the value chain efficiency, business diversification and expansion of the hydrocarbon product portfolio.

One of the main objectives for KMG and the entire oil and gas industry in Kazakhstan is the processing and commercialisation of re-injected associated gas, especially at the major oil and gas projects (Tengiz, Kashagan and Karachaganak). A number of projects in this field are underway in Kazakhstan, including the processing of propane (polypropylene production), ethane (polyethylene production) and butane (butadiene production) from the Tengiz field, as well as construction of gas processing facilities at the Kashagan field.

In addition to its advantageous location close to the feedstock production facility, the key competitive advantages of the PE project include:

1. high ethane fraction content (up to 14%) in the feedstock;
2. attractive cost of feedstock;
3. lower infrastructure costs, as they are split among several projects;
4. advantageous location and access to main markets;
5. accumulated KMG experience and expertise in implementing large-scale projects of refining facilities upgrade and construction.

Polyethylene and ethylene copolymers serve as the basis for a wide range of products widely used in the national economy: gas, hot and cold liquid pipes, fittings, films of all grades (food, packaging, bags, etc.), fibres, non-woven materials, monofilaments, film threads, packaging materials, technical, household and medical items, food contact materials, toys, etc., for the manufacture of various containers of large and small size, pallets, crates, etc.

Granulated polyethylene is a non-hazardous non-toxic product. It does not produce toxic emissions at room temperature and is not harmful to human health if in contact with skin. No special precautions are required for working with it. However, small polymer dust when breathed in and entering the lungs can cause sluggish fibrotic changes in the lungs. Due to its low conductivity, polyethylene can generate static electric charges.

When in a stable state, polyethylene is not harmful to the environment as it does not form toxic compounds at ambient temperature when exposed to atmosphere or wastewater where other substances or factors are present. Polyethylene and the additives it contains are known to cause no damage to the ozone layer.

The Company plans to supply finished products to both domestic and international markets. The capacity of Kazakhstan's domestic market is estimated at about 180.000 tonnes of polyethylene per year, with an expected annual growth rate of 4% on average. Target export markets include the CIS, China, Turkey, and Europe, where the consumption of polyethylene, including imported one, is also expected to go up. Located at the crossroads of transport corridors connecting Asia and Europe, Kazakhstan has a favourable trade, economic and strategic position.

To date, a feasibility study for the PE project has been prepared to international standards, with design and estimate documentation expected to be developed this year.

The Company has entered into licence agreements with Chevron Phillips Chemical and Univation Technologies, global leaders in this field, to use MarTECH® ADL and UNIPOL™ PE Process for manufacturing a wide range of products, including premium high-density polyethylene which is in consistently high demand worldwide.

Given its technical complexity, high capital intensity and a number of other factors, the PE project is planned to be implemented in partnership with other industry players, creating positive synergies for all its participants.

The pattern of the PE project financing is under development and involves a combination of borrowings and the Company's own funds.

The PE project is at an early stage and the final investment decision on it will take into account all objective factors, including payback and economic feasibility. To assess economic feasibility, KMG has minimum return and payback requirements for investment projects.

The PE project has significant social and economic benefits for the country as it will help maintain social stability in the region and create new jobs. In particular, about 8.000 jobs will be created during the construction and 875 permanent jobs – during the operation. The project is estimated to contribute 1.2% to the national GDP.

If approved, the PE project will improve the efficiency and diversification of the Company's business, as well as the competitiveness of the country's economy as a whole due to the production of advanced and high-margin products.

SERVICE PROJECTS

KMG coordinates service projects by maintaining current production levels, implementing new projects, and improving competitiveness as well as takes into account its leading role in maintaining social stability in the regions of its footprint. It should be noted that oilfield services are a socially sensitive sector. As some oilfield services are unprofitable, this inevitably leads to extra costs resulting from the need to retain employees regardless of current operational needs and meet all obligations under the collective bargaining agreement: benefits, medical insurance premiums, and upskilling costs.

Service infrastructure

KMG's service operations are supported by 10 key companies.

Key services:
- drilling and developing oil and gas wells;
- providing well services and workovers;
- transporting freight and passengers, providing field transportation and maintenance;
- providing maintenance, repair, set-up, and testing services for electrical installations and cathode protection; commissioning and routine servicing of electrical equipment;
- operating offshore and onshore drilling rigs, oil and gas production engineering, drilling services;
- servicing measuring equipment, automation systems, and telemechanics, providing telecoms, radio, cable or satellite TV services at oil fields; checking and repairing measuring equipment; and servicing security alarms;
- servicing transport GPS monitoring systems;
- building steel and fibreglass pipelines for oil transportation, building gas pipelines, and constructing oil and injection wells;
- reconstructing oil pipelines, water pipelines, and roads;
- producing and transporting drinking water, ensuring sea water transport;
- catering, maintaining social facilities, etc.

