



# Sustainable Development Report

# 05

# Sustainable Development Report

## HR Policy

**As part of the HR policy, Embamunaigas JSC strives to ensure correlation between strategic goals of the Company and areas of development and personnel recruitment in order to increase stability and reliability of the Company's business model.**

As part of the HR management and remuneration functional strategy adopted as part of the Development Concept until 2027 of Embamunaigas JSC approved by the Board of Directors, the main goal of the HR Department is to provide the Company with a sufficient number of qualified personnel motivated to achieve the strategic goals through high-quality training and development of employees, search for and implementation of the cutting-edge advanced management tools and methods, strengthening monitoring of executive discipline and ensuring social support for workers.

HR management processes include the following key areas:

- Developing recruitment procedures;
- Improving personnel training system;
- Youth outreaching;
- Developing talent pool management system;
- Improving remuneration and labor rate setting system;
- Effective headcount and personnel costs management;
- HR administration and time tracking.

As of January 1, 2020, the actual number of the Company was 4,928 people. Staff turnover in 2018 was 2.9%.

In order to optimize expenses, the Company is working to reduce and outsource full-time non-core low-skilled jobs which explains staff optimization during recent years.



**Headcount**  
as of January 1, 2020

**4,928**  
people

# Sustainable Development Report [continued]

## HR Policy

### Staff Structure as of January 1, 2020

Category	Actual number	Actual number			including workers
		men	women	engineers	
<b>TOTAL</b>	4,928	4,063	865	1,489	3,439
<b>Administrative and management staff</b>	310	193	117	310	0
Managers	65	56	9	65	
Specialists	245	137	108	245	
<b>Production staff</b>	4,618	3,870	748	1,179	3,439
Managers	236	203	33	236	
Specialists	943	668	275	943	
Workers	3,439	2,999	440		3,439

Embamunaigas JSC implements a program of early retirement from the age of 58 for employees, who have worked most of their life under the harsh conditions of the oil industry and have health issues.

Over decades, Embamunaigas JSC established strong traditions and continuity of generations. Labor dynasties are the basis of the Company's stable long-term development. Today, Embamunaigas employs members of more than twenty family dynasties, with three or more generations, who have connected their lives with the difficult job of an oil worker. The total length of service of some of them exceeds 200 years. They are the dynasties of the Zhylykshiyevs, the Kurmankulovs, the Torekhanovs, the Saliyevs, the Kulbaliyevs, the Bekmurziyevs, the Ondashevs, the Beshimovs, the Korbebayevs, the Ualiyevs, the Bissenbayevs, the Zhakashevs, the Aidabekovs, the Raimbergenovs, the Bazhbenovs, the Kanatbayevs, the Zhanaissovs, the Mangistauovs-Yerzhangaliyevs, the Balgimbayevs and the Balzhanovs.

#### Headcount, people



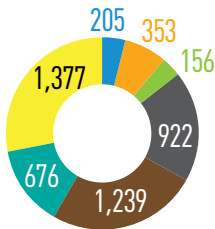
#### Staff turnover, %



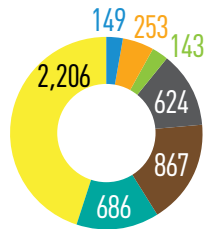
# Sustainable Development Report [continued]

## HR Policy

**Length of service in the Company as of December 31, 2019, people**

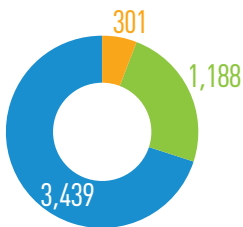


**Length of service in oil and gas industry as of December 31, 2019, people**



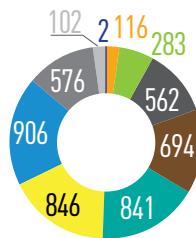
- less than 1 year
- 1-3 years
- 4-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- more than 20 years

**Staff structure by categories as of December 31, 2019, people**



- Managers
- Specialists and officials
- Workers

**Staff structure by age as of December 31, 2019, people**



- under 20 y.o.
- 21-25 y.o.
- 26-30 y.o.
- 31-35 y.o.
- 36-40 y.o.
- 41-45 y.o.
- 46-50 y.o.
- 51-55 y.o.
- 56-60 y.o.
- older than 60 y.o.

### Personnel Training and Development

In order to meet the needs of the Company in highly qualified managerial, administrative and production personnel, Embamunaigas JSC conducts employee training, ensures continuous development of the employees' potential, and retention of highly qualified employees. The Company creates a system of acquisition and improvement of knowledge and skills of employees and their effective use in regular activities.

The Company provides the following types of training:

1. technical disciplines;
2. financial and economic disciplines;
3. language learning;

4. general disciplines;
5. master's, specialized and modular programs;
6. techniques and skills used in the workplace;
7. safety, health and environment;

The Company provides short-term courses and on-the-job training, internships in other structural units of the Company or in other companies, distance learning is applied using the Internet and/or other types of communication. Besides that, we also ensure participation in conferences, round tables, forums, workshops, congresses, and exhibitions. This contributes to extending expertise and outlook broadening, familiarizing with the latest achievements and technologies, new approaches and ideas, successful experience and developments of other companies, and also helps to establish fruitful partnerships.



