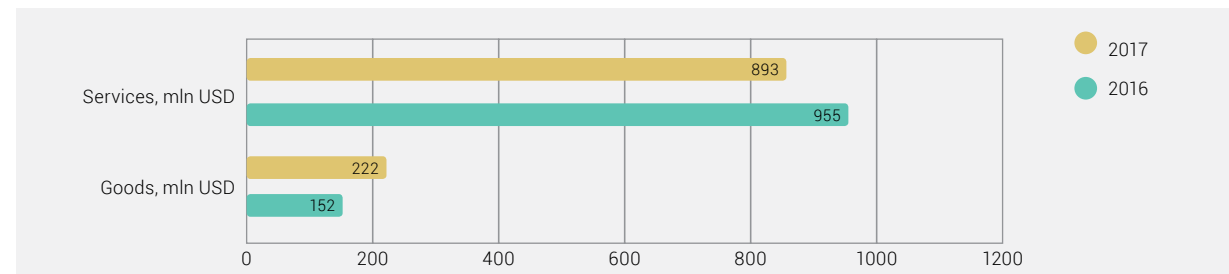
GRAPH №40. CONTRACTORS AND SUPPLIERS ENGAGED BY KPO IN 2015-2017







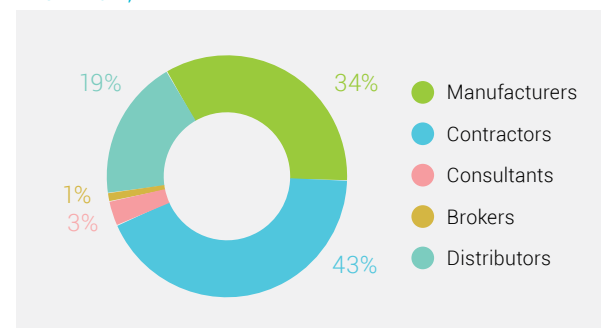
GRAPH №41. DYNAMICS OF TURNAROUND BY AWARDED VALUES THROUGH CONTRACTS AND CONTRACT AMENDMENTS, 2016-2017



Note: The 2016 data previously published referred to awarded values for new contracts (without contract amendments).

The following graph shows the distribution of suppliers by type of vendor.

GRAPH №42. CONTRACTORS AND SUPPLIERS ENGAGED BY KPO IN 2017, BY TYPE



#### Registration in the Alash Unified Database for potential suppliers

At the initiative of the Ministry of Energy of the Republic of Kazakhstan and Oil & Gas operators, the Alash Unified Database has been implemented in the Republic of Kazakhstan for the purpose of local content development and provision of 'single-window' principle for Kazakh suppliers to invest into market transparency and visibility for major Oil & Gas operators of Kazakhstan, such as – KPO, NCOC and TCO, as well as other major associations or companies operating or plan to operate in Kazakhstan oil and gas sector.

The registration process is supported by Algoritmi KZ LLP, the operator of the Alash Unified Database. Roll out has been started in February 2016 and progressed within 2017.



KPO Local Content Forum in Uralsk



## LOCAL CONTENT DEVELOPMENT GRI 203-2

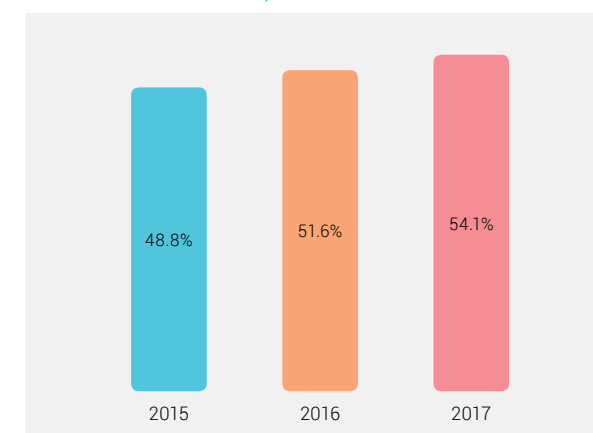
KPO seeks to maximize local content in development of the Karachaganak field. The main goal of the Company's policy in local content enhancement is reduction of import and increase of domestic goods, works and services procured for the Karachaganak project needs. KPO Local Content development programme and actions are developed in line with the State and Industrial Programmes of the Republic of Kazakhstan, such as the Industrial – Innovative Development Programme, programmes for development of machine-building industry, industrialization and digitalization. GRI 103-2

Our Local Content Policy is aimed at maximum contribution to sustainable development both of the Kazakhstan economy in general and the West Kazakhstan Oblast (WKO) in particular by pursuing the following objectives:

- Identify and implement the potential of local producers for the needs of KPO;
- Assist local producers in mastering manufacturing of new goods and equipment in Kazakhstan, including high-tech manufacturing;
- Support local suppliers in setting up joint ventures in order to transfer technology and create jobs;
- Promote professional growth of national personnel through training;
- Ensure close cooperation with governmental authorities and associations for local content development.

In 2017, the Local Content share in Karachaganak project reached 54.1% (almost USD 400 mln) as shown in the graph. Since the beginning of the FPSA in 1997 through end of 2017 the Local Content share in Goods, Works and Services exceeded USD 6.54 bln. GRI 204-1

In the 2017 reporting year, KPO continued work on implementation of several long-term initiatives within the 2016-2017 Local Content Development Programme: the Aktau Declaration on joint actions of

GRAPH №43. SHARE OF LOCAL CONTENT OUT OF TOTAL KPO PURCHASES IN 2015-2017, % GRI 204-1

the major oil and gas operators (KPO, NCOC, TCO) and NC KazMunaiGas JSC and the Memorandum of Understanding (MoU) on the national industry development between KPO, PSA LLP and KazEnergy Association.

As part of the Aktau Declaration implementation, KPO has localised 13 categories of goods, works and services (TOP-10 GWS), including maintenance services (consisting of 8 subcategories of maintenance works), work on localization of manufacturing of 3 more types of goods is ongoing.