To maintain the current production levels, KMG holds annual activities aimed at ensuring efficient production, improving working conditions, and upgrading fixed assets.

Development projects

Satti jack-up floating drilling rig is the first drilling rig built entirely in Kazakhstan according to the world standards. On 25 January 2019, KMG and SOCAR signed the Memorandum of Understanding as well as Joint Venture Agreement on the rig operation to perform drilling at Absheron structure, Azerbaijan sector of the Caspian Sea, operated by BP. The upgraded rig capacity increased from 453 to 680 tonnes.

From 15 August 2021 to 5 June 2022, the rig successfully drilled three wells (NKX-1, VNEX-01, QBDX-01) on BP's SWAP structure. On 6 June 2022, the rig was installed at the CDC berth and hot stacked.

Implementation of the project will improve KMG's competitiveness, provide the opportunity to become one of the offshore drilling leaders, and raise professional qualification of the operational staff according to the global criteria.

To maintain and develop oilfield services in 2022 and beyond, KMG has defined the following strategic initiatives for improving the service quality that will contribute to oil production ramp-up:
- building an efficient target portfolio of oilfield services;
- making oilfield service companies breakeven.

To achieve these objectives, various activities are required, including automation of business processes, implementation of segregated accounting, initiatives to ensure high levels of staff competence, building an effective industrial relations system, increasing the efficiency of processes, API Q1 and Q2 certification.

As part of implementing the IR action plan in the Samruk-Kazyna Group, IR teams/departments were established in all oilfield service subsidiaries from the beginning of 2022 and, accordingly, employees responsible for the development of industrial relations were appointed by service subsidiaries and associates and by contractors. The aim of industrial relations is to maintain a favourable working environment with zero tolerance for adverse social and living conditions and all forms of workplace violence, and develop

internal communications and effective interaction with contractors. During the year, scheduled workplace, accommodation and catering audits of contractors were carried out and IR screenings were conducted. Remedial action plans were drawn up and implemented. Throughout the year, IR specialists together with top managers met with contractors' employees to address their issues and concerns in order to stabilise the social situation and dampen the protest mood among contractors' employees.

Certification to API Specification Q2 for oilfield service assets is designed to raise the quality of oilfield service to the level of compliance with the best and accepted practices of API international standards for the oil and gas industry. Work was carried out to implement and adapt the requirements of the API spec Q2 and an application for certification was submitted.

Subsidiaries and associates rendering oilfield services and prepared for certification:
- Oil Services Company;
- Oil Construction Company;
- MangistauEnergoMunay;
- OzenMunayService.

New projects

Construction of Ozenmunaigas' autonomous power station

The project was initiated in order to cut the cost of electricity, reduce oil production costs, minimise electricity losses during transportation and address the underproduction of oil due to emergency shutdowns and capacity shortages in the Mangistau Region's power system. The wear of the energy systems of Mangistau Atomic Energy Complex and Mangistau Regional Electricity Network Company exceeds 70%, as they have been in operation for more than 30 years, and the region faces a steady shortage of generating capacities. Ozenmunaigas has no back-up power supply sources. The combination of these factors results in power outages and mass downtime in the oilfield, disrupting the technological operation of oilfield facilities and regularly causing underproduction of oil. The project aims to provide an uninterrupted and stable power supply to Ozenmunaigas' oil production facilities, reduce the cost per unit of oil produced by cutting the cost of electricity, and ensure synergy for the power supply of the new KazGPZ facility.

Implementation period:
- 2021–2022 – development of feasibility study;
- 2023 – development of design and estimate documentation;
- 2023–2025 – construction of the autonomous power station.

Desalination plant construction

- The project of seawater desalination plant is being implemented in accordance with the Nationwide Action Plan and with the Comprehensive Plan of Socio-economic Development of Mangistau Region for 2021–2025. The purpose of the project is to provide Zhanaozen with fresh water for domestic and industrial use and reduce the load on the Astrakhan–Mangyshlak main water pipeline. The planned design capacity of the plant is 50.000 m^3 per day. The desalination plant construction forms an integral part of the comprehensive water supply project for Western Kazakhstan. The decision to implement the project was taken after reviewing the concept of reconstructing and expanding the main water pipeline to cover water shortages by 2025.
- Given the expected population growth and applicable standards, the population of Zhanaozen will consume about 49.8 thous. m^3 per day by 2030.

Implementation period:
- 2021–2022 – development of feasibility study;
- 2023 – development of design and estimate documentation;
- 2023–2024 – desalination plant construction.