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### HR Policy | Personnel Training and Development

In 2019, 4,622 employees passed compulsory safety training, 504 employees passed well-kill safety training, 798 employees passed training in blue-collar jobs, 1,663 employees passed training on technical seminars, business trainings, seminars for financiers, etc., including 10 employees – training in EMBA/MBA programs.

#### Modular Training Arrangement

In order to train and develop middle managers, modular programs were developed, which included training in planning and improving production processes, management skills training. After completion of the program, the students presented their projects to improve production processes.

Over the period from 2015 to 2019, more than 350 employees from among the heads of the main workshops, site foremen, geologists, and safety

engineers took part in the modular training programs. In 2019, 70 employees passed modular training in developing communication skills.

As part of an effective system for developing qualifications and personal qualities of employees, we have assessed managing directors, department directors, deputies, heads of services according to the test scenario and personal questionnaire. The total of 60 managers took part in the assessment. Following the assessment, recommendations and report on the test scenario and personality questionnaire were prepared, training plan for key positions was developed.

In 2019, modular training was arranged under the Effective Manager program for department directors, their deputies and service managers.



# Sustainable Development Report [continued]

## HR Policy | Employment Pool Generation and Development

### Employment Pool Generation and Development

Embamunaigas JSC forms employment pool to replace the heads of structural units. The purpose of the employment pool generation is to minimize the risks associated with the recruitment and placement of personnel to fill positions within the Company, improve the quality of employees, improve management efficiency based on targeted selection and training of the most promising managers and specialists.

The established system of employment pool and career growth allows:

- ensuring the reliability of the entire management system, minimizing the elements of chance and subjectivity in the selection and placement of personnel in senior and middle management positions;
- identifying promising employees who are ready to develop the Company in accordance with the strategy, improving employee's motivation, retaining employees by providing opportunities for career growth, enhancing the prospects for self-fulfillment; and
- achieving the optimal placement and rotation of managers and specialists, reducing

personnel risks in the appointment of managers (an on-boarding period).

Following comprehensive assessment, 35 candidates were included in the planned and 25 candidates were included in the talent pool, a new employment pool was formed:

- planned pool (new selection) for key positions of managing directors, heads of PSU, chief engineers – 6 reservists;
- planned pool (reassessment) for middle manager positions – 8 reservists;
- talent pool (new selection) – 13 reservists from among young specialists.

The “Public speaking 2.0” training (trainer Radislav Gandapas) was organized for 97 employees of the MA and PSD, including 27 pool reservists. Pool reservists also passed “Change Management. Leadership”, “Tough negotiations” trainings.

In 2019, 1 employee from the planned pool and 3 employees from the talent pool were appointed to higher positions.

### Employee Engagement

Embamunaigas JSC creates and continuously develops an effective incentive system and improve executive discipline of employees in order to attract, retain and motivate employees, whose qualifications and performance will ensure the successful fulfillment of the Company's mission and achievement of business goals.

The main tasks in engagement and executive discipline are:

- ensuring a unified approach to the remuneration of all employees of the Company and compliance with the achieved performance and fair remuneration;
- developing a system of awards and incentives, including for the creation and introduction of new technologies, implementation of development projects, solution of key financial, economic, social, employment and other issues;
- strengthening the quality control over performance of tasks assigned to employees;

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### HR Policy | Employee Engagement

- raising awareness of employees about the developed and implemented guidance documents within the Company;
- automating the process of setting tasks for the employee with an indication of priority and deadlines, strict monitoring of implementation.

#### Arranging and Conducting 2019 Best Performer Contest

In order to increase employee engagement, including young specialists, an annual contest of professional skill “Best Performer” is held. Winners are awarded with diplomas and monetary rewards.

In 2019, in preparation for participation in the 3<sup>rd</sup> round of the contest, we arranged training at the Tatneft Personnel Training Center in 15 blue-collar jobs.

The 3<sup>rd</sup> round was held among the employees of KMG’s subsidiaries and affiliates on the basis of Tatneft Personnel Training Center (Almetyevsk), 18 employees of Embamunaigas JSC took part in it in 13 blue-collar jobs.

Following the 3<sup>rd</sup> round, Embamunaigas JSC employees got six prizes in five blue-collar jobs:

- Processing unit operator

- Electrician
- Oil and gas production operator
- Layer pressure maintenance operator
- Commercial oil operator.

#### Employee Award and Incentives

In 2019, 2,229 labor veterans and 1,036 employees were awarded and rewarded with state and departmental awards.

