AN EVALUATION OF ERG'S TOTAL CONTRIBUTION TO THE ECONOMIC AND SOCIAL DEVELOPMENT OF KAZAKHSTAN

2013-2018 STUDY

NOVEMBER 2019

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1.KEY RESULTS

» ERG's total contribution to Kazakhstan's social and economic development between 2013 and 2018 amounts to:

KZT 5 trillion of gross value added to the state budget

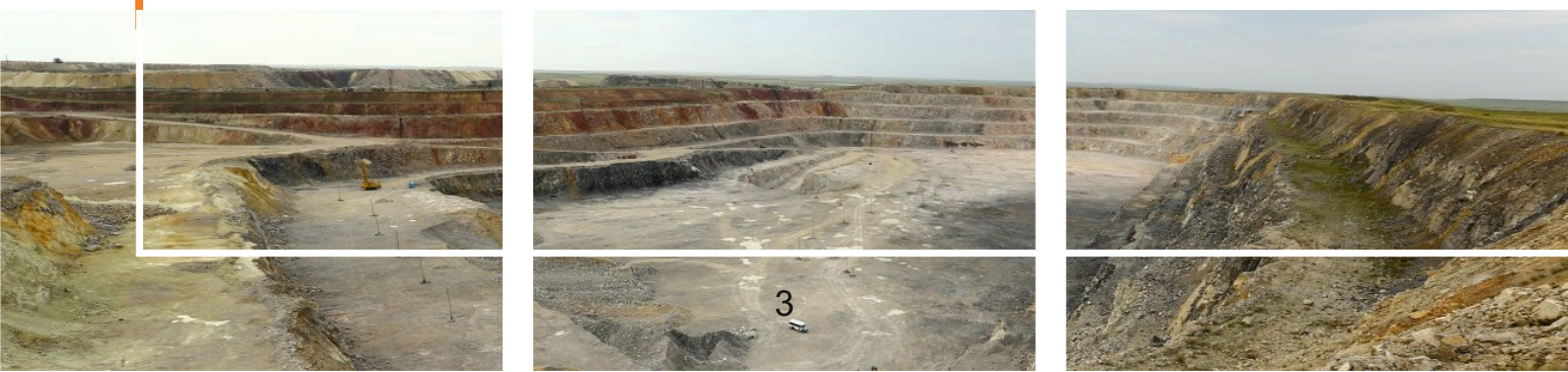
KZT 9.2 trillion of produced goods and services

KZT 1.42 trillion of personal income

KZT 1.29 trillion in taxes and other mandatory charges

More than KZT 100 billion of social investments in the development of Kazakhstan regions

» In 2018, ERG maintained 153.5 thousand jobs in the Kazakhstan economy.
KZT 87 of gross value added per KZT 100 of ERG value added was additionally generated in other economic sectors.
» ERG generates about 2% of Kazakhstan's GDP.
» ERG contribution to the gross value added makes up almost 20% of Kazakhstan's metals and mining GDP.
» ERG's total contribution to production is 1.72 times higher than our revenue in 2018.
» Each job in ERG corresponds to additional 1.53 jobs in other economic sectors in
» Kazakhstan.
» Each tenge earned by ERG employees generates another KZT 1.32 earned by employees in other sectors.
» Total tax contribution of ERG in 2018 is 1.3 times higher than state expenses for regional development in Kazakhstan.
» Social investments in 2013 to 2018 exceeded KZT 100 billion.
» More than 1,400 social projects were implemented in seven Kazakhstan regions and at the state level between 2013 and 2018.
» As part of the social investments in Kazakhstan regional infrastructure between 2013 and 2018,
-29 large sport and recreation facilities were built and reconstructed
-11 large parks and public gardens were constructed
-Financial support was provided to 55 educational institutions
» Social surveys of the population demonstrate that over 60% of residents of Aktobe, Kostanay and Pavlodar regions highly appreciate ERG's contribution to social development of their towns.



2.ABOUT THIS STUDY

Metals and mining companies face a host of challenges. These include relatively low profitability of the asset portfolio against the backdrop of unstable commodity prices and high uncertainty of the external economic environment, as well as the rapid spread of disruptive technologies and innovations, which challenge metals and mining companies to review their business-models in order to maintain a stable market position.

