

# OPERATIONS

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**OFTEN, WE LISTEN ONLY TO RESPOND, NOT TO HEAR. IT IS IMPORTANT TO MAKE SURE THAT THE PERSON IS READY TO LISTEN TO YOU AND IS PREPARED TO RECEIVE INFORMATION.**



GRI 2-23

**BUSINESS PRINCIPLE:**

**Economic**

Long term profitability is essential to achieving our business goals and creating value for our shareholders and the Republic of Kazakhstan.

**BUSINESS PRINCIPLE:**

**Environment**

We continually look for ways to reduce the environmental impact of our operations.

**2023**

**PRODUCTION**

Total Production

**142.7**  
Mboe

Total equivalent stable oil

**10,858**  
kT

Total gas production

**22,385**  
Mscm

**WELL STOCK**

Total well stock

**572**

Production wells in operation

**126**

Injection wells

**21**

**0** Tier-1 and Tier-2 LOPC events

**0** significant spills

## OVERVIEW GRI 2-1, 3-3, OG1

KPO is the Operator of the Karachaganak oil and gas condensate field (KOGCF) which is located in North-West Kazakhstan and covers an area of over 280 km<sup>2</sup>. Karachaganak is a unique field with complex operating conditions, not in the least due to extreme continental climate. The field is some 1,600 m thick and very complex and unique with its top at a depth of around 3,500 m. The extracted 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. GRI 413-2

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 some 13.6 billion barrels of liquids and 59.4 trillion cubic feet of gas, of which approximately 15.5% of liquids and 14,5% of gas have been recovered as of 2023. OG-1

The Company invests heavily into the application of leading-edge technologies to maximize sustainable economic value and minimise environmental impact. The total investment in the development of the Karachaganak oil & gas condensate field since the signing of the FPSA in 1997 to 31.12.2023 has totalled over USD 31.3 bln. As of end 2023, 4,080 people worked in the KPO organisation. GRI 2-6

## KPO FACILITIES GRI 2-1, 2-6

Hydrocarbon production and processing at KPO involve three major interconnected units: Karachaganak Processing Complex (KPC), Unit 2 and Unit 3. The infield system, comprising approximately 2,000 kilometres of pipelines, efficiently links the major facilities and facilitates production flows from the wells and among the units. Additionally, the system includes an Early Oil Production Satellite (EOPS) and Eco Centre, as illustrated in the Figure 4.

The transportation system, operated by KPO is covering two directions:

1. Karachaganak – Atyrau Transportation System (KATS):
  - Equipped with pumping stations at KPC and Bolshoi Chagan.
  - Features a receiving and storage facility at the KPO Terminal in Atyrau.
2. Karachaganak – Orenburg Transportation System (KOTS):
  - Used for transporting gas to Orenburg Gas Plant in the Russian Federation.

As of end 2023, 126 producing and 21 re-injection wells were online at Karachaganak, from a total well stock of 572 wells. In 2023, a new category “Surface waste

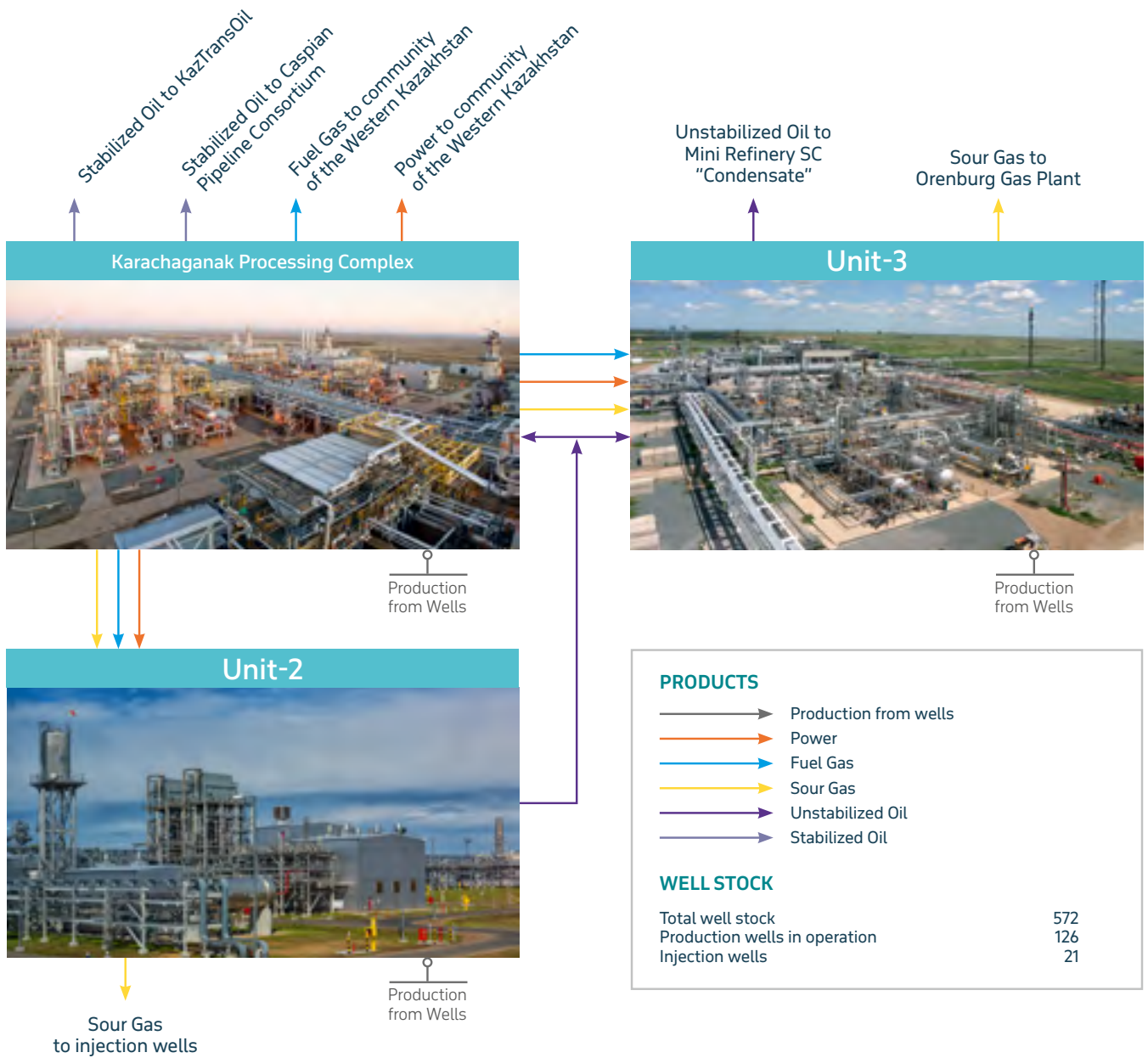
**AS OF END 2023, 126 PRODUCING AND 21 RE-INJECTION WELLS WERE ONLINE AT KARACHAGANAK, FROM A TOTAL WELL STOCK OF 572 WELLS.**

and wastewater accumulation areas observation wells” consisting of 94 wells was added to the special well stock as well as one abandoned well of this category. Therefore, number of special wells was increased by 95 wells and consists of 279 wells as of 01.01.2024.