Employees and veterans of Embamunaigas JSC were also awarded in honor of the 120<sup>th</sup> anniversary of Kazakhstani oil:

- “Qurmet” order – Zhumagaliyeva Kulyash Uteuovna, labor veteran of Embamunaigas JSC;
- “Yeren enbegi ushin” medal – Adilov Satybaldy, labor veteran of Embamunaigas JSC, Suleimenov Amangeldi Taskinbayevich, head of OGPO Zhaiykmunaigas;
- Certificate of Merit of the Republic of Kazakhstan – Yestleuov Bolat Umbetkaliyevich, oil and gas production operator at Akingen field, OGPO Zhylyoimunaigas.

The anniversary medal of the RoK Ministry of Energy “Qazaqstan munayyna 120 zhyl” was awarded to 2,229 labor veterans and 665 employees.

In honor of the RoK Independence Day, the “Yeren Yenbegi Ushin” Medal was awarded to Kurmankulov Murat Koyshekenovich, electric and gas welder of the OGPU Kenbai, OGPO Kainarmunaigas and to Ayazbayeva Gulnar Naurzgalievna, leading geologist of the production department for the Prorva group of fields development, OGPO Zhylyoimunaigas.



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## Social Projects | Youth Outreach

### Social Projects

#### Youth Outreach

2019 was declared the year of youth by the first President of Republic Kazakhstan – Yelbasy. Embamunaigas JSC has always paid special attention to youth support. The Company implements projects to develop the professional and personal potential of young specialists as part of the continuity of the generations of Emba oil workers and social responsibility.

Embamunaigas JSC employs 694 young specialists under the age of 33, including 66 specialists among administrative and managerial personnel and 628 specialists among production personnel.

The EMG Youth Council was established in 2013, and currently includes about 700 young specialists from the management staff and production departments. Today, the Emba youth, under coordination of the Council of Young Specialists, actively participates in the enterprise's public life, implementation of social and charity projects.

Last year, with the full support of the management of the Company, the Youth Council implemented 15 events for young professionals in professional and personal growth, intellectual development and support of sports, as well as a number of charity projects. In particular, young specialists made a significant contribution to organization of celebrations held last year as part of the 120<sup>th</sup> anniversary of the oil and gas industry.

#### Arranging and Conducting Training Events

In 2019, 9 employees – members of the Young Specialists Council took part in “NON-conference for KMG Young Specialists” youth convention.

19 young specialists who distinguished themselves in their work took part in a recreation program organized by KazMunayGas NC JSC. The program was developed jointly with the Bonas Macfarlane Education Kazakhstan educational center and enables employees to improve their health and practical knowledge of the English language.



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## Social Projects | Youth Outreach

### Young Professionals Day at Embamunaigas JSC

On the occasion of the 120<sup>th</sup> anniversary of Kazakhstani oil and within the framework of the Year of Youth in the Republic of Kazakhstan, the Young Professionals Day forum was held on November 8–10, 2019, in which 120 young Embamunaigas JSC specialists took part.

The event was held with the aim of showing the values of the Company to young specialists through personal experience; form respectful, trusting and effective interpersonal communications; introduce young professionals to the basics of lean production.

Also, “Personal Efficiency”, “Team Building”, “Fundamentals of Kaizen Lean Production”, “Jas Mamandar Kuni (JMK)” trainings were held for young specialists in search of the fifth element of the corporate culture of Embamunaigas JSC.

### Presidential Youth Personnel Reserve

Young specialists Auganov Gibrat Kairatovich, Deputy Director of HR and Remuneration Department, Kabdrashitov Azat Rashitovich, Senior Analyst of the Treasury Department were enrolled in the Presidential Youth Personnel Reserve.

### The Best Oilman 2019

Another young specialist, Yeleuliyev Bereket Madiyevich reservoir pressure maintenance operator of OGPU Kenbai, OGPO Kainarmunaigas, who took 2<sup>nd</sup> place at “The Best Performer” competition on the scale of KazMunayGas NC JSC have also won the oil capital award “Leader of the year” in “The Best Oilman 2019” nomination.



#### Video

Young Professionals Day at Embamunaigas



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## Social Projects | Social Support for Employees

### Kazakhstani Specialists Training

The Company allocates significant funds to social projects in terms of training Kazakhstani specialists. In particular, a dual training project is being implemented since 2015.

Participants of the program:

- S. Utebayev Atyrau University of Oil and Gas (AUOG)
- Apec Petrotechnic Higher College (APEC)
- Ufa State Petroleum Technical University (USPTU)
- S. Mukashev Atyrau Polytechnic Higher College (APHC)
- Makat Engineering Oil and Gas College (MEOGC)

In the period from 2015 to 2019, 117 students passed dual training, 41 students were trained in 2019.

During implementation of the dual training project, following the tests, 52 people were employed in Embamunaigas JSC. 44 people employed in other companies. In total, 82% of dual training graduates were employed.

### Social Support for Employees

The Company provides its employees with a high level of social security. The collective agreement provides for guarantees and benefits, allowances and financial aid. Much attention is paid to solving the urgent problems of each employee: these are social allowances, such as financial aid for health improvement for an annual leave, allowances associated with pregnancy and childbirth, monthly allowance to employees who are on parental leave until a child is 1.5 years old, a lump-sum allowance associated with the death of an employee for a funeral arrangement, a lump-

sum allowance to the family of an employee who died in an occupational accident, payment for the vacation of the employees' children, the costs of health resort treatment covered for employees, temporary disability allowance, arrangement of cultural and sports events, catering for employees, etc.