Additionally, the following agreements were signed in 2017:

- The Agreement of Mutual Understanding between WKO Akimat and KPO on setting the local content targets for 2017.
- Memorandum of Understanding between KPO, WKO Akimat, SPK Oral JSC and ZeniTekhServis LLP on cooperation in the field of machine building for the oil & gas industry.

On 22<sup>nd</sup> May 2017 in Uralsk KPO held a Local Content development forum in order to familiarize local manufacturers and service providers with KPO projects, pre-qualification process procedure, early tender and trial order mechanism, including 10 most popular types of goods, works and services (TOP-10 GWS). The forum was supported by the RoK Ministry of Energy, PSA LLP, and WKO Akimat with the participation of local companies, representatives of Atameken National Chamber of Entrepreneurs, KazEnergy and KazService associations.

In the period of 2016-2017 KPO continued working on localization of goods, works and services (GWS) at Karachaganak:

- 10 additional items of goods and materials previously imported to the RoK have been localized with overall value of USD 21 mln, and 21 types of works and services previously performed by international contractor have been localized worth over USD 390 mln;
- The Programme promoted establishment of 9 joint ventures and consortia with participation of local oil service companies,
- Facilitated attraction of inward investment circa USD 62 mln and creation of over 200 permanent jobs.

Of note, the GWS within the TOP-10 coincide with the GWS established by the MoU on the national industry development and the Well Operations Roadmap.

One of the most effective tools promoting development of local content and familiarization with the capabilities of local producers are visits to the RoK regions in the framework of interregional cooperation. Development of such cooperation allows KPO to see at first hand the products and capabilities of regional manufacturers and service providers. Regional companies, in turn, receive information about the current and future KPO needs, including technical specifications, as well as familiarize with the procurement, local content requirements, etc. Based on the results of work performed in 2016-2017 in the framework of interregional cooperation, KPO concluded 10 contracts.



In 2017, in close cooperation with the WKO Akimat and the PSA Authority, KPO delegation visited Aktyubinsk Oblast, South Kazakhstan Oblast and Almaty city to familiarize with the regional potential in manufacturing of goods, and provision of works and services.

The table below shows the activities carried out in 2017 in the framework of interregional cooperation:

TABLE № 49. ACTIVITIES CARRIED OUT IN THE FRAMEWORK OF INTERREGIONAL COOPERATION, 2017

VISITED REGION	OUTCOMES
Aktyubinsk Oblast	A presentation was made for local enterprises on KPO activities and a visit was organized to the exhibition of large enterprises of the region.
South Kazakhstan Oblast	<ul style="list-style-type: none"><li>■ A Memorandum for supply of Kazakhstani transformers for the KGDBN project was signed with JSC Kentau Transformer Plant.</li><li>■ KPO cement works contractor Baker Hughes and Shymkentcement signed a contract for domestic oil well cement to be supplied for the Karachaganak project needs. Local cement was successfully tested by KPO when cementing of the upper sections of well No.9856. Its successful localization made it possible to replace international oil-well cement at the Karachaganak project, which attracted interest of other oil and gas operators.</li><li>■ KPO visited the Karlskrona pump producing plant and the plant of 'Hill Corporation' LLP that produce motor and lubricating oils.</li></ul>
Almaty	<ul style="list-style-type: none"><li>■ A contract between KPO and Schneider Electric was signed for manufacture and supply of a modular power substation for the KGDBN project. Under this contract, for the first time on the territory of the Republic of Kazakhstan, modular electrical substations, previously supplied from abroad, will be manufactured. This will ensure jobs for over 100 citizens of the RoK for the period of manufacturing the KPO order.</li><li>■ A contract between KPO and Bureau Veritas Kazakhstan LLP was signed for training and certification of ASME/API of WKO companies.</li><li>■ A contract between KPO and KazSPO-N LLP was signed for supply of fireproof PPE manufactured locally. KPO initiated mastering of fireproof clothing manufacturing in the RoK by conducting an early tender. This example, in turn, opens the door for the local manufacturers to supply fireproof PPE to other major regional subsurface users in Kazakhstan and to the world markets.</li><li>■ KPO visited PSI group steel Fabrication yard, as well as KazSPON PPE sewing facility.</li></ul>

Local companies' competence development

In 2017, KPO arranged the IPMA Project Management training for supervisory staff of 10 local companies as a part of suppliers' development initiative.

In order to increase the competitiveness of local suppliers and improve the quality of goods and services supplied to the Company, an integrated implementation of management standards ISO 9001:2015, ISO/TS 29001:2010, ISO 14001:2015, OHSAS 18001:2007 was organized for seven local companies from amongst current and potential suppliers in Uralsk, Aksai and Atyrau.

In the past year, KPO initiated activities on capacity development of the WKO machine-building enterprises by facilitating the adoption and certification of ASME international standards applied in pressure vessels manufacturing. Two machine-building enterprises of the WKO JSC Aksaigasservice and JSC Zenit Uralsk Plant were successfully pre-qualified by an independent auditor for further preparation for ASME certification (Section VIII, Division 1) and started implementation and certification to comply with ASME requirements.



Earlier there were launched a few joint projects aimed at transferring advanced technologies and strengthening the industrial capacity of Kazakhstan. In 2017, KPO could see the latest results of this work.