In the reporting period, 4 production wells and 3 gas injection wells were drilled. The drilling of two production wells was started in Q4 2023 and completed in Q1 2024. Workover activities were carried out in three wells.



**Fig. 4. Karachaganak facilities and products (as of end 2023)** GRI 2-6



# PRODUCTS AND EXPORT ROUTES GRI 2-6

KPO produces liquid hydrocarbons, raw gas and fuel gas.

To maximize net revenue, in 2023, around 99.13% of liquid production was exported as stabilised oil to the Western markets via the following routes:

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

The CPC pipeline delivers KPO oil to CPC Marine Terminal in the Black Sea (Yuzhnaya Ozereyevka), whereas Atyrau-Samara pipeline was used in 2023 to deliver oil to Adamova Zastava with final Buyer's destination to Germany (Schwedt Refinery) and to Ust-Luga port in the Baltic Sea (refer to Fig. 5).

CPC pipeline is the main KPO export route; the Atyrau-Samara route to Adamova Zastava was activated and maximized in 2023 under prevailing political and economic situation since its netback appeared to be higher than CPC. The Atyrau-Samara route is normally used as a backup in case of planned or unplanned CPC disruptions.

In 2023, KPO took all possible actions to comply with international sanctions caused by geopolitical conditions.

In 2023, KPO successfully transported 0.14 mln tonnes of oil through KTO T.Kassymov Oil Pumping Station with further transshipment to the CPC pipeline.

**Fig. 5. KPO export routes in 2023** GRI 3-3



## Export activities in 2023

In 2023, KPO exported total of 10.6 mln tonnes of oil, of which:

- 9.62 mln tonnes were delivered through CPC including PS Kassymov volumes.
- Nearly 0.99 mln tonnes of oil were exported via Druzhba pipeline to Adamova Zastava.
- 0,04 mln tonnes of oil were lifted at the port of Ust-Luga in the Baltic Sea.

## Unstabilized condensate deliveries

As part of maintenance at the KPC, during activities such as boilers washing, etc, and when performing work related to the start-up of new wells, deliveries of unstabilized condensate were made to the Refinery of Condensate JSC.

## Gas production and utilization

Gas produced from the Karachaganak Field serves multiple purposes:

- Re-injection into the reservoir to maintain reservoir pressure.
- Sales as raw gas to KazRosGas LLP (KRG) under the long-term Gas Sales and Purchase Contract. In 2023, KPO exceeded initial projections by selling 8.8 billion m<sup>3</sup> of raw gas to KRG for the buyer's

processing at the Orenburg Gas Plant. This achievement underscores positive outcomes despite challenges arising from extended or unplanned maintenance at the OGP during certain months of 2023.

- Sweetening (clearing from H<sub>2</sub>S) to use for various field units' processes, electricity generation at the Gas Turbine Power Plant for KPO facilities, and to fulfill obligations under the FPSA by supplying fuel gas to local power distribution companies.

## OPERATIONS AND SALES IN 2023 GRI 2-6

In 2023, KPO produced 142.7 mln barrels of oil equivalent (BOE) in the form of stable and unstable liquids and gas. Gas production in 2023 reached 22 bln m<sup>3</sup>. In 2023, to maintain reservoir pressure, KPO

re-injected ~ 12.6 bln m<sup>3</sup> of gas into the reservoir, a volume equivalent to about 56.5% of the total gas extracted.

**Tab. 2. Production in 2023**

		2023	2022*	2021
<b>Total Production</b> <i>(gas injection exclusive)</i>	Mboe	<b>142.7</b>	128.5	134.1
<b>Total equivalent stable oil</b>	Kt	<b>10,858</b>	10,134	10,338
<b>Total gas production</b>	Mscm	<b>22,385</b>	19,442	18,980
<b>Gas Injection into a reservoir</b>	Mscm	<b>12,650</b>	11,131	9,998
<b>Sweet Gas for internal needs</b>	Mscm	<b>919</b>	843	789

\* Full turnaround year

**Tab. 3. Sales in 2023**

		2023	2022	2021
<b>Total Sales</b>	Mboe	<b>136.7</b>	124.9	130.7
<b>Stable Liquids</b> <i>Oil and stabilised condensate to CPC and Atyrau-Samara</i>	kt	<b>10,648</b>	10,171	10,366
<b>Unstable Liquids</b> <i>Unstabilised condensate to Condensate SC's refinery</i>	kt	<b>104</b>	30	1.5
<b>Raw Gas</b> <i>to Orenburg Gas Plant</i>	Mscm	<b>8,805</b>	7,455	8,182
<b>Sweet Gas</b> <i>to the West Kazakhstan Oblast to generate electricity for community</i>	Mscm	<b>65</b>	70	70

With regards to customer health and safety, we have had no significant incidents of non-compliance with regulations resulting in a fine, penalty or a warning in 2023. GRI 416-1



## DRILLING TECHNOLOGIES SDG 12.6

In 2023, KPO continued building on the strong foundation laid in the past years, working on minimising the impact of drilling and well services operations on the environment. As previously, we continued our journey towards zero emission and applied measures listed below to reduce greenhouse gas (GHG) emissions, and consumption of water and resources:

- High-efficient environmentally friendly burners to eliminate where possible / reduce the need for flaring and the need for disposal of contaminated fluids.
- Continued drilling campaign, delivering wells that will allow increased oil production offsetting existing high gas producing (GOR) wells.
- High Rate Well Test setup with High Pressure Separators combined with multiphase high-rate flow pumps (High Gas Volume Fraction Pumps – HGVF) to enable 'zero' flaring well test / clean-up activity on new wells.
- Use of the light workover rigs instead of the 3000HP heavy rigs to complete intervention and workovers on two wells. This ensured lower emissions and lower environmental footprint to achieve our objectives.
- Our in-field Eco Centre or waste management centre enables recovery of base oil from contaminated drilling fluids and drilled cuttings for re-use in well intervention activities.
- Initiated GHG emissions reduction plan and piloted other improvement initiatives. Implemented use of solar powered mobile offices used for H<sub>2</sub>S monitoring on some of our rigless sites (replacing the traditional diesel generator sets for these units). Implemented a number of initiatives too on our rig sites, including installation of Halo LED lights in the derrick of our rigs that contribute to improving energy efficiency.