Also, Embamunaigas JSC closely cooperates with higher and secondary professional educational institutions of Kazakhstan and neighboring countries in terms of training Kazakhstani specialists in the oil and gas industry.

Under the contractual obligations for subsoil use, Embamunaigas JSC paid for education of 101 students. Over 80 students of Kazakhstani and foreign universities and colleges have completed internship at the Embamunaigas JSC fields.

At the initiative of the Safi Utebayev Atyrau University of Oil and Gas (AUOG) and with the support of Embamunaigas JSC on October 30, 2019, a group of AUOG professors went to the facilities of Embamunaigas JSC. During the visit, professors visited Visualization Center, interactive museum, got acquainted with the oilfield facilities of OGPO Zhayikmunaigas and new technologies and techniques applied in production process.

In 2019, Embamunaigas JSC and Salamat Mukashev Atyrau Polytechnic Higher College signed a memorandum on professor training.

The Company also provides social guarantees for voluntary health insurance for a disease. There is a financial aid provided in accordance with internal regulatory documents for treatment and payment

## Sustainable Development Report [continued]

### Social Policy

for medical operations, in the event that the cost of treatment exceeds the limit of the insurance program.

In 2019, material assistance under conditions of the Collective Agreement amounted to 1.04 bln

KZT. In particular, 1,542 people underwent sanatorium-resort therapy for a total of 391 mln KZT, 426 mln KZT were allocated for the rest of 1,454 children of our employees.

### Social Policy

In 2019, Embamunaigas JSC received “Zhomart Zhurek” award in “Tugan Ulke” nomination for implementing socially significant projects on a voluntary and gratuitous basis to support socially vulnerable groups of the population. The Company always pays great attention to supporting local communities and employees.

On the eve of the 120<sup>th</sup> anniversary of Kazakhstani oil in the Karashungul area, management and employees of Embamunaigas JSC paid tribute to the workers of the first Emba fields on the site of the historical well No. 7, which gave the first oil gush on Kazakh ground in 1899. The ceremony was attended by administration of the Zhylyoi region, representatives of partner companies and veterans of the oil and gas industry.



Video  
Karashungul



# Sustainable Development Report [continued]

## Social Policy

Besides, on the 120<sup>th</sup> anniversary of Kazakhstan oil, Embamunaigas JSC arranged the Kazaksha Kures “Munayshy Barysy” tournament. Twenty employees of production structural units fought in the open weight class over 90 kg for the title of the strongest Emba oilman.

On September 1, 2019, on the campus of the Atyrau University of Oil and Gas, a monument to Safi Utebayev, prominent Kazakhstani oilman, discoverer of the fields of Western Kazakhstan, which was built with the financial support of Embamunaigas JSC, was unveiled.

On the same day, the S. Utebayev Atyrau University of Oil and Gas, with the organizational and financial support of Embamunaigas JSC, hosted the “Kazakhstan oil: past, present and future” international reserach-to-practice conference dedicated to the 120<sup>th</sup> anniversary of Kazakhstani oil.

In September – October, creativity competitions were held in all divisions of the Company on the occasion of the 80<sup>th</sup> anniversary of Fariza Ongarsynova, famous Kazakh poetess, national writer of the Republic of Kazakhstan, State Prize laureate. The winners were awarded a trip to the “Fariza” performance of the Sovremennik Theater in Moscow.

Last year, Embamunaigas JSC team donated housing to eight large and low-income families of the Kurmangazy, Isatai, Kyzylkoga, Zhylyoi and Makat districts of Atyrau region, which was acquired for one-day wages of workers.

Emba people took part in the “Arys. Biz birgemiz” republican campaign. Thanks to voluntary help of employees, school uniform was purchased and transferred for more than 400 pupils of 16 schools from lower-income families of Arys town who were injured in the explosions.

Embamunaigas JSC was one of the first to start implementation of the “Road to School” republican campaign. With funds raised by the team, about 70 pupils from large and low-income families of Atyrau region were provided with school uniforms and supplies.

On the eve of New Year, a traditional charity fair was held at the head office of Embamunaigas JSC selling handmade and baked goods. With the proceeds from the fair, New Year’s gifts were purchased and donated for more than 200 children of Atyrau region from socially vulnerable groups of the population.

The Company donated 126.481 mln KZT in accordance with the 2019 Social Program for Atyrau region infrastructure development and 131.318 mln KZT were budgeted for 2020.



### Video

Emba oil workers provided uniform to more than 400 pupils of Arys town



### Video

Good traditional Emba fair





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### Social Policy

#### Summary on the work performed by the Women's club "Munayshy Kyz" ("Girl-Oiler") for 2019.



On the 8<sup>th</sup> of March 2018, on the eve of the International Women's Day, the Women's club "Munayshy Kyz" has been established in Joint-Stock Company Embamunaigas.