CASE STUDY №1 (CONTINUED FROM 2015):  
Implementation of Early Tenders and Trial Orders under the Memorandum of Understanding (MoU) on national industry development

In support of the initiatives of the Government of the Republic of Kazakhstan on development of production and service clusters, a Memorandum of Understanding was signed between KPO, PSA LLP and KazEnergy Association in 2014. The targets in this document included: identification of goods, works and services (GWS) at early stages of KPO projects, creation of the GWS clusters and initiation of implementation of early tenders and/or placement of trial orders among the Kazakhstani suppliers. Under this initiative, in 2017, KPO achieved the following results:

- In July 2017, KPO awarded a long-term contract to ZhigerMunayService LLP for supply of drilling bits manufactured in Kazakhstan. Based on excellent technical performance of the second modified drilling bit testing, KPO is considering a possibility of localization of smaller size drilling bits in future.
- In August 2017, based on the early tender results KPO signed a long-term contract with KazSPO-N for supply of fire-resistant winter and summer coveralls and winter jackets to be manufactured locally, with 70% local content share.
- In August 2017, as a part of Energy Saving Programme, KPO awarded a long-term contract to Prolux LED LLP for development of local manufacture and supply of energy-saving lighting lamps to KPO with the purpose of replacing the current light lamps in KPO facilities. In September 2017, the first batch of energy-saving lamps manufactured in Kazakhstan was supplied and installed at KPO.
- As per the Local Content Development Programme for 2016-2017, KPO initiated localization of services for repair and rewinding of explosion-proof electric motors in Karachaganak. Previously a foreign contractor performed such services. KPO has identified a potential Kazakhstan provider, which expressed its interest in localization and construction of a new explosion proof Electrical Equipment Maintenance Service Centre in Atyrau. Following alignment with the MoU working group, in March 2017 a long-term contract was concluded with the Edil-Oral.kz LLP service centre for the above services.

Since signing of the MoU on national industry development, KPO has successfully localized 7 types of Goods and 1 type of Service by applying Early Tender and Trial orders mechanisms. The launch of the initiative was reported in the KPO Sustainability Reports for 2015 and 2016.

CASE STUDY №2 (CONTINUED FROM 2015):  
Well Operation Roadmap initiative

The Well Operation Roadmap was developed by KPO to promote a well operations technology transfer to local oil service companies and their development by creating partnerships between Kazakhstan companies and international contractors. More details about the initiative are provided in the previous Sustainability Reports for 2015-2016.

The KPO Roadmap implementation resulted in localization of 6 types of works and services, award of 6 contracts to 4 joint ventures for a total amount of circa USD 224 mln.

In addition to the Roadmap, KPO introduced partnership requirement for other well operations tenders and subsequently additional 11 types of well operations works and services were localized.

KPO expects that current achievements will enhance the competitiveness of local suppliers to meet KPO well operations services requirement.



GRI STANDARDS CONTENT INDEX GRI 102-55, 102-54

KPO Sustainability Report 2017 has been prepared in accordance with the GRI Standards 'Core' option. GRI 102-54

UNIVERSAL STANDARDS		
GRI STANDARD	DISCLOSURES	REFERENCES, COMMENTS, OMISSIONS
GRI 101 Foundation 2017		
GRI 102 GENERAL DISCLOSURES 2017		
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 2017 (p.23)
102-3	Location of headquarters	Our contacts (p.134), Overview of operations (p.20)
102-4	Location of operations	Overview of operations (p.20)
102-5	Ownership and legal form	Governance structure (pp.26-27)
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.59); ii. KPO facilities (pp.20-21), Karachaganak Operating Facilities in 2014 (Sustainability Report 2014, pp.12-15); iii. Not reported due to FPSA confidentiality restrictions; iv. Not applicable; v. Operations in 2017 (p.23).
102-8	Total number on employees and other workers, by employment contract, by gender, by employment type, by region.	People and skills (p.59), Map (p.60)
102-9	Supply chain	Supply chain (p.111)
102-10	Significant changes to the organization and its supply chain	No significant changes
102-11	Precautionary principle or approach	2017 and 2018 HSE Improvement plans (pp.40-41); Asset Integrity (pp.46-51); HSE Engagement and communication (p.42); HSE Cards programme (pp.42-43); Emergency response management (pp.44-45); Community preparedness (p.45)



UNIVERSAL STANDARDS		
GRI STANDARD	DISCLOSURES	REFERENCES, COMMENTS, OMISSIONS
102-12	External initiatives	Our strategy on work with communities (p.104)
102-13	Membership of associations	KPO is a member of KazEnergy Association. 'Overview of stakeholder engagement in 2017' (Table №2, p.14); Business partnerships and membership in associations (p.9 of the Sustainability Report 2015).
102-14	Statement from senior decision-maker	Letter from General Director (p.6)
102-15	Key impacts, risks, and opportunities	Risk Management (p.30), Letter from General Director (p.6), Executive summary (pp.7-8), HSE Risk Management (p.38).
102-16	Values, principles, standards, and norms of behavior	Ethical conduct (pp.31-32)
102-17	Mechanisms for advice and concerns about ethics	Hotline and other compliance measures (pp.31-32), Employee relations (p.67)
102-18	Governance structure	Governance structure (pp.26-29)
102-40	List of stakeholder groups	Our stakeholders (Pic.№2, p.11)
102-41	Collective bargaining agreements	Employee relations (p.67)
102-42	Identifying and selecting stakeholders	Stakeholder engagement (pp.11-17)
102-43	Approach to stakeholder engagement	Material topics (p.9), Stakeholder engagement (pp.11-17)
102-44	Key topics and concerns raised	Material topics (pp.9-10), Stakeholder engagement (pp.11-17). Key issues raised by stakeholder's groups are presented in the following chapters: • Parent Companies, PSA LLP Authority - in 'Governance and management approach' (pp.26-29); • Local Communities, NGOs - in 'Community engagement' (pp.104-106); • Employees - in 'People and skills' (pp.58-70); • Students - in 'KPO partnership with Kazakhstan universities' (p.71);