The KPO Well Operations team continuously works on developing internal procedures, workflows, technology improvements and innovations aimed at improving efficiency and well operations' performance. The following was achieved throughout 2023:

- Development and implementation of a "Business Improvement Plan" to drive efficiency of well delivery with strong focus on digitalisation and performance improvement.
- Step-up in well integrity monitoring and well integrity status – preventing and reducing the possibility of well integrity related environmental emissions.
- Utilisation of new technologies like local expander (ability to repair the well locally, thereby avoiding the need to re-drill) – driving efficient production.



## TURNAROUND

The KPO Turnaround strategy is focused on optimisation of production and minimisation of cost by maximising intervals between turnarounds and through the reduction of actual turnaround durations. This must be achieved whilst ensuring safe, reliable continuous operations and regulatory compliance. Historically, all KPO Units had full field turnarounds every 3 years.

During 2023 an extensive technical review was carried out covering all aspects associated with defining interval frequency such as Equipment Maintenance strategies and regulatory compliance. The outcome of this review approved the implementation of an extended full field interval extension from 3 to 4 years commencing from 2022 onwards. This schedules the next full field turnaround to 2026.

The strategy for turnarounds executed in 2023 was in line with previous years. Generally, a full field Turnaround is a massive undertaking resulting in a huge workload for both KPO and contractor staff and equipment. KPO takes the opportunity to execute smaller shutdowns of the individual production trains wherever there is an opportunity window as this minimises the peak loading during full field turnarounds and reduces HSE risks related to concurrent activities at the units.

During 2023, Unit 3 conducted individual train outages and a short full unit pitstop for scheduled maintenance activities. These were carried out from May through to September: the scope in these outages covered E209 Heat exchanger replacement, routine P&M scope as well as minor modifications.

There was also a full field pitstop involving all Units for 24 hrs on 11<sup>th</sup> September 2023, which was necessary to conduct project tie-in work at KPC associated with KEP 1A 5<sup>th</sup> Injection Compressor scheduled start-up date in 2024.

Unit 2 conducted annual maintenance scheduled work on injection compressors. The work executed covered dry gas seal replacement on re-injection compressor 360C and minor inspection/PSV re-certification on compressors 360 A/B/D, as well as statutory maintenance within the period from 11 September through 30 October 2023.

**NEXT FULL FIELD TURNAROUND  
IS PLANNED IN 2026.**



## DEVELOPMENT PROJECTS

As a Contractor to the Republic of Kazakhstan, KPO has an obligation to conduct all operations necessary to ensure the contract area is developed and the petroleum is produced in accordance with Good Oilfield Practice.

Following the completion of the Karachaganak Phase II Initial Programme in 2003, KPO has been funding and implementing a rolling work programme that includes drilling of new development wells, undertaking workovers on existing wells, upgrading production facilities and other projects required to maintain a high production level.

From 2014, in order to avoid the increased gas-oil-ratio which causes the existing facilities to become gas constrained, KPO has been working on a programme

of production Plateau Extension Projects (PEP) comprised of:

- KPC Gas De-bottlenecking (KGDBN) project aimed at increasing the overall KPC gas processing by expanding the gas handling capacity;
- 4<sup>th</sup> Gas Reinjection Compressor (4IC) project aims to increase the annual daily average volume of gas re-injected into the reservoir and to improve reservoir pressure support;
- 5<sup>th</sup> Trunkline and Gas Reinjection Wells Projects would upgrade the injection network capacity downstream of Unit 2 through installation of a new trunk line, and drilling and completion of new gas injection wells.

The above PEP projects have successfully been executed and completed.

## KARACHAGANAK EXPANSION PROJECT

KPO continues development of the Karachaganak field via the Karachaganak Expansion Project Phase 1 (KEP1), scheduled in a phased manner. The KEP1 project will create additional value for the Karachaganak Parent Companies and the Republic of Kazakhstan by maintaining the stabilized liquid plateau through the provision of additional wells, process facilities and gas reinjection to manage the increasing gas oil ratio (GOR) of the field.

In December 2020, the Karachaganak Parent Companies signed an agreement sanctioning the KEP1A Project. That was another major achievement representing a new milestone in the continued development of the Karachaganak Field, building further on the achievements of Karachaganak Gas Debottlenecking Project (KGDBN) and the Fourth Injection Compressor (4IC) Project.

KEP1A represents the first phase of the KEP1 scope and comprises of the 5<sup>th</sup> Injection Compressor (5IC) and associated facilities. The KEP1A Project pursues the opportunity to utilise the available dehydration capacity installed by KGDBN in the Karachaganak Processing Complex to increase gas re-injection capacity and integrate its scope within existing systems, utilities and facilities. The integration philosophy creates synergies and reduces CAPEX exposure. One of KPO's key priorities during the execution of KEP1 is to maximize the Local Content by enhancing local contractors' competitiveness.

The KEP1A project has made big strides this year and is nearing completion. Project completion and start of gas re-injection is expected in Q3 2024.

Work is also being carried out in parallel on the KEP1B project which was sanctioned on the 25<sup>th</sup> November 2022 by the Authorized body (PSA LLP) with the support of the RoK Ministry of Energy. The KEP1B Project represents the second phase of the KEP1 scope and comprises of the 6<sup>th</sup> Injection Compressor (6IC), gas dehydration unit, gathering network expansion and associated facilities. Similar to KEP1A, the project has the objective of increasing the liquid recovery by maximization of the production capacities of the existing facilities. The project is managed by the same team as a KEP1A. The project has made good progress during the year. Foundations are in place and erection of structural steel is ongoing. The (long lead) compression and the gas dehydration units have been manufactured and are ready to be shipped.