The purpose of the Women's club "Munayshy Kyz" creation is to give the possibility for the full development of Emba inhabitants, women-oilers, to provide them with the psychological, medical and legal advice according to their needs. In this regard, in all the departments of the company the club members regularly carry out the training, workshops and other public events with educational meaning. Below are briefly presented some of events organized by this club members and which have had the positive effect.

In March 2019, in honor of the Women's club "Munayshy Kyz" creation anniversary, was carried out the Mobile Meeting of the Energetic club KAZENERGY on the topic "Role of women in the Oil-gas industry". The active girls and women who work in the Electric power branch of the Oil-and-Gas industry of our country, participated in

this Mobile Meeting, conducted with the aim of the experience sharing in the field of gender politics development in the oil and gas companies. The main point of the agenda was the joint work revival. The advanced enterprises of our country, in particular, KAZENERGY Association, Khalyk Bank, Tengizchevroil, NCOC, Atyrau Oil refinery, "Karazhanbasmunai", "Mangystaumunaigaz", "Kazgermunai", Atyrau Regional Association of Business women, Atyrau Regional Akimat and the delegations from other enterprises took part in the Forum. In the course of the Forum were raised and widely debated the questions of the family values revival, education of the new generations. One may state that, the Forum, in fact, turned into the open dialogue arena where the true debates started. The practical advice, necessary for the full development of the human personality, combination of the labor and family unity on the way toward the family prosperity preservation of the women-oilers, who make to date near 20 percent of the crew, was expressed.



#### Video

Munayshy Kyz  
2019



## Sustainable Development Report [continued]

### Social Policy

One more event, organized by the club “Munayshy Kyz”, is the large-scale interview with writer Zeynep Akhmetova, who widely promulgates among the general public the path of life of the valiant son of the Kazakh people, Bauyrzhan Momyshuly, and who popularizes the customs and traditions of Kazakhs. In the basis of the meeting conducted by the crew of six departments of the Company, were the frank talks concerning the questions of the national ideology, education of the generations, interrelation of the spouses and others. The writer tried to answer at the most openly and constructively to the questions of the women-oilers. Also was raised the subject of the women-oilers activity increasing in our society, job ladder promotion of the talented and educated girls due to their productive labor, conception of the responsible generation out of the successful women by means of the women activity increasing in the private life and social life and many-many other things.

Alongside with that, it should be specifically mentioned the carrying out within the Emba enterprise territory, of the events dedicated to the 80-year jubilee of poetess Fariza Ongarsynova, the celebrated “Kazakh poetry Tsarina”. When the event in the honor of the poetess memory, may be said, that the Emba employees risen to the occasion. Seeing the completely different nature of the oilers, Emba enterprise employees, that they could show at this event, we once again became convinced that there were a lot



of the talented people in the Emba enterprise. The event winners, distinguished by their talent, were given the opportunity to attend the play “Fariza” performed in Moscow with the support of the RK Embassy. This will undoubtedly give the special breakthrough to the labor of our specialists who constantly work in the field conditions.

Embamunaigas will continue to give support to the Women’s club “Munayshy Kyz” activity at the appropriate level. Supporting the women-oilers, the Company makes its contribution, however insignificant, to the generations education and family values preservation, because the responsible generation could be conceived only from the successful woman. And the responsible generation is the future of our country. The family prosperity entails the productive labor. This must not be forgotten.



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## Occupational Health and Safety, Fire Safety and Environmental Policies

### Occupational Health and Safety, Fire Safety and Environmental Policies

Most of Embamunaigas JSC fields are at a late stage of exploitation. The Company has been producing oil since as far back as 1899. In such conditions, environmental protection, occupational safety and labor protection are our special value – and the Company's management pays special attention to these issues.

The strategy for labor and environmental protection of Embamunaigas JSC includes the following main areas:

#### Occupational Health and Safety

##### Objectives:

- Reducing the number of lost time incidents (LTI).
- Prevention of production incidents and accidents.
- Modernization of fire safety system.

#### Environmental Protection

##### Objectives:

- Reducing air emissions.
- Improving quality of wastewater discharges.
- Production waste management.
- Oil spill response and oil contaminated land treatment.

#### Occupational Safety

Occupational safety is one of the priorities for the Company's management. Production activities of the Company's structural units are associated with increased danger, and Embamunaigas JSC is actively working to reduce the risks of life-threatening accidents and other risks to personnel.

#### Health protection

##### Objectives:

- Reducing impact of production factors on the health of staff.
- Providing quality pre-medical and emergency medical care.

Embamunaigas JSC is a national oil and gas company that carries out a full production cycle from hydrocarbon exploration and production, transportation and processing to provision of specialized services. The Company is fully aware of its responsibility to employees and society for creating and maintaining safe working environment at all stages of production activities and minimizing negative environmental impacts.

The Company strives to maintain the highest standards of industrial safety at all stages of the production cycle and aims to constantly improve the management system of labor protection, industrial, fire safety and environmental protection as the key element of production management. The Company is committed to complete prevention of industrial incidents, accidents and spills, and ensuring minimal negative impact on the environment.