UNIVERSAL STANDARDS		
GRI STANDARD	DISCLOSURES	REFERENCES, COMMENTS, OMISSIONS
GRI 102 GENERAL DISCLOSURES 2017		
102-44	Key topics and concerns raised	<ul style="list-style-type: none"><li>• State bodies - in 'Community preparedness' (p.45), 'Security' (pp.51-52), 'Environmental Protective Measures Plan for 2017' (pp.76-78);</li><li>• Counterparties - in 'Supply chain' (pp.111-112), 'Local content development' (pp.113-115);</li><li>• Business partners - in 'Local content development' (pp.113-115);</li><li>• Trade Unions - in 'Employee relations' (p.67)."</li></ul>
102-45	Entities included in the consolidated financial statements	This Report covers the Operations and Projects of the KPO B.V. Branch in Kazakhstan
102-46	Defining report content and topic Boundaries	Material topics (pp.9-10)
102-47	List of material topics	Material topics (pp.9-10)
102-48	Restatements of information	HC production data in 'Dynamics of energy intensity in 2015-2017' (Graph №35, p.89), contract values in 'Dynamics of turnaround by awarded values through contracts and contract amendments, 2016-2017' (Graph №41, p.112)
102-49	Changes in reporting	No significant changes
102-50	Reporting period	Letter from General Director (p.6), 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	Feedback Form (pp.135-136), Our contacts (p.134)
102-54	Claims of reporting in accordance with the GRI Standards	Global Reporting Initiative (p.5), GRI Standards Content Index (p.116)
102-55	GRI Standards Content Index	GRI Standards Content Index (pp.116-127)
102-56	External assurance	Independent Assurance (p.5), Assurance Statement (pp.128-129).



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
GRI 200 ECONOMIC TOPICS		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its boundary	KPO impact boundary covers West Kazakhstan Oblast. Report scope and boundaries (p.5), maps on pp. 22 and 60, Operations Overview (p.20)
	103-2 The management approach and its components	Annex 5 to the FPSA: 'Supporting social infrastructure' (p.108), FPSA and tender provisions: 'Supply chain' (p.111), FPSA provisions on local content increase: KPO Local Content Policy (p.113), Management systems (pp.28-29)
	103-3 Evaluation of the management approach	Assurance (p.30)
Market Presence		
GRI 202 Market Presence 2017	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	Compensations and benefits (p.69). There are no differences in salary levels by sex. Karachaganak oil & gas condensate field located in the Western Kazakhstan Oblast (Republic of Kazakhstan) relates to 'significant location of operations'.
	202-2 Proportion of senior management hired from the local community	Development of the national personnel (p.62); By 'senior management' is meant to be Executive management and their deputies' given in category 1+2 in 'Implementation of KPO Plan for Local Content Increase in Staff in 2017, by categories of employees (Tab. №21, p.62). 'Local' in the context refers to national employees, the citizens of the Republic of Kazakhstan.
Indirect Economic Impacts		
GRI 203 Indirect Economic Impacts 2017	203-1 Infrastructure investments and services supported	Energy supply to WKO (p.107), Supporting social infrastructure (pp.108-110)
	203-2 Significant indirect economic impacts	Local content development (pp.113-115)
Procurement Practices		
GRI 204 Procurement Practices 2017	204-1 Proportion of spending on local suppliers	Share of Local Content out of total KPO purchases in 2015-2017 (Graph №43, p.113)



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Anti-corruption		
GRI 205 Anti-corruption 2017	205-2 Communication and training about anti-corruption policies and procedures	Code of conduct and anti-corruption awareness and training (p.31); Anticorruption due diligence process (p.32)
Reserves		
G4 O&G Sector Disclosures	G4-OG-1 – Volume and type of estimated proved reserves and production (partial disclosure)	Overview of operations (p.20)
GRI 300 ENVIRONMENTAL TOPICS		
GRI 103 Management Approach 201	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers West Kazakhstan Oblast. Caring for the environment (p.72)
	103-2 The management approach and its components	Caring for the environment (pp.72-103), Our environmental targets (Tab. №24, pp.72-75), Environmental management systems (p.75); Energy management system (p.76); Environmental Protective Measures Plan for 2017 (p.76), Expenses for implementation of the 2017 EPMP (Tab. №26, p.77), Implementation of KPO Biodiversity Action Plan for 2011-2020 (Tab. №44, pp.101-102)
	103-3 Evaluation of the management approach	Certification audit for compliance to the ISO 14001:2015 international standard (p.75); Certification audit for compliance to the ISO 50001:2011 standards 'Energy management system' (p.76), internal audits (pp.75-76); Environmental Management System (p.78).
Energy		
GRI 302 Energy 2017	302-1 Energy consumption within the organization	Energy consumption (p.89). KPO applies standards, methods and conversions regulated by the RoK normative documents in energy saving and energy efficiency. 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 2015-2017 (Graph №35, p.89)



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Water		
GRI 303 Water 2017	303-1 Water withdrawal by source	KPO's water consumption in 2015-2017 broken down by sources (Tab. №37, p.91)
	303-2 Water sources significantly affected by withdrawal of water	Water withdrawal does not significantly affects the water sources
	303-3 Water recycled and reused	Reuse of treated wastewater in 2015-2017 (Tab. №41, p.95). Approximately 11.3% of the water taken from surface sources was reused in 2017.
Biodiversity		
GRI 304 Biodiversity 2017	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Biodiversity (p.101)
	304-2 Significant impacts of activities, products, and services on biodiversity	No significant impacts. Biodiversity (p.102)
	304-3 Habitats protected or restored (partial disclosure)	The third party wasn't involved. The results of the EP measures implemented in KPO in 2017 (p.78)
	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 2017	305-1 Direct (Scope 1) GHG emissions	Direct greenhouse gas emissions (p.82)
	305-2 Energy indirect (Scope 2) GHG emissions	Indirect greenhouse gas emissions are not considered material due to their very small number (less then 0.01%).
	305-4 GHG emissions intensity	Specific greenhouse gas emissions (p.83)
	305-5 Reduction of GHG emissions	Reduction of greenhouse gas emissions (pp.83-84)