The 6<sup>th</sup> Trunkline and 3 Injection Wells Project has the objective to maximise liquids recovery by increasing the field injection area. The project will re-distribute injection gas into South West Frank area of the field for pressure support of nearby low Gas-Oil-Ratio wells and better reservoir management. The project was successfully completed and came on-stream in March 2024.

## KARACHAGANAK GAS PLANT PROJECT

KPO has identified an opportunity to enhance the value from the Karachaganak field through the monetization of sales gas and Liquefied Petroleum Gas (LPG) by means of a new processing plant, which

will also expand the liquid (condensate) production capacity within KPO. This opportunity is referred to as the Karachaganak Gas Plant (KGP) and the project viability is currently under consideration.



# WHY IS IT IMPORTANT TO US? GRI 3-3

The main objective of Asset Integrity is to prevent major accidents and reduce the risks to people, environment, assets, and the Company's reputation. It is an outcome of good design, construction, operating and maintenance practice.

Asset Integrity is achieved when facilities are structurally and mechanically sound and perform the processes to produce the products for which they were designed. Barriers that relate to the plants, people and processes are defined to reduce the risk for a major accident to a level that is as low as reasonably practicable.

## ASSET INTEGRITY AND CRITICAL INCIDENT MANAGEMENT

### ASSET INTEGRITY GRI 3-3, 2-16, 2-25, 403-2, 403-7, OG13, SDG 3.9, 8.8

KPO monitors potential threats to its operations and mitigates Asset Integrity risks through its barrier management system. The Asset Integrity department together with the Units continuously assess the health status of the safety barriers to identify weaknesses, implement mitigating measures and establish plans to re-instate these barriers to its original design to prevent any major accident.

The Asset Integrity Management Framework is a set of processes to prevent major accident hazards and to raise Asset Integrity and Process Safety awareness amongst the KPO employees, contractors and subcontractors working at the Karachaganak field.

The Asset Integrity Framework Management System consists of the following key processes:

- **Barrier Management** – through the application of a structured process supported by the using of the Barrier Model tool;
- **Asset Integrity Performance Analysis** – through the use of Key Performance Indicators;

- **Management of Change system for Brownfield Modifications** – through the use of the Management of Change database;
- **Asset Integrity Assurance** – through the use of reviews, audits, verifications and assessments;
- **Asset Integrity Improvement Culture initiatives** – through the production of e-Learning modules on the Mechanical Isolation Procedure, Process Safety Fundamentals and the Barrier Model process.

In 2023, KPO Asset Integrity department has been working on further enhancement of the Barrier Model software at operational facilities/units in terms of their ownership of the BM and its integration with other software applications. A Cumulative Risk Assessment methodology was developed and introduced to address these. Monthly BM review meetings with units were exercised. Training of newcomers has been continued.

In order to minimize asset integrity risks, we have set a number of 2023 of targets. The results of their implementation are presented further in the table.





**Tab. 4. Targets in Asset Integrity** GRI 3-3, 403-2, 403-7

2023 targets	Target achievement	Actions taken in 2023	Targets for 2024
Further implement the Barrier Model (BM) tool, increase understanding and ownership of this tool by the Units.	Ongoing	<ul style="list-style-type: none"> <li>Developed and Implemented Cumulative Risk Assessment Methodology for BM Phase I;</li> <li>Implemented the Barrier Model Approval process in order to assign roles and responsibilities in workflow;</li> <li>Conducted BM monthly review meetings with Units as per 2023 schedule;</li> <li>Continued training, e-learning and awareness session programs.</li> </ul>	<ul style="list-style-type: none"> <li>Enhance and Implement Phase II of Cumulative Risk Assessment with additional Asset Integrity inputs;</li> <li>Enhance ownership of BM by Unit Focal Points;</li> <li>Finalize BM e-learning and achieve 100% completion (only for newcomers, if required).</li> <li>Integrate BM Dashboard with RiskPoynt Database.</li> </ul>
Further develop enhanced functionality of the BM tool.	Ongoing	<ul style="list-style-type: none"> <li>11 PSF e-learnings were completed by 100% covering 1,892 operation employees;</li> <li>Conducted 50 PSF awareness sessions for KPO and contractors' personnel, attended by 1,111 people;</li> <li>Issued Quiz for PSF rules #1,2,3;</li> <li>Q1-Q4 best PSF HSE Cards selected.</li> </ul>	<ul style="list-style-type: none"> <li>Perform implementation analysis of Process Safety Fundamentals programme for its improvement.</li> <li>Continue PSF awareness sessions for KPO newcomers and contractors' personnel.</li> <li>Continue promoting PSF culture including contests and incentives.</li> <li>Coach Unit HSE staff to conduct PSF roll outs by themselves at the Units.</li> </ul>
Review the effectiveness of the implementation of the Process Safety Fundamentals (PSF)	Completed		

### Loss of Primary Containment

GRI 403-2, OG-13

According to the KPO requirements, all Loss of Primary Containment (LoPC) Process Safety Events (PSE) are identified, analysed, categorized and followed by corrective actions determined to prevent re-occurrence.

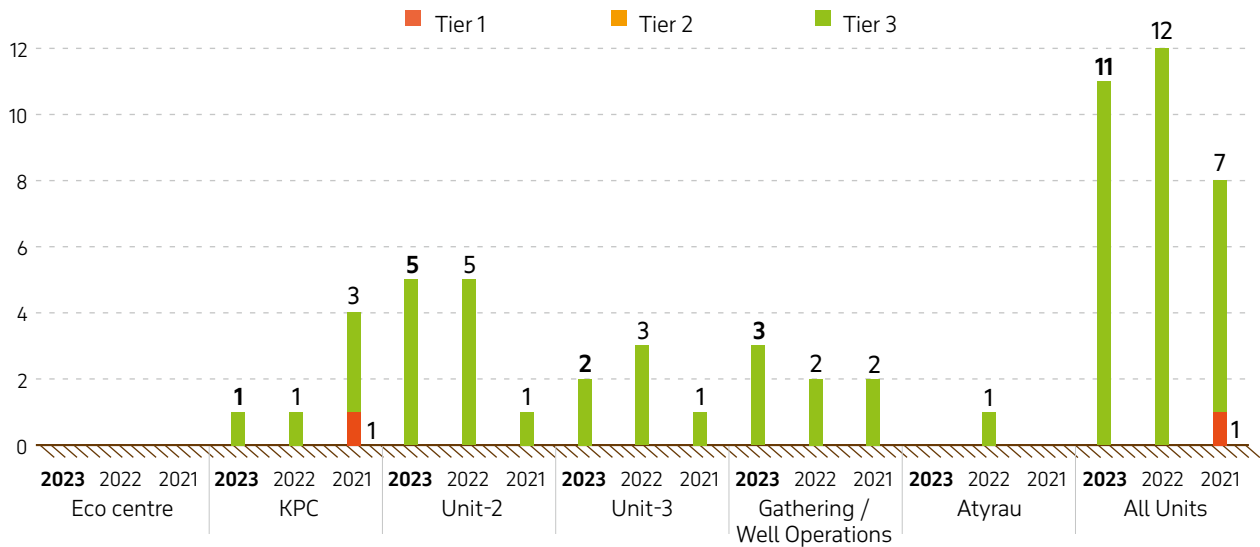
The year 2023 was the second year in KPO's history since 2014 with no Tier-1 or Tier-2 LoPC events were defined as per the IOGP Standard 456. In 2023, the number of Tier 3 LOPCs was 11 (3 of which related to Well Control Incidents). In 2022, KPO had 12 Tier-3 LoPC events.