In this context, the value that is created for the government and community by the business extends beyond the value added and tax payment to the state budget. The non-financial externalities, such as social and economic benefits for all stakeholders in particular, become increasingly important.

The experience shows that the lack of attention to this matter may lead to serious consequences for the company such as limited access to capital or loss of the so-called social license to operate. According to the study that included 130 managers of global metals and mining companies, the loss of social license is considered a top-priority risk that requires business to take immediate actions even today.

The business should pay special attention to raising awareness, due diligence and fair disclosure of the effect it has on the community and economy to maintain its social license and meet growing stakeholder expectations.

Eurasian Resources Group (hereafter referred to as ERG or the Group) is a leading diversified natural resources producer internationally that has a significant impact on the social and economic development in the regions of its presence.

ERG is a leader in high-carbon ferrochrome production and one of the largest producers of iron ore, alumina and aluminium in CIS-countries, as well as a leading copper and cobalt producer. We operate in 15 countries across four continents and employ more than 69 thousand people, which makes us one of the largest employers in the industry.

This year we celebrate the 25th anniversary of ERG's presence in Kazakhstan, a key region for our business and the place where most of the Group's assets are situated. During this time, ERG became an integral part of life in Kazakhstan and a strong driver of economic growth in the country.

Our Strategy 2025 defines the contribution to improving the community welfare and well-being as one of the key priorities. Our work in this area is focused on creating favourable conditions for people's lives and work, the development of social infrastructure and the local business environment across various regions of Kazakhstan. In addition, we strive to communicate the environmental and social aspects of our contribution to the development of regions where we operate transparently and objectively in order to keep our social license.

This study is designed to evaluate our contribution to Kazakhstan's economy and society. We are positive that its results will give us and our stakeholders a better understanding of how and to what extent ERG influences the economic and social development in the country.

The study covers the six-year period of our operation in Kazakhstan from 2013 to 2018. All ERG operating assets in Kazakhstan are included in the scope. The total impact was evaluated both at national and regional levels in four key Kazakhstan regions of ERG presence, including Pavlodar, Aktobe, Kostanay and Karaganda.

A method of evaluating total business impact under the EY Long-Term Value Framework, that is widely recognised at an international level, was chosen as a tool to measure our influence on the national economy. The evaluation of total business impact will allow us to consider not only the direct operational effects such as the value added, jobs, personal income and tax payments, but also the indirect and induced effects arising from the interaction with supply chain members and the spending impact of employees. Thus, this method will ensure an in-depth evaluation of business value for the economy and society by determining the multiplicative effect that is generated in other economic sectors of the country or a region as the result of purchasing local goods and services and paying the salaries.

[1] Top 10 business risks and opportunities - 2020

[2] EY's Long-Term Value (LTV) framework

The total impact of ERG was evaluated by five types of contribution (indicators):

- The economic contribution to goods and services production (production);
- Contribution to GDP
- Contribution to employment
- Contribution to personal income
- Tax contribution

Each indicator was evaluated by three components (effects), including direct, indirect and induced. The sum of these components represents our total contribution to the national and regional economy of Kazakhstan.

This study is focused on social aspects of our contribution. We put in great effort in Kazakhstan to implement the social investment programs in the regions to improve their living quality and standards. We actively communicate with local authorities and strive to consider public feedback when we identify the key focus areas for our social investments. We understand that investments made today into the wellbeing of local communities ensure a stable and successful future for our business and society in general.

We hope you find the study insightful.

[3] More detailed description of the method is shown in Section 5.

3.ERG IN KAZAKHSTAN – 25 YEARS OF DEVELOPMENT AND PROSPERITY FOR THE BENEFIT OF THE COUNTRY

3.1 1.1ABOUT OUR BUSINESS IN KAZAKHSTAN

ERG currently represents a third of the metals and mining industry in Kazakhstan, is one of the main power providers in the country and the largest railway operator in Central Asia.
Our assets in Kazakhstan include a number of integrated operations specialising in mining and processing of mineral resources, smelting, power generation, logistics, machine building, business-process optimisation and marketing.

During its long history of operation in Kazakhstan, ERG's sites have become the centre of economic growth and an integral part of people's lives in the regions of the company's presence in the country.