In 2019, the total expenditure on activities for occupational health and safety amounted to 1.3 bln KZT.

In order to encourage engagement in occupational safety, a review competition is held

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## Environmental Protection

on an annual basis for the best arrangement of work, improvement of the esthetics of production among the workshops and sections of the primary and secondary production.

The Foreman Days are held on a quarterly basis at the production and structural units in order to provide methodological assistance to the foremen in the arrangement of work on occupational safety, with lectures and seminars held by specialists of departments, specialized organizations for occupational health and safety. On these days, among the foremen and mechanics of production workshops and sites, competitions are held for the best arrangement of work on occupational health and safety; the winners are awarded with cash prizes.

In order to avoid and prevent accidents due to weather conditions in the course of hazardous work and to protect the life and health of employees, services are purchased for the daily provision of information on weather conditions in the region.

An important area of work in labor protection is provision of workers with regulatory and technical documents on labor protection, issue of HSSE journals and provision of production facilities with warning boards and safety signs.

Compulsory medical examination and compulsory employee insurance against occupational accidents are provided.

Services to prevent occurrence and liquidation of oil and gas showings, open gas and oil gushes are being purchased. Work to ensure fire safety is in progress.

During 2019, five accidents were registered in the production structural units of the joint-stock company. A comprehensive analysis of all cases was carried out, conclusions were drawn and measures were taken to prevent their recurrence. There were no fatal accidents.

## Environmental Protection

The Company conducts continuous monitoring of environmental components (air, water, soil, etc.). The environmental protection and prevention of environmental pollution in the course of its production activities are reduced to determining the expected impact on the environment components, developing environmental protection measures that minimize the potential impact.

Embamunaigas JSC strives to minimize the negative impact on the environment, improve environmental safety, use natural resources rationally at every stage of the production cycle (from exploration and production of hydrocarbons, transportation and processing to provision of specialized services).

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## Environmental Protection | Impact on the Atmospheric Air

### Impact on the Atmospheric Air

The Company continuously monitor and control air pollutant emissions, including sampling.

In 2013, as part of the Associated Petroleum Gas Development and Processing Program, gas treatment units were commissioned at the Eastern Makat field of OGPO Dossormunaigas and in 2014 at the S. Balgimbayev field of OGPO Zhayikmunaigas. Following the commissioning of these production facilities, the volume of associated gas burning in furnaces and, accordingly, formation of pollutant emissions into the atmosphere from stationary sources of pollution decreases.

As part of this project, Embamunaigas JSC and Akimat of Atyrau region signed a Memorandum on the transfer of marketable gas at a low price to vulnerable segments of the population of Atyrau region.

In 2017, the Desulfurization of Associated Petroleum Gas Unit was launched at the Prorva Group of Fields (CGTU), with a capacity of 150 mln m<sup>3</sup> per year. The project provides for purification of associated petroleum gas from hydrogen sulfide. The unit will produce: marketable gas, marketable granular sulfur, stable gas condensate.

### Associated Gas Utilization

Embamunaigas JSC has implemented a number of associated petroleum gas utilization programs aimed at reducing and in the long term 100% eliminating associated petroleum gas flaring.

Implementation of the programs makes it possible to solve the issues of reducing emissions into the atmosphere, and thereby reduce the contribution of gaseous emissions

Specific gross emissions of pollutants over 2019 amounted to 0.0011 tonnes/year per tonnes of crude hydrocarbon production.

### Greenhouse Gas Emissions (CO<sub>2</sub>)

The main activity of Embamunaigas JSC is oil production, collection and preparation of crude hydrocarbons to marketable products in the fields. Production activities of Embamunaigas JSC are inevitably associated with atmospheric emissions with direct greenhouse effect: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).

The main sources of pollutant emissions in the production process are oil heating furnaces, boiler rooms, flare plants, diesel power plants, mobile welding units.

In order to monitor greenhouse gas emissions (parameters for calculating emissions), the Company collects information on changes in activity intensity, plant (process) parameters and controls the corresponding level of greenhouse gas emissions to take the necessary measures to prevent excess emissions or reduce them.

to the greenhouse effect, reduce environmental risks due to the elimination of fines for excessive associated gas burning.

In June 2017, the Company launched a large project – integrated gas processing unit of the Prorva group of fields with a capacity of 150 million m<sup>3</sup> per year. Technological scheme for the associated petroleum gas preparation is

## Sustainable Development Report [continued]

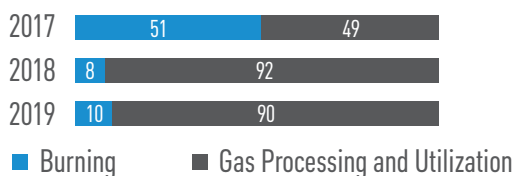
### Environmental Protection | Soil Pollution Prevention

based on such processes as amine purification of gas from hydrogen sulfide, low-temperature condensation, and a granular sulfur production unit.