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Emissions		
GRI 305 Emissions 2017	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Air emissions (p.79)
Effluents and Waste		
GRI 306 Effluents and Waste 2017	306-1 Water discharge by quality and destination	Discharge of treated wastewater (pp.92-94)
	306-2 Waste by type and disposal method	Waste disposal 'The volume of generated waste, treated and disposed at KPO facilities in 2017' (Tab.№42, pp.98-99)
	306-3 Significant spills	Spills (p.100)
	306-4 Transport of hazardous waste	KPO does not have any imported or exported wastes
G4 O&G Sector Disclosures	G4-OG 6 Volume of flared and vented hydrocarbon	Gas flaring (p.81)
G4 O&G Sector Disclosures	G4-OG 7 Amount of drilling waste and strategies for treatment and disposal	Waste generated from of well operations, by handling method, 2015-2017 (Tab. №43, p.100)
Environmental Compliance		
GRI 307 Environmental Compliance 2017	307-1 Non-compliance with environmental laws and regulations	Environmental fines (p.78). There were no cases of non-monetary sanctions applied to the Company during the reporting period. KPO Environmental Protective Measures Plans for 2017 and issued Permits (Tab.№25, p.76).



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
GRI 400 SOCIAL TOPICS		
Employment		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Kazakhstani citizens, in particular of the West Kazakhstan Oblast. People and skills (p.58).
	103-2 The management approach and its components	Our targets in personnel development and remuneration (Tab.№20, p.58); Human Resources Management System manual (p.29); Competency management system (p.66); KPO Programme for Increasing Local Content in Staff (p.62); Collective Agreement for 2016-2018 (p.67).
	103-3 Evaluation of the management approach	Optimization of organizational structure and work processes (p.69), Annual Personnel Development Review (p.69), Competency management system (p.66); Collective Agreement (p.67), Dynamics of local personnel turnover, 2015-2017 (Graph №20, p.61); Implementation of Plan for Local Content Increase in Staff in 2017 by categories of employees (Tab. №21, p.62).
GRI 401 Employment 2017	401-1 New employee hires and employee turnover	People and skills (pp.60-61): Graphs on personnel turnover №№ 18, 19, 20)
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Compensations and benefits (p.68)
	401-3 Parental leave	Compensations and benefits (p.69), Parental leaves at KPO for 2017 (Graph №26, p.69)
Labor/Management Relations		
GRI 402 Labor/ Management Relations 2017	402-1 Minimum notice periods regarding operational changes	Employee Relations (p.67)
Occupational Health and Safety		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers KPO facilities at the Karachaganak field of the West Kazakhstan Oblast and export pipeline in Atyrau Oblast. The topic covers KPO and contractors.





TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Occupational Health and Safety		
GRI 103 Management Approach 2017	103-2 The management approach and its components	Our targets in Safety (Tab. № 7, pp. <a href="#">33-34</a> ); Integrated HSE Management System (p. <a href="#">38</a> ); Targets in health protection (Tab.№16, p. <a href="#">53</a> ), Health protection programmes and initiatives (pp. <a href="#">53-57</a> ).
	103-3 Evaluation of the management approach	Certification audit for compliance of the international standards ISO 14001:2015 and OHSAS 18001:2007 (p. <a href="#">38</a> ); Peer Comparison (p. <a href="#">37</a> ); Safety performance (p. <a href="#">35</a> ); KPO performance vs IOGP, 2005-2017 (Graph №3, p. <a href="#">37</a> ); 2017 HSE Improvement Plan (pp. <a href="#">40-41</a> ); HSE Cards Programme (pp. <a href="#">42-43</a> ).
GRI 403 Occupational Health and Safety 2017	403-2 Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Safety performance (pp. <a href="#">35-39</a> ), Protection of health (pp. <a href="#">54-55</a> )
	403-3 Workers with high incidence or high risk of diseases related to their occupation	Management of ill health (p. <a href="#">54</a> ); Absenteeism monitoring (p. <a href="#">54</a> ); Occupational Diseases (p. <a href="#">55</a> ); Health risk assessments (p. <a href="#">55</a> )
	403-4 Health and safety topics covered in formal agreements with trade unions (partial disclosure)	Health risk assessments (p. <a href="#">55</a> )
Training and Education		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Kazakhstani citizens. Training and development (pp. <a href="#">64-67</a> )
	103-2 The management approach and its components	FPSA Regulations on training (p. <a href="#">64</a> ); HR Management System Manual (p. <a href="#">29</a> ); Collective Agreement (p. <a href="#">67</a> ); KPO Programme for Increasing Local Content in Staff (p. <a href="#">62</a> ); Competency Management System (p. <a href="#">66</a> ).
	103-3 Evaluation of the management approach	Development of the national personnel (p. <a href="#">62</a> ); Training and development (p. <a href="#">64</a> ).
GRI 404 Training and Education 2017	404-1 Average hours of training per year per employee	Training statistics (pp. <a href="#">65-66</a> ). Data is not provided by gender as it is not considered viable since the personnel training plan is developed regardless of gender.



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Training and Education		
GRI 404 Training and Education 2017	404-2 Programs for upgrading employee skills and transition assistance programs	Scholarship programmes for national employees and their children (p. <a href="#">69</a> )
	404-3 Percentage of employees receiving regular performance and career development reviews	Compensations and benefits (p. <a href="#">69</a> )
Diversity and Equal Opportunity		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers Kazakhstan
	103-2 The management approach and its components	Code of Conduct (p. <a href="#">31</a> ); Collective Agreement for 2016-2018 (Employee relations, p. <a href="#">67</a> )
	103-3 Evaluation of the management approach	Terms of the Collective Agreement are reviewed every 2-3 years
GRI 405 Diversity and Equal Opportunity 2017	405-1 Diversity of governance bodies and employees	Development of National Personnel (p. <a href="#">62</a> )
	405-2 Ratio of basic salary and remuneration of women to men	Basic salaries are established for employee categories regardless of gender, and so basic salaries for women and men are equal.
Freedom of Association and Collective Bargaining		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	KPO impact boundary covers West-Kazakhstan Oblast
	103-2 The management approach and its components	Collective Agreement for 2016-2018 (p. <a href="#">67</a> )
	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 2017	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Employee relations (p. <a href="#">67</a> )