The main root cause of PSEs in 2023 were related to equipment difficulty, management system and quality control.





**Graph 1. Loss of Primary Containment at KPO by process facilities, 2021–2023 OG13**



Note: For Process Safety Event definition (Tier-1/2/3), please refer to the International Standard IOGP 456.

Within 2023, KPO has undertaken a number of activities addressing the key risks or barriers in the KPO asset integrity, including process containment and remediation of risks. Amongst those there were Process Containment remedial works and replacement of some items and inoperable equipment. 26 Barrier Model risks were resolved – 10 high risks, 14 medium and 2 low risks. The activities were focused on ensuring BM risk records have effective mitigations and BM Items have effective recovery plans in place. Training and coaching of operational staff in the use of Barrier Model application is ongoing.

In 2024, the following key activities are planned on Barrier Management process:

- Continue conducting Unit BM pre-meetings with Unit focal points and monthly Unit BM meetings as per 2024 schedule.
- Continue verification of the effectiveness of mitigation measures and recovery plan implementation.
- Support BM integration for upcoming new projects.

- Continue staff training and awareness; organize BM roll-out sessions and BM e-learning for newcomers or staff new in their role.
- Support the closure of BM risks and recording the new Unit BM risks.
- Strengthen the barrier management process. Integrate BM risks identified from compliance assurance activities of key processes and risks associated with operational integrity critical processes.
- Promote, motivate and coach Units in the usage of BM Dashboard and Asset Integrity / Process Safety dashboards.
- Integrate Safety Critical Elements' deferral / backlog into Barrier Model to enhance granularity of cumulative risks assessment.

**Spills** GRI 306-3 (2016)

In 2023, no cases of significant spills<sup>1</sup> were recorded at the territory of the Karachaganak field.

<sup>1</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).

# WHY IS IT IMPORTANT TO US? GRI 3-3

Emergency response and crisis management are the key processes of the KPO management system since, if an emergency situation escalates, KPO and contractors' personnel, as well as the neighbouring communities, may happen to be within the possible hazard impact area.

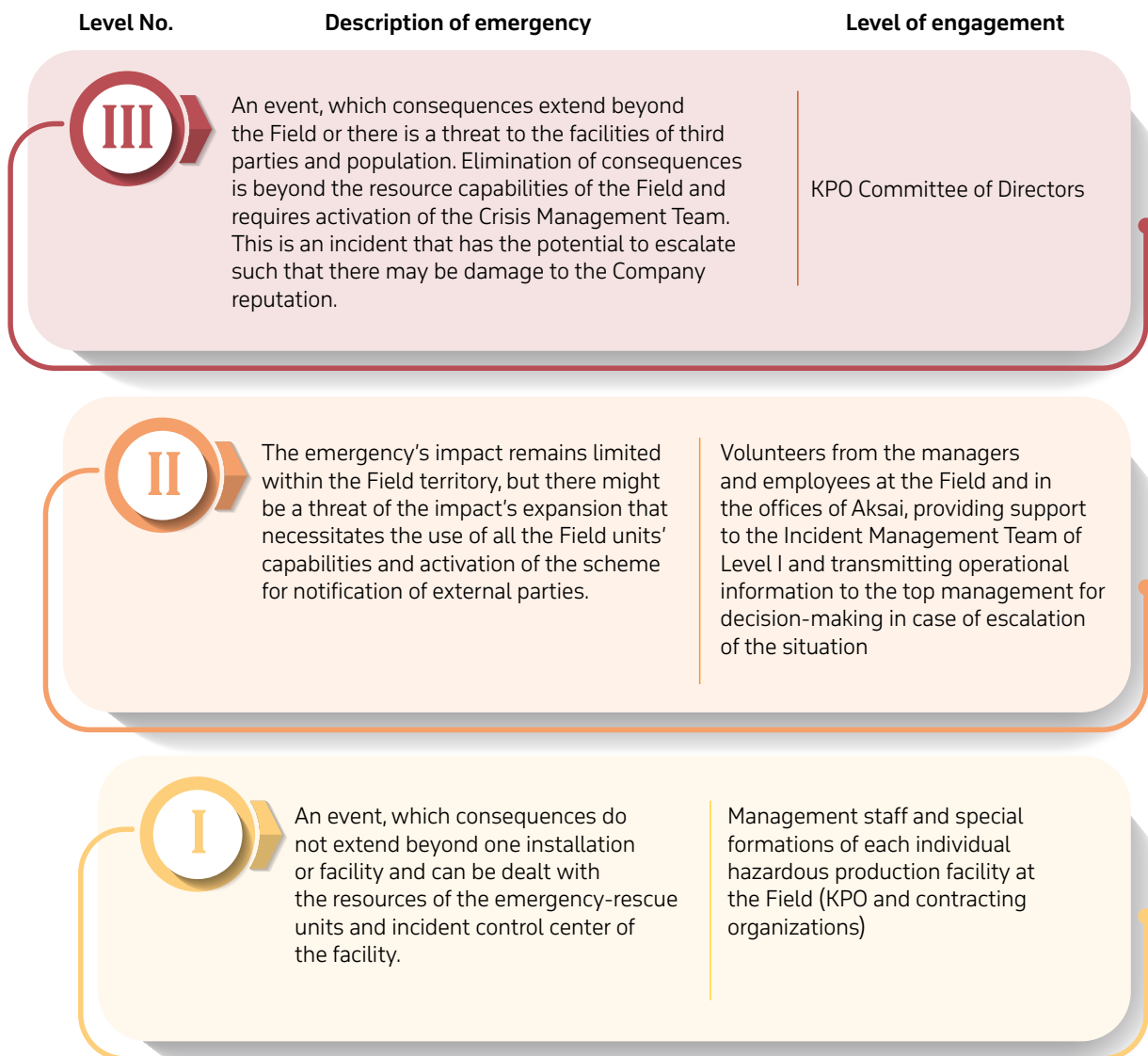
Emergency preparedness and response implies a recognition of possible irregularities and accidents, as well as creation of an organizational structure and resources for the mitigation of such accidents' effects on people, the environment, the Company's assets and reputation. These resources are also used to render support to the Burlin District state emergency and rescue capabilities in fighting fires on residential and agricultural lands, as well as in combating floods.