ERG's asset portfolio in Kazakhstan includes:

Ferrochrome subdivision

TNC Kazchrome JSC

Established in: 1995

Headcount: 19.3 thousand employees

One of the leading producers of chromium ore and ferroalloys around the globe. The company has an integrated production cycle, from mining and processing of chromium ore at Donskoy Mining and Processing Plant ("DGOK") and manganese ore at Kazmarganets Mining Enterprise to ferroalloy production at Aksu and Aktobe plants. Kazchrome products are supplied to the largest stainless steel producers around the globe.

- No.1 around the globe for the supply of high-quality chromium ore that contains an average of 50 per cent chromium
- No.2 producer of chromium alloys in terms of production and supply tonnage
- Ranks 12th in the list of TOP-20 global ferroalloy producers
- 208 Mt of chromium ore have been mined over 80 years of Donskoy GOK operation, which is equal to a 41,600 metres long train. This makes it longer than the Earth's equator

Iron ore subdivision

Sokolov-Sarybai Mining Production Association (SSGPO) JSC

Established in: 1954

Headcount: 17.5 thousand employees

Leading producer of iron ore in Kazakhstan's mining industry with a capacity of 40 Mt of iron ore per year.
This operation specialises in iron ore mining and the production of saleable iron ore concentrate and pellets.

Alumina and aluminium subdivision

Aluminium of Kazakhstan JSC

Established in: 1964

Headcount: 9.5 thousand employees

The only alumina (raw material for aluminium production) producer in Kazakhstan. This operation is the largest employer in the Pavlodar region and provides more than 9 thousand jobs.

[4] In terms of the amount of taxes paid and other mandatory payments in 2018.

Kazakhstan Aluminium Smelter JSC

Established in: 2007

Headcount: 2.5 thousand employees

The first and only producer of high-grade primary aluminium in Kazakhstan. Since commissioning, the smelter has produced 2.5 Mt of aluminium. The metallurgists devoted this achievement to ERG's anniversary.

- » It ranks in the top ten of the world's 200 largest aluminium operations around the globe.
- » Ninety per cent of the products are sent to external markets improving the export potential of the country.

Energy

Eurasian Energy Corporation JSC

Established in: 1996

Headcount: 5.8 thousand employees

One of the largest coal and power suppliers in Kazakhstan. EEC includes two units, the Vostochny open-pit coal mine, a unique enterprise specialising in coal open-pit mining, and Aksu Power Plant, the largest power supplier in Kazakhstan.

- » 20 Mt of coal per year
- » 17% of the country's electricity output
- » Aksu Power Plant generated 587 billion kWh in over half a century. This is enough to supply power to Aksu for 6,000 years.

Shubarkol Komir JSC

Established in: 1985

Headcount: 2.8 thousand employees

One of the largest thermal coal producers in Kazakhstan. Shubarkol coal has high calorific value and low ash content and is rightly considered an environmentally friendly energy carrier.

- » No.1 coal supplier to the internal market
- » No.3 coal producer in Kazakhstan

«3-Energoortalyk» JSC

Established in: 2000

Headcount: 400 employees

The main heating and power provider in Shymkent city, which is in Southern Kazakhstan. On average, the plant produces over 700 million kWh of electricity per year.

Logistics

Transportation Group TransCom LLP

Established in: 1991

Headcount: 850 employees

It is the one of the largest railroad operators of freight wagons and containers in Kazakhstan.

- » Its own rolling stock fleet includes over 12 thousand railway vehicles.
- » The most successful transportation and freight forwarding company in Kazakhstan in 2016

[5] According to the result of the competition held by the Kazakhstan Association of National Freight Forwarders (ANEK)

Marketing

ERG Commercial Centre LLP

Established in: 2016
Headcount: 170 employees

Brings together three business activities, including procurement, sales of non-core products produced by our operations and implementation of investment projects in Kazakhstan. It was established to manage these processes more efficiently, reduce non-core load on the Group's entities and investigate additional internal reserves.

Production support and research

«ERG Service» JSC

Established in: 1955
Headcount: 770 employees

A centralised service company that manufactures, maintains and operates equipment, provides support and develops the repair and auxiliary processes. ERG Service JSC is tasked with the strategic and operational management of production and maintenance, quality control, timing and cost of the products manufactured for the internal use in the Group. The Group's strategic projects are also engineered by the company. The company structure includes Pavlodar Machine-Building Plant that is specialised in the manufacturing of steelworks and various purpose lifting equipment.