Previously, similar associated petroleum gas utilization units were launched at the Company's production structural units – OGPO Zhaiymunaigaz (S. Balgimbayev Field) and OGPO Dossormunaigaz (Eastern Makat Field) in Isatai and Makat districts of Atyrau region. In addition to minimizing the adverse environmental impact, these units supply natural gas to the residents

of the three districts of the region at a beneficial price.

**The Level of Associated Petroleum Gas Utilization in Percentage, %**



### Soil Pollution Prevention

In order to improve the environment in the region and make a comprehensive assessment of the current state of the soil layer within the contract area of Embamunaigas JSC, we started to conduct a research on the prevention of land desertification with the development of methods to combat desertification, preserve and restore lands subject to desertification as a result of human activities in 2019. The purpose of the study is to identify disturbed lands, free-moving sand areas and develop specific measures for the restoration

of disturbed lands and the prevention of land desertification.

Embamunaigas JSC is investing heavily in projects aimed at cleaning historically polluted areas. In 2019, as part of cleaning historical pollution, 38 hectares of oil-contaminated land (116,005 tonnes of contaminated soil) were cleared. It is planned to complete the cleaning of the land historically polluted with oil products within the boundaries of the Embamunaigas JSC mining allotment by 2022.

**Plan for Cleaning Contaminated Lands of Embamunaigas JSC**

2018 (actual)		2019 (actual)		2020 (plan)		2021 (plan)		2022 (plan)	
tonnes	ha	tonnes	ha	tonnes	ha	tonnes	ha	tonnes	ha
99,477	24	<b>124,742</b>	<b>35</b>	143,310	24	137,277	38	90,532	16

When conducting oil operations, the Company takes measures to prevent, contain and respond

to accidental spills. There are accident response plans at the site facilities.

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# Sustainable Development Report [continued]

## Environmental Protection | Waste Management

### Waste Management

Embamunaigas JSC pays close attention to the production waste reduction in order to minimize environmental impact.

The Company allocates funds for projects aimed at cleaning historically contaminated areas and processing contaminated soil and oil sludge.

Recycling of secondary production waste (used lamps, oils, rags, etc.) and solid waste is carried out by transferring it to specialized enterprises.

The Company carries out an inventory of sources of generation of production and consumption waste, compiles certificates for each type of waste and develops waste management guidelines.

In 2018, under instruction of the Chairman of the Management Board of EMG, the Green Office project was launched in the Company's management staff. The project's objective is careful handling and saving of office resources, namely, used paper, as well as development of a culture of separate waste paper collection among Company employees. Later on, this project will be launched at the production structural units of Embamunaigas JSC.

Plastic causes grave damage to the environment, from its production to disposal. In this regard, Embamunaigas JSC plans to launch a project to partially (later on – completely) stop using plastic bottles in the fields.

### Water Protection

Embamunaigas JSC works towards careful and rational water management. Following the example of A. Aidarbayev, the Chairman of the Management Board of KazMunayGas NC JSC on July 1, 2019, as part of the HSSE Forum of General Directors, the Chairman of the Management Board of Embamunaigas JSC signed the Water rational management commitment.

As part of the rational use of fresh water, Embamunaigas JSC conducts research and further use of groundwater for production needs of the Company's facilities in the South Emba basin and the Kaynar massif with estimation of the groundwater reserves of the Alb-Cenomanian deposits. The program will reduce the Company's dependence on consumption of the Volga water for industrial and domestic needs.

At the Company's facilities, domestic wastewater generated is discharged through an external free-

flow sewage system to its own sewage treatment plant with subsequent discharge of treated wastewater to its own wastewater receivers, such as filtration fields or evaporation fields.

There is a grid of observation wells available to monitor the state of groundwater around the evaporation fields.

Embamunaigas JSC does not discharge polluted water into natural surface water bodies. In 2019, the water consumption for the Company's own needs amounted to 432.652 thous. m<sup>3</sup>, which is lower by 437 thous. m<sup>3</sup> as compared to 2018. In order to prevent the impacts on coastal and aquatic ecosystems, a protective dam is fortified within the Prorva Field at OGPO Zhylyoimunaigas, and flood-prone and flooded wells of Tazhigali field are monitored.

# Sustainable Development Report [continued]

## Environmental Protection | Biodiversity

In 2018, the “Rational Use of Water Resources” strategic project was elaborated. The project’s objective is to create a system for efficient use of water resources at Embamunaigas JSC that will

enable comprehensive planning, management, rational use of water resources, as well as reduce negative impact on the environment.

### Biodiversity

The contract territory of Embamunaigas JSC is located in the desert zone and belongs to the Caspian Province of the subzone of brown soils. Soil formation conditions in the desert zone are characterized by extreme continental climate, hot dry summers and cold winters, high daytime and low nighttime temperatures in summer, dryness, low precipitation, intense evaporation and plentiful sunlight in the summer.

#### Flora

The vegetation within the territory of production facilities is characterized by the predominance of desert and steppe elements; there are typical halophytic (salt-loving) plants in some places with *Echinochloa*, *Halocnemum strobilaceum*, *Suaeda prostrata* Pall, etc.