## CRITICAL INCIDENT MANAGEMENT GRI 3-3, 2-23, SDG 3.9

In case of any incident, accident or emergency, KPO operates a robust three-level Emergency Response system used to trigger a prompt response, assessment of emergency scale, planning and implementation of

actions to localize and eliminate emergency and its consequences. The system is graphically shown on figure 6.

**Fig. 6. KPO emergency response system** GRI 3-3, 403-5



In 2023, KPO continued training of Incident Management Team in accordance with the approved schedule.

Weekly, theoretical and practical trainings were carried out throughout 2023 with the involvement of KPO Civil Protection Units, namely:

- firefighting teams,
- gas rescue team,
- voluntary emergency-rescue team,
- medical units.

Totally, 43 drills have been conducted with the involvement of KPO Civil Protection Units at the training area.

Moreover, in 2023, KPO continued training of staff in civil protection via the e-learning system, as required by the RoK legislation.

In 2023, as part of ensuring the readiness of level I forces and resources, all Company's hazardous production facilities conducted monthly emergency response drills with the involvement of the Facility

Incident Command Team (ICT), emergency rescue teams and KPO and contractors' personnel.

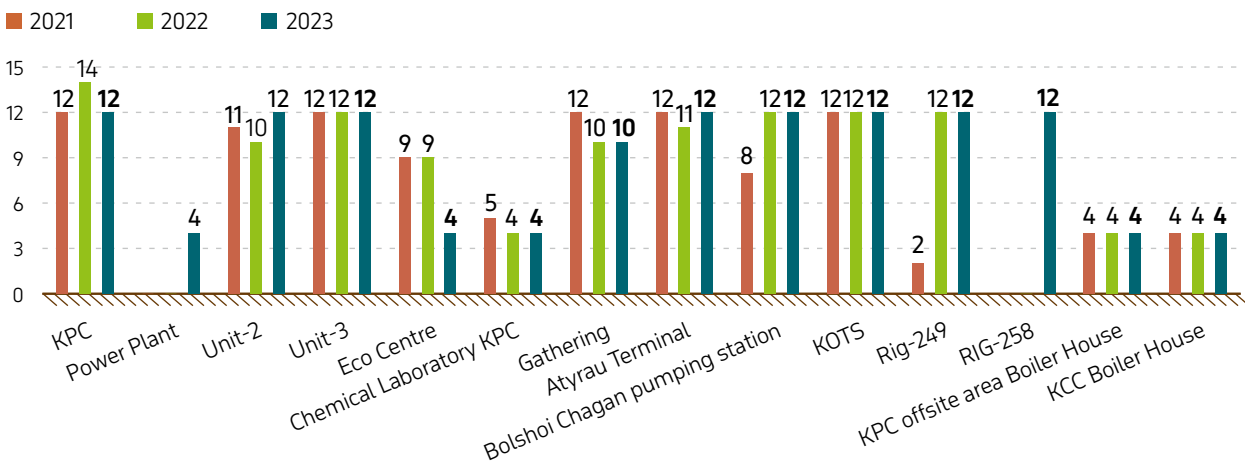
The total number of emergency response drills conducted in 2023 at KPO facilities for the purpose of exercising the actions of level I incident command teams and emergency rescue units amounted to 113 drills (114 in 2022).

Also, in accordance with the requirements of Order of the Minister of the RoK Emergency Response dated 16.07.2021 #349 "On approval of guidelines to develop Emergency Response Plan and conduct emergency response drills at hazardous production facilities" 13 emergency training exercises were conducted, of which 7 emergency training exercises were carried out with involvement of the II FIMC level.

In 2023, practical training was held for donning filter hood:

- AVON NH – 15, 1,677 people were trained in 50 classes,
- SCBA – 802 people were trained in 54 classes.

**Graph 2. Emergency response drills completed in 2021–2023**



KPO continues its active engagement with local authorities in the periods of high water, fire hazard and winter. In March 2023, KPO emergency rescue teams have been supporting Burlin District ESD in carrying out flood control activities for several days.

Throughout 2023, representatives of KPO emergency rescue teams and units responded to 16 calls by going out to settlement to provide assistance in extinguishing steppe fires at agricultural facilities, household outbuildings, and forest belt fires.

In 2023, in the spring flood period Level II headquarters of FIMC were twice mobilized for conducting remedial measures to support local communities.



**THE TOTAL NUMBER OF EMERGENCY RESPONSE DRILLS CONDUCTED IN 2023 AT KPO FACILITIES FOR THE PURPOSE OF EXERCISING THE ACTIONS OF LEVEL I INCIDENT COMMAND TEAMS AND EMERGENCY RESCUE UNITS AMOUNTED TO**

**113**  
DRILLS

The level II and III centres' members took part in the following real mobilizations and drills, which allowed maintaining the readiness level: **GRI 3-3**

**Tab. 5. Level II and III drills conducted in 2023**

Type of drill	Date	Objectives	Participants
Table Top exercise	20 September 2023	<p>"Actions of teams and resources for eliminating oil spill at the intersection of Ural River with KATS pipeline".</p> <p>In the course of the exercise, the following actions were worked out: Emergency Response system delivery and deployment of equipment intended to contain oil on the water surface and skim it, the first-priority actions of the IMT and ICT in case of petroleum products spill on the linear section of the KATS export pipeline, as well as interaction with local executive bodies and WKO ESD.</p>	ERS and KPO units together with WKO Emergency Department
Table Top Exercise "DIAMOND"	24 October 2023	<p>"Loss of well control on Rig 258 at Well 9881".</p> <p>Exercise objectives were to:</p> <ul style="list-style-type: none"> <li>Practice KPO procedures, plans in response to a major emergency incident, involving resources at all levels.</li> <li>Determine a preparedness level of KPO resources and equipment for a major emergency incident with long-term consequences, including multiple casualties, environmental damage, production facilities impact, property losses, production shutdown and reputational damage.</li> <li>Practice a notification and communication process with the Operator Companies, state Regulatory Authorities (simulated), local residents, mass media and relatives of casualties.</li> </ul>	Personnel of Centres of the I, II, III KPO ER levels, the PARIS team

## Community preparedness **GRI 2-23, 2-29, 3-3**

KPO maintains awareness of the community on the procedure for responding in case of emergency situation at the Karachaganak Field and along the export pipeline KATS and general fire safety requirements during fire hazard period.