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Security Practices		
GRI 103 Management Approach 2017	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 Kazakhstan Oblast and the export pipeline facilities in the Atyrau Oblast
	103-2 The management approach and its components	Our targets in security (Tab.№15, p.52); Security Management System (Security, p.52)
	103-3 Evaluation of the management approach	Security Management System (p.52)
GRI 410 Security Practices 2017	410-1 Security personnel trained in human rights policies or procedures	Security (p.52)
Human rights assessment		
GRI 103 Management Approach 2017	103-1 Explanation of the material topic and its Boundary	The impact boundary covers KPO and contractors within the facilities of the Karachaganak field
	103-2 The management approach and its components	Code of Conduct (p.31); Collective Agreement for 2016-2018 (Employee relations, p.67)
	103-3 Evaluation of the management approach	Hotline and other compliance measures (p.31)
GRI 412 Human Rights Assessment 2017	412-2 - Employee training on human rights policies or procedures (partial disclosure)	Code of conduct and Anti-corruption awareness and training (p.31)
Local Communities		
GRI 103 Management Approach 2017	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 WKO
	103-2 The management approach and its components	Our strategy in working with local communities (p.104); Targets on community engagement (Tab.№45, p.104); KPO Stakeholder Engagement Operating Procedure; Involuntary Resettlement Operating Procedure; Grievance and Suggestion Management Procedure (p.104)
	103-3 Evaluation of the management approach	Dealing with grievance and suggestions; Grievance and suggestions received from residents in 2017 (Graph №38, p.105). KPO local community engagement procedure are developed in accordance with IFC standards.



TOPIC-SPECIFIC STANDARDS		
GRI STANDARD	DISCLOSURES	PAGE NUMBER OR URL, OMISSIONS
Local Communities		
GRI 413 Local Communities 2017	413-1 Operations with local community engagement, impact assessments, and development programs	Community health impact assessment (p.56). KPO Community Relations department implements development programs for local communities, though in 2017 programs were not implemented due to budget non-approval (p.104)
G4 O&G Sector Disclosures	G4-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)	Resettlement of Berezhovka and Bestau communities (p.105)
Industrial safety and integrity management		
GRI 103 Management Approach 2017	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 Kazakhstan 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 (Table № 14, p.46); KPO Asset Integrity Barrier Model (p.47)
	103-3 Evaluation of the management approach	2017 HSE Improvement Plan: Asset Integrity and Risk Management (p.41); HSE Risk management (p.38); Monitoring of Asset Integrity KPIs (p.48); Alarm Rationalisation Project (p.49); Process Safety Fundamentals campaign (p.50)
G4 O&G Sector Disclosures	G4-OG13 Number of process safety events, by business activity	Asset Integrity (p.46); Loss of Primary Containment (p.48)



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## Independent Assurance Report on the Karachaganak Sustainability Report 2017 of Karachaganak Petroleum Operating B.V.

### To the management and stakeholders of Karachaganak Petroleum Operating B.V.

#### Subject matter

At the request of Karachaganak Petroleum Operating B.V. (hereinafter 'KPO' or 'Organization') we have obtained a limited level assurance on the qualitative and quantitative information disclosed in the 'Karachaganak Sustainability Report 2017' (hereinafter 'the Report').

#### Applicable criteria

The criteria of our engagement were the Global Reporting Initiative's Sustainability Reporting Standards (hereinafter 'the GRI Standards'), sustainability reporting principles of KPO which are identical to the reporting principles contained in the GRI Standards as set out in the section 'About this Report' on page 4-5 of the Report, and the KPO Sustainable Development Charter which is available at KPO's corporate website. We believe that these criteria are appropriate given the purpose of our assurance engagement.

#### Management's responsibilities

The management of the Organization is responsible for the preparation of the Report and for the information therein to present fairly in all material respects sustainability policies, activities, events and performance of the Organization for the year ended December 31, 2017 in compliance with the GRI Standards and the sustainability reporting principles of KPO that are described in the section 'About this Report' on pages 4-5 of the Report. This responsibility includes designing, implementing and maintaining internal controls relevant to the preparation of a sustainability report that is free of material misstatements, selecting and applying appropriate reporting principles and using measurement methods and estimates that are reasonable in the circumstances.

### Our responsibilities

Our responsibility is to independently express conclusion that:

- Sustainability performance summary information and data included in the Report, in all material respects, provide fair representation of sustainability policies, activities, events and performance of KPO in 2017;
- The reporting processes related to the information and data collection on key performance indicators regarding human resources, environment, health and safety, national content of the goods and services purchased, charity and social investments are in place and are compliant with relevant principles of the GRI Standards,
- Sustainability related policies and procedures corresponding to the KPO Sustainable Development Charter, and described in the Report, adopted,
- The Report is prepared 'in accordance' with the GRI Standards using the Core option.

We apply International Standard on Quality Control 1 and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

### Summary of work performed

Our engagement was conducted in accordance with International Standard on Assurance Engagements (ISAE) 3000 (Revised), Assurance Engagements Other than Audits or Reviews of Historical Financial Information, issued by IFAC, and accordingly included the following procedures:



- Interviews with representatives of the Organization management and specialists responsible for its sustainability policies, activities, performance and relevant reporting,
- Analysis of key documents related to Organization sustainability policies, activities, performance and relevant reporting,
- Obtaining understanding of the process used to prepare the information on sustainability performance indicators of the Organization and other engagement circumstances by reviewing the reporting process used for preparation of sustainability reports,
- Analysis of the Organization stakeholder engagement activities,
- Benchmarking of the Report against sustainability reports of selected international and Kazakhstan peers of the Organization in oil and gas industry and lists of sector-specific sustainability issues raised by stakeholders,
- Review of a selection of corporate and external media publications with respect to the Organization sustainability policies, activities, events, and performance in 2017,
- Analysis of material issues in field of sustainable development identified by the Organization,
- Identification of sustainability issues material for the Organization based on the procedures described above, and analysis of their reflection in the Report,
- Review of data samples regarding key human resources, environment, health and safety, national content of the goods and services purchased, charity and social investments indicators for the year ended December 31, 2017, to assess whether these data have been collected, prepared, collated and reported appropriately,
- Visit to KPO's offices in Uralsk and Aksai in order to conduct interviews and gather evidence supporting the assertions on the Organization's sustainability policies, activities, events, and performance made in the Report,
- Collection on a sample basis of evidence substantiating other qualitative and quantitative information included in the Report at the headquarters level,