Business and Technology Services LLP

Established in: 2009
Headcount: 440 employees

The company implements an extensive programme to transform our business, involving process re-engineering, design, implementation and the support of modern IT infrastructure in Group companies.

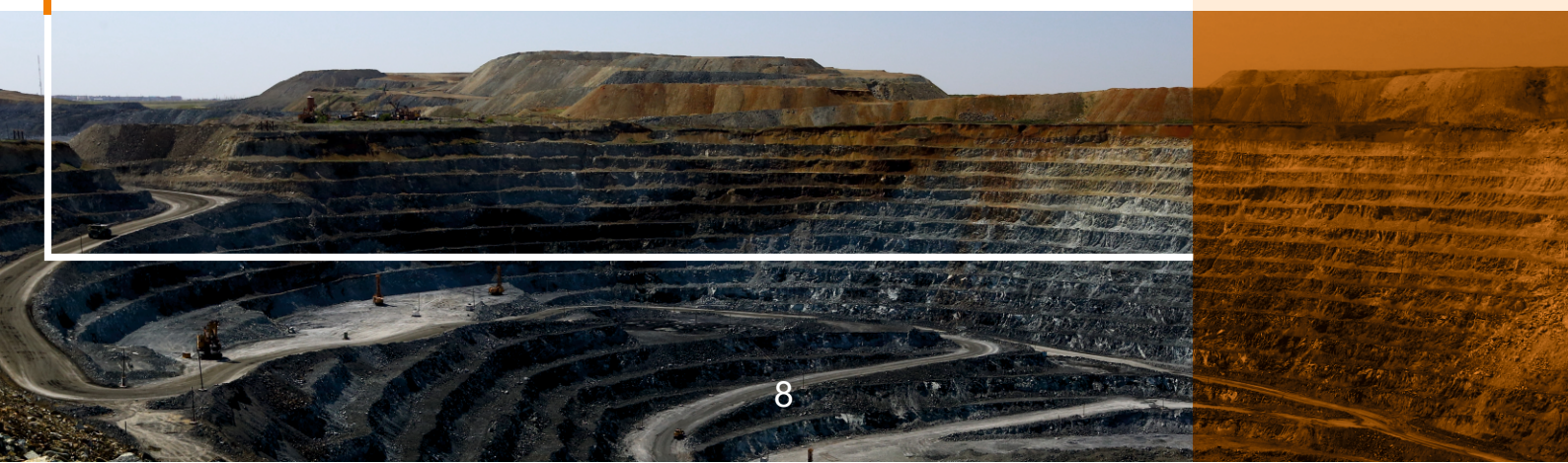
» Silver SAP Value Award 2018 in the nomination “Leader in Digital Transformation” for building an ERP system for ERG based on SAP ERP platform.

ERG Research and Engineering Centre LLP

Established in: 2012
Headcount: 68 employees

An innovative platform to implement breakthrough projects and commercialise new ideas that create additional value and synergies within the existing business. Innovative projects are developed in such areas as the sustainable development and mitigation of environmental risks, the improvement of existing technologies, the implementation of digital industry elements, increasing the product added value, waste treatment and monetisation.

All together, these companies make a significant contribution to the national and regional economy ensuring sustainable economic development, supporting employment and providing income to the population and the government.



The Group's history in Kazakhstan

1994	Acquisition of Pavlodar Aluminium Smelter
1995	Foundation of TNC Kazchrome with full ferroalloy production cycle
1996	Foundation of the iron ore subdivision and alumina and aluminium subdivision
1997	SSGPO produced 50 Mt of iron ore
1998	12 furnaces were commissioned in Aksu Ferroalloy Plant
1999	Foundation of Eurasian Group logistics and optimisation of the export ferroalloy and other product shipments
2000	Commencement of extensive SSGPO modernisation
2001	Commencement of extensive reconstruction of power units in Aksu Power Plant
2002	Government of Kazakhstan awarded Donskoy GOK with diploma for Quality Control Achievements
2003	New route opened for ferroalloy transit through China
2004	World record of 1.8 Mt production is set among global chromium mines Start of Kazakhstan Aluminium Smelter (KAS) construction
2005	Pavlodar Aluminium Smelter produced the 1.5 millionth tonne of alumina

2006
SSGPO produced 50 Mt of iron ore
Foundation of ENRC Holding company. All assets are merged to one Group of companies.