In 2023, following the approved plan, 22 meetings were held for 184 people with the rural districts Akims and the community located around the Field to discuss such issues as: importance of the central monitoring station, village alarm stations and their intent, abidance by fire safety regulations during farming operations in fire hazard period.

21 meetings were held for 193 people from settlements located along the export pipeline KATS in the Indirborskiy, Makhambetskiy regions of Atyrau Oblast.

12 practical drills with activation of a single warning signal "Attention All" and use of the Village Alarm stations equipment were carried out to exercise joint actions of the rural districts Akimats and responsible people when managing evacuation of the community in case of threat from the field area, interaction with ECC Dispatcher. 133 people were involved during practical drills.

**21 MEETINGS WERE HELD FOR 193 PEOPLE FROM SETTLEMENTS LOCATED ALONG THE EXPORT PIPELINE KATS IN THE INDIRBORSKIY, MAKHAMBETSKIY REGIONS OF ATYRAU OBLAST.**

Additional C-40 sirens were installed in villages Priuralniy and Zharsuat for activation of single warning signal "Attention all" for coverage of the 100% villages population.

GSM block was installed at Dimitrovo village for remote activation of C-40 siren in this village.

To maintain constant readiness of village alarm stations, throughout the 2023, the Community Protection Specialist of the KPO Emergency Response Team jointly with contractor representatives carried out monthly testing of emergency alarm signals and public address systems, as well as the maintenance of this equipment. Such village alarm stations are installed in seven villages that are situated around the Field.



# WHY IS IT IMPORTANT TO US? GRI 3-3

As the whole world is going digital, KPO cannot stay apart and digitalization can contribute to achieving the Company's strategic goals. Some of the pilot projects implemented in KPO have already demonstrated a real business impact, such as reducing the personnel exposure, more effective business processes, cost efficiency and many more.

Nowadays IT/digital assets are around us in business and personal lives, thus it is becoming vital to know how to use them safely. As well Cyber Security is one of enablers of the KPO Strategic Priorities to safeguard our Crown Jewels – people, data and applications, from cyber threats like phishing, ransomware or targeted attacks.

## DIGITALIZATION AND CONTINUOUS IMPROVEMENT SDG 9.4

KPO shares the strides made in our digital transformation journey over the course of 2023. Recognizing the imperative for an integrated strategy, clear transformation goals, effective monitoring, foundational corrections for digital technologies, and professional development of personnel, KPO has made advancements in enhancing its digital readiness and setting a new standard in the O&G industry.

The year 2023 has become a landmark period for KPO as we have assessed our current digital readiness and crafted a comprehensive Digitalization Strategy to elevate our digital capabilities to the desired level. Our strategy is laid out in a digitalization roadmap, encompassing projects across six main portfolios: Baseline, Production, Automation of HSSE Processes, Back-office Processes Digitalization, Ensuring Success of Digital Transformation, and Cyber Security Maturity Program.

2023 Our key digitalization achievements:

- **Telemetry Phase II Completion:** Successfully completed the planned telemetry for 15 wells, enabling real-time data acquisition. This pivotal project has reduced personnel exposure to well sites and enhanced the accuracy and frequency of data analysis, marking a step forward in operational safety and efficiency.
- **Car Ordering Service Pilot:** The initiation of a Car Ordering Service has changed our auto park car utilization and automated the car ordering process. With the production phase slated for 2024, this project exemplifies our commitment to optimizing resources and streamlining operations.
- **E-Learning Platform Udemy Integration:** Our partnership with Udemy to foster continuous learning has just been started in 2023. KPO employees completed over 650 hours of training, with a significant focus on business skills (36.3%), technology skills (51.4%), and personal development skills (12.3%). Popular courses included Microsoft Power BI, Python, Excel, Data Science, and Machine Learning, underscoring our dedication to empowering our workforce with the skills necessary for the digital age.
- **Digitalization of the travel initiating and timesheet approval processes:** with the introduction of approval by e-signature, has brought several benefits to our operations. Here are the key benefits we've achieved through these digital transformations:
  - ▶ **Increased Efficiency and Speed:** The shift to digital processes and e-signature approvals has accelerated the approval times for both travel initiations and timesheet submissions. This means that employees can commence their travel plans more swiftly and have their work hours approved in a timelier manner, leading to a smoother operational flow and quicker turnaround times for project execution.
  - ▶ **Elimination of Paper-Based Forms:** By moving away from traditional paper forms to digital formats, we have reduced our reliance on physical documents. This transition not only contributes to our environmental sustainability goals by decreasing paper use and waste but also simplifies record-keeping, storage, and retrieval processes, making our operations more streamlined and less prone to errors.

- ▶ **Cost Reduction:** The digitalization of these processes has led to a reduction in costs associated with paper, printing, and physical storage. Moreover, the efficiency gains from faster approval cycles, reduce the administrative overhead, allowing our staff to allocate more time and resources to core business activities rather than manual paperwork handling.
- ▶ **Enhanced Security and Compliance:** Digital processes and e-signatures offer improved security features, including audit trails and encryption, which enhance the integrity and confidentiality of our documents. This not only helps in ensuring compliance with regulatory requirements but also builds trust with our clients and partners by safeguarding sensitive information.
- ▶ **Remote and Flexible Working Enablement:** The adoption of digital approvals has facilitated flexibility and adaptability in our workforce. Employees can submit and approve documents from anywhere, at any time, which is particularly beneficial in supporting remote work arrangements and ensuring business continuity in varying circumstances.
- ▶ **Improved Employee Satisfaction:** Streamlining the administrative aspects of travel and timesheet management has resulted in a more user-friendly and stress-free experience for employees. This ease of use and efficiency contributes to higher job satisfaction and engagement, as staff can focus more on their primary duties and less on administrative formalities.
- ▶ **Benefits:** These projects, among others, have not only demonstrated KPO's digital transformation prowess but have also delivered substantial benefits including operational efficiencies, safety improvements, resource optimization, and workforce empowerment. Our proactive approach to digitalization has positioned KPO as a leader in embracing technology to drive growth, sustainability, and competitive advantage in the O&G industry.

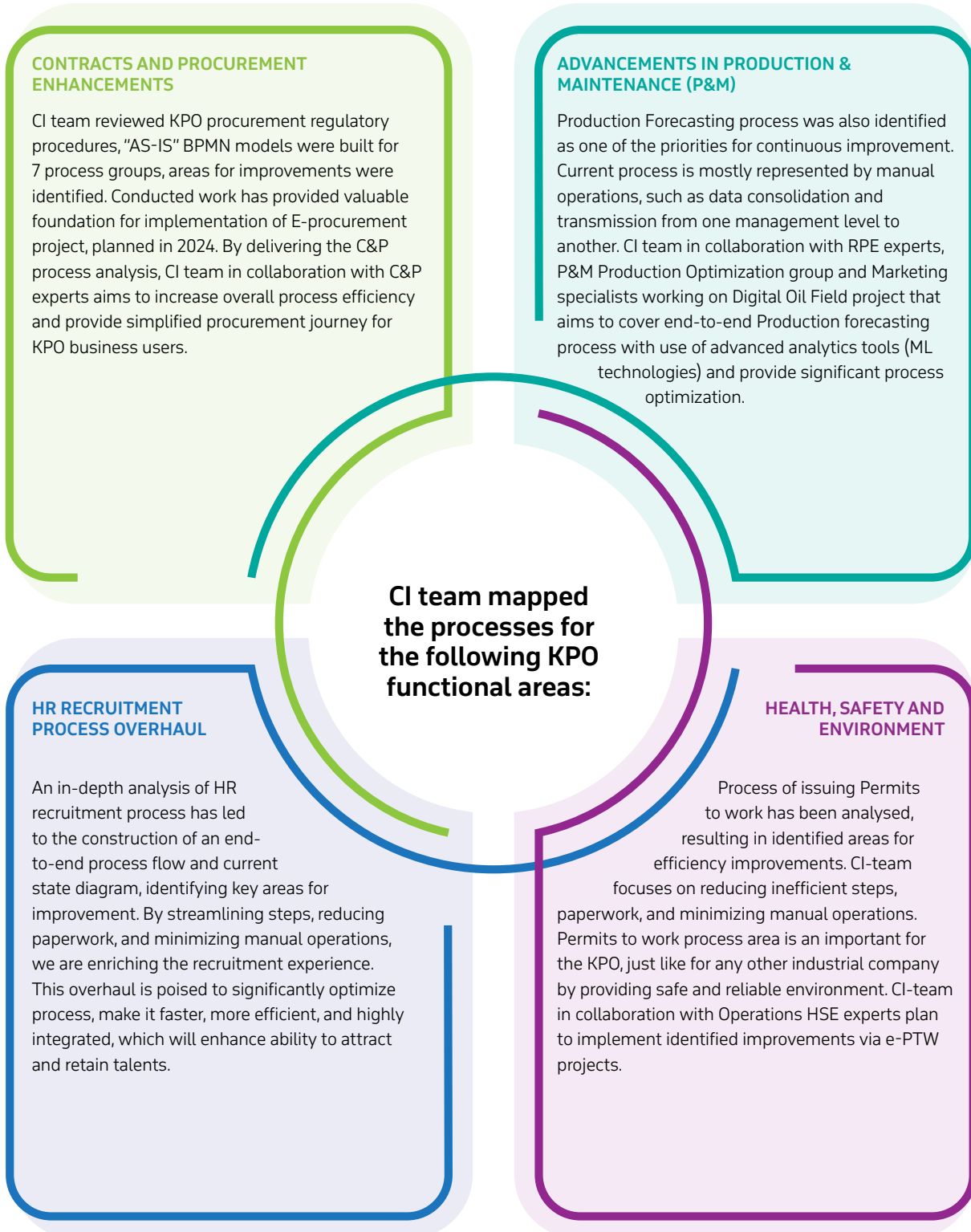
As we look to the future, KPO remains committed to leveraging digital innovation to further enhance our operations, ensure the safety of our personnel, and contribute to the global energy sector's evolution. Stay tuned for more updates as we continue to lead the way in digital transformation.



## Continuous Improvement

In order to get more benefits from digitalization, continuous improvement (CI) team has been formed at KPO. In 2023, Lean Six Sigma (LSS) training course was delivered with support of ENI, 15 KPO employees were

successfully certified as Yellow Belts. Main objective of the course was to focus on developing the common language for business improvements, establish a large-scale system for the Company savings, achieve reduction in operating costs, improve the response time of processes.



These initiatives are part of our broader strategy to enhance operational efficiency, reduce costs, and improve service delivery across the board. DCI team provides support for the KPO Business Units in order to line up digitalization process through analysis and optimization.



## Cyber Security Maturity Programme

Cyber Security Department was established at the end of the 2022 year and the Cyber Security Maturity Program was launched in 2023 in order to reach out level of Oil & Gas supermajors average.

The main results of Cyber Security Maturity Program in 2023:

- **Cyber Security Awareness and Training Campaign (CS A&T) 2023 completed.**

The Campaign consisted of cybersecurity training lessons, phishing simulations, games and monthly awareness bulletins. Employees were informed how to avoid cyber threats, e.g., phishing, spear phishing, ransomware, malware, social engineering schemes, and much more.

One of the main evidences of the CS A&T campaign effectiveness is the results of the phishing simulations – the number of users reporting potentially dangerous emails increased by 303% in 2023. It's a good achievement as according to the National Statistics Bureau, 91% of all cyberattacks begin with suspicious emails and the reason for their success is the human factor.

- **Pilot implementation of Security Operation Centre (SOC) was started with a plan to be completed by the end of 2024.**

The value of SOC lies in round-the-clock monitoring, automatic detection, prevention and analysis of suspicious activity, as well as correlation of actions and recommendations.

Cyber-attacks are fast developing, our target is to continuously improve our security posture.