- Assessment of compliance of the Report and the underlying reporting processes with relevant sustainability reporting principles of the GRI Standards used by KPO, and
- Assessment of compliance of information and data disclosures in the Report with the requirements of the Core option of reporting 'in accordance' with the GRI Standards.

Our evidence gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained than in a reasonable assurance engagement.

### Conclusion

Based on our work described in this report, nothing has come to our attention that causes us to believe that:

- The sustainability performance summary information and data included in the Report, in all material respects, does not represent fairly the sustainability policies, activities, events and performance of KPO during 2017 in accordance with the GRI Standards and the KPO Sustainable Development Charter;
- The reporting processes related to the information and data collection on key performance indicators regarding human resources, environment, health and safety, national content of the goods and services purchased, charity, and social investments are not in place and not compliant with relevant principles of the GRI Standards;
- Sustainability related policies and procedures corresponding to the KPO Sustainable Development Charter and described in the Report, are not adopted;
- The Report is not prepared 'in accordance' with the GRI Standards using the Core option.

*Ernst & Young Advisory LLP*

Almaty  
20.09.2018





GLOSSARY

	ABBREVIATION	DESCRIPTION
A	ACM	Asbestos Containing Materials
	AGLD	Acoustic gas leak detectors
	AI	Asset Integrity
	ALARP	As low as reasonably possible
B	BAP	Biodiversity Action Plan
	BCM	Billion cubic meters
	BHA	Bottom hole assembly
	BOE	Barrels of oil equivalent
C	CCTV	Close Circuit Television
	CHCD	Closed Hole Circulation Drilling
	CIPS	Chartered Institute of Procurement and Supply
	CMC	Contractor's Marketing Committee
	CMMS	Computerised Maintenance Management System
	ConCom	Contractor Committee
	CPC	Caspian Pipeline Consortium
D	DSIU	Declaration of Safety for Industrial Units
E	EACS	Electronic Access Control System
	EEP	Environmental Emissions Permit
	EERA	Escape, Evacuation and Rescue Assessments
	EIA	Environmental Impact Assessment
	EITI	Extractive Industries Transparency Initiative
	EMS	Environmental Monitoring Station
	EOPS	Early Oil Production Satellite
	EPMP	Environmental Protection Measures Plan
	ER	Emergency Response
F	FAB	Field Administration Building
	FEED	Front End Engineering Design
	FID	Final Investment Decision



	ABBREVIATION	DESCRIPTION
F	Figutive emissions	Industrial emissions in the atmosphere as non-directional gas flows (according to the State Standard GOST 17.2.1.04-77)
	FPSA	Final Production Sharing Agreement
G	Gcal	Gigacalorie
	GHG	Greenhouse Gases
	GOR	Gas oil ratio
	GRI	Global Reporting Initiative
	GTG	Gas Turbine Generator
	GTPP	Gas Turbine Power Plant
	GWS	Goods, works and services
H	HAZOP	Hazard and Operability
	HC	Hydrocarbons
	HP	High pressure
	HPP	High pressure pump
	HPS	High pressure separator
	HRA	Health Risk Assessment
	HSE	Health, Safety and Environment
I	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.
	IPCC	Intergovernmental Panel on Climate Change
	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
	IUCN	International Union for Conservation of Nature
	IVMS	In-vehicle monitoring system
J	JMC	Joint Marketing Committee
	JOA	Joint Operating Agreement



	ABBREVIATION	DESCRIPTION
J	JOC	Joint Operating Committee
	JPC	Joint Procurement Committee
K	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
	Kscm	Thousand standard cubic meters
L	LED	Light-emitting diodes
	LOPC	Loss of primary containment
	LTi	Lost Time Injury
	LTIF	Lost Time Injury Frequency
M	MAH	Major accident hazard
	MPC	Maximum Permissible Concentration
	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.
	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).
	MPE	Maximum permissible emission
	MPL	Maximum Permissible limits
	MS	Management System
	Mscm	Million standard cubic metres
	MWH	Megawatt hour
N	NCP	National Contact Point
	NEBOSH	National Examination Board in Occupational Safety and Health
	NGO	Non-governmental organisation



	ABBREVIATION	DESCRIPTION
O	OECD	Organisation for Economic Cooperation and Development
	OHSAS 18001	Internationally recognised assessment specification for occupational health and safety management systems
	OpCom	Operating Committee
	OPS	Oil Pumping Station
P	Parent Companies or Contracting Companies	ENI, Shell, Chevron, Lukoil and KazMunayGaz National Company
	PEC	Production Environmental Control
	PED	Project Execution Directorate
	PEP	Plateau Extension Projects
	PDNI	Professional development needs identification
	PDR	Performance and Development Review
	POB	Personnel on Board Control System
	PSFs	Process Safety Fundamentals
Q	QRA	Quantitative Risk Assessment
R	RBI	Risk based approach
	RoK	Republic of Kazakhstan
	RMF	Risk Management Framework
	RTI	Road Traffic incidents
	RTIF	Road Traffic Incident Frequency
S	SCE	Safety Critical Element
	SDG	Sustainable Development Goals
	SIMOPS	Simultaneous operations
	SMS	Security Management System
T	SPZ	Sanitary Protection Zone
	TRI	Total Recordable injuries
	TRIF	Total Recordable Injury Frequency
V	VPSHR	Voluntary Principles on Security and Human Rights
W	WKO	West Kazakhstan Oblast