In sandy areas, psammophytic and shrubby plants (*Calligonum aphyllum*, *Atraphaxis spinosa*, *Tamarix laxa*) involving ephemers and ephemeroids (*Poa bulbosa*, *Tulipa schrenkii*, *Lepidium perfoliatum* L, *Descurainia sophia*, *Erysimum cheiranthoides* L, *Eremopyrum orientale*, etc.), are more common, plants with *Artemisia arenaria* are widely represented, wormwood plants with *Artemisia lercheana*, *Artemisia terrae-albae* are more rare.

Halophytic vegetation is common – *Petrosimonia triandra*, *Atriplex tatarica*, *Ceratocarpus arenarius*, *Salsoa nitraria*, *Salsola pestifera* and *Salsola foliosa*, *Salsola paulsenii*, etc. Often, ephemerals develop among halophytes – for example, *Eremopyrum triticeum*, *Lepidium perfoliatum* L, and *Descurainia sophia*. Shrubs are less common.

Preservation of all vegetation elements ensures stability of the desert ecosystem, as it is vulnerable, prone to degradation under conditions of man-induced overload, as well as balanced conservation of the region’s biological diversity.

#### Fauna

Fauna of the enterprise’s production area is quite abundant. There are about 39 species of mammals. In addition to common rodents (hare, ground squirrel, gerbil, jerboa, etc.), there are predators, such as wolves, corsac foxes, foxes, wild cats, weasels, etc.; ungulates, such as goitred gazelle, saiga and boar; reptiles – viper, whip snake, grass snake, several species of lizards, as well as frogs and toads.

The ornithofauna species diversity of the territory of Embamunaigas JSC is due to abundance of migratory birds – at least 154 species migrating along the Caspian coast in spring and autumn. Generally, the ornithofauna of the area numbers up to 223 species of nesting, migratory or wintering birds, which is about half of birds species of Kazakhstan. Up to 40 species of birds nest in the wetlands of coastal stations, 20 species of birds nest in desert stations.

#### Measures to Reduce Possible Negative Impact on the Wildlife

Environmental protection and reduction of the impact on biodiversity in the production process are in the focus of attention of Embamunaigas JSC. Impact on the environment components is evaluated and a plan of environmental measures that minimizes the possible impact is developed.



## Sustainable Development Report [continued]

### Environmental Protection | Energy Efficiency

The main measures to minimize the adverse human impact on the flora include:

- forbidding staff from hunting animals, aimless killing of reptiles;
- strict adherence to technology;
- prohibited feeding and luring wild animals;
- prohibited poaching and all types of hunting;

- restoration of degraded land.

Environmental monitoring of the state of the environment in the area of location of the facilities is carried out, including monitoring of the state of atmospheric air, groundwater and wastewater, soil, flora and fauna. The amount of funding this work in 2019 amounted to 58.18 mln KZT.

### Energy Efficiency

The Energy Management System is applied at Embamunaigas JSC, which was developed in accordance with the international standard ISO 50001. The ISO 50001 standard was introduced in 2013 in accordance with the Law of the Republic of Kazakhstan “On Energy Saving and Energy Efficiency Improvement”.

The Company’s management determined and approved the Energy Management Policy, set the relevant energy management goals, developed measures to improve energy performance. In 2019, recertification of Embamunaigas JSC was carried out according to the international standard ISO 50001:2011 and energy management certificate for 2019–2021 was received.

In 2019, the regular energy audit of Embamunaigas JSC was carried out, which included comprehensive energy audit of

the existing facilities of the Company to assess the actual state of the use of fuel and energy resources, identify main causes of losses, develop recommendations aimed at reducing the identified energy saving losses. Institute of Electricity Development and Energy Saving JSC presented a positive conclusion on compliance of the energy audit with requirements of legislation of the Republic of Kazakhstan. Based on the information received, Embamunaigas JSC is developing an action plan to further improve energy efficiency.

The actual key energy efficiency indicator in 2019 was 0.050 TFOE/tonne (in 2018 the indicator was 0.053 TFOE/tonne)

# Sustainable Development Report [continued]

## Environmental Protection | Innovations

Indicators	UoM	2019
Total energy consumed	TFOE*	144,564
Oil sales	tonne	2,874,606
Key Energy Efficiency Indicator (baseline)	TFOE/ tonne	0.07
Key Energy Efficiency Indicator (actual indicator)	TFOE/ tonne	0.050

\* TFOE – tonnes of fuel oil equivalent

### Innovations

The Company conducts researches, surveys and other developments in the area of environmental protection. The methods of disposal and detoxification of harmful industrial substances and motor vehicle emissions are studied; the automated production of pollutant monitoring and control systems is developed, which is of current importance due to a huge area of the Company's production facilities; production waste disposal are regulated; and other measures are taken.

The Company also provides environmental awareness raising among employees of the enterprise and the population of the region and is working to improve the skills of specialists in environmental protection.

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