2007
ENRC's IPO on London Stock Exchange
KAS was put into operation at the initial capacity of 62,500 tonnes of primary aluminium Foundation of ENRC Logistics

2008
ENRC's listing on FTSE 100

2009
Listing of Kazakhstan Aluminium Smelter on the London Metal Exchange

2010
Commencement of new ferroalloy plant construction at Aktobe ferroalloy site

2011
Aluminium of Kazakhstan JSC ramped up its capacity to 1.7 Mtpa of alumina

2012
Shubarkol Komir JSC, the largest thermal coal producer in Kazakhstan, joined Eurasian Group Manufacture of unique rail traversers for Tulpar-Talgo in Pavlodar Machine-Building Plant. Anode Plant commissioning in Kazakhstan.

2013
Full acquisition of ENRC by ERG S.à r.l.

2014
Commissioning of a new ferroalloy plant in Kazakhstan

2015
Aksu Ferroalloy Plant surpassed the 1Mt milestone of production

2016
KAS reaches the 100kt production milestone
The first laboratory anode is produced from Kazakh coke.
Pavlodar Machine-Building Plant, SSGPO and Pavlodar Aluminium Smelter started to produce new types of products

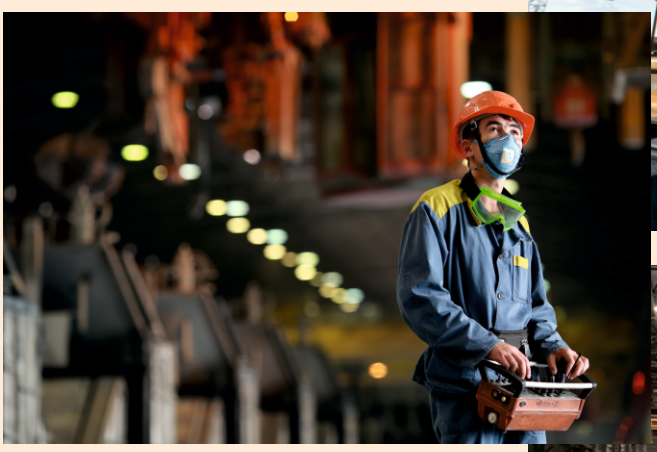
2017
New mine commissioned in Khromtau
SSGPO commissioned the Smart Mine project as part of Industry 4.0

2018

Standards&Poor's and Moody's upgraded ERG credit rating from B-/B and B3 to B/B and B2 respectively, as well as the rating forecast from stable to positive. Kazchrome reached record production levels of chromium ore and ferroalloys.

2019

The 25th anniversary of ERG's presence in Kazakhstan

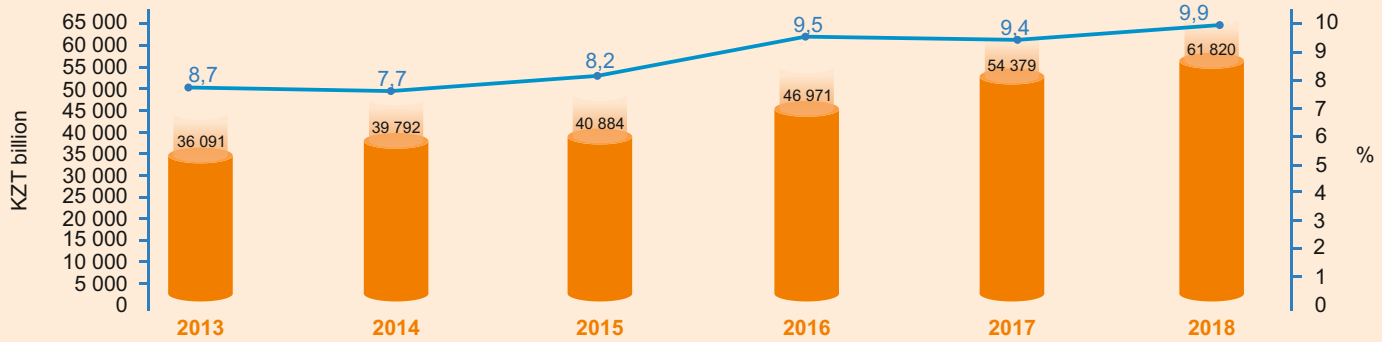


3.2 Our position in Kazakhstan's metals and mining industry