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## FEEDBACK FORM ON THE KPO SUSTAINABILITY REPORT 2017

We genuinely consider our readers' feedback in the preparation of future reports. GRI 102-53

1. Name, surname   
Organization

2. Which stakeholder group best describes you?
- |   |                          |                                   |                          |
|---|--------------------------|-----------------------------------|--------------------------|
| (1) Parent companies  | <input type="checkbox"/> | (6) Counterparties                | <input type="checkbox"/> |
| (2) Authorised body – PSA LLP   | <input type="checkbox"/> | (7) Business partners             | <input type="checkbox"/> |
| (3) Employees   | <input type="checkbox"/> | (8) Media                         | <input type="checkbox"/> |
| (4) Trade Unions  | <input type="checkbox"/> | (9) Local communities             | <input type="checkbox"/> |
| (5) State bodies  | <input type="checkbox"/> | (10) Non-government organisations | <input type="checkbox"/> |
| (11) If you don't belong to any of groups listed above, please indicate your connection to KPO: |                          | <input type="checkbox"/>          |                          |

3. What is the reason for reading our Sustainability Report?
- |  |                          |   |                          |
|--|--------------------------|---|--------------------------|
| (1) For KPO general awareness purposes                 | <input type="checkbox"/> | (3) As a study material                     | <input type="checkbox"/> |
| (2) For potential investment purposes                  | <input type="checkbox"/> | (4) To track KPO sustainability performance | <input type="checkbox"/> |
| (5) For industry analytics purposes                    | <input type="checkbox"/> |   |                          |
| (6) In search of specific information, please specify: |                          | <input type="checkbox"/>                    |                          |
| <input type="text"/>                                   |                          |   |                          |
| (7) For any other reasons, please state:               |                          | <input type="checkbox"/>                    |                          |
| <input type="text"/>                                   |                          |   |                          |

4. Please evaluate the report according to the criteria below:

Criteria	Poor	Fair	Good	Excellent
(1) Cohesion and coherence (easy to understand)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Report structure (easy to navigate)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Appealing design and illustrations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Clear and useful tables, graphs and infographics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Overall report quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. How would you rate our performance disclosure in the following areas:

	Poor	Fair	Good	Excellent
(1) Production and operation performance and technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) Corporate governance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) Environmental Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Contribution to the RoK and WKO economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) Social responsibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) Other comments or suggestions:	<input type="text"/>			



6. In your opinion, which material topics or issues important for you were disclosed in the KPO Sustainability Report 2017?

Social topics

- |  |                          |   |                          |
|--|--------------------------|---|--------------------------|
| (1) Corporate governance and management approach               | <input type="checkbox"/> | (8) Human Rights' training for contractors                  | <input type="checkbox"/> |
| (2) Stakeholders engagement                                    | <input type="checkbox"/> | (9) Labour / Management relations                           | <input type="checkbox"/> |
| (3) Ethical conduct  | <input type="checkbox"/> | (10) Labour practices grievance mechanisms                  | <input type="checkbox"/> |
| (4) Social, cultural and gender diversity, equal opportunities | <input type="checkbox"/> | (11) Freedom of association and collective bargaining       | <input type="checkbox"/> |
| (5) Anti-corruption  | <input type="checkbox"/> | (12) Local communities engagement                           | <input type="checkbox"/> |
| (6) Employment and compensation                                | <input type="checkbox"/> | (13) Community grievance redress                            | <input type="checkbox"/> |
| (7) Personnel development and training                         | <input type="checkbox"/> | (14) Community Relations - impact assessment and mitigation | <input type="checkbox"/> |

Operations and HSE

- |   |                          |   |                          |
|---|--------------------------|---|--------------------------|
| (1) Operations and technologies                                 | <input type="checkbox"/> | (9) Management of waste and effluents         | <input type="checkbox"/> |
| (2) KOGCF development projects                                  | <input type="checkbox"/> | (10) Spills                                   | <input type="checkbox"/> |
| (3) Protection of health  | <input type="checkbox"/> | (11) Water use                                | <input type="checkbox"/> |
| (4) Occupational health and safety                              | <input type="checkbox"/> | (12) Energy management                        | <input type="checkbox"/> |
| (5) Asset integrity and Process safety                          | <input type="checkbox"/> | (13) Biodiversity and ecosystems conservation | <input type="checkbox"/> |
| (6) Community Emergency Preparedness - mechanisms of engagement | <input type="checkbox"/> | (14) Environmental grievance mechanisms       | <input type="checkbox"/> |
| (7) Reduction of GHG and pollutants                             | <input type="checkbox"/> | (15) Environmental investments (EPMP)         | <input type="checkbox"/> |
| (8) Air quality monitoring                                      | <input type="checkbox"/> | (16) ISO 14001 and ISO 50001 Certification    | <input type="checkbox"/> |

Economical topics

- |  |                          |  |                          |
|--|--------------------------|--|--------------------------|
| (1) Increase of local content in staff   | <input type="checkbox"/> | (4) Local content development and its share in procurement of goods and services | <input type="checkbox"/> |
| (2) Impact of infrastructure investments in the territories with our presence, including support for local communities | <input type="checkbox"/> | (5) Procurement practices and supply chain                                       | <input type="checkbox"/> |
| (3) Electrical power supplies to the local communities   | <input type="checkbox"/> | (6) Estimated proved reserves and production                                     | <input type="checkbox"/> |
|  |                          | (7) Transparency of payments to the government (EITI)                            | <input type="checkbox"/> |

7. Which of above, if any, you would like to see again in the KPO Sustainability Report 2018?  
In addition, please specify your other areas of interest.

Please send your feedback, comments to this edition or contribution to the Report 2018 to our address or by email at [Sustainability@kpo.kz](mailto:Sustainability@kpo.kz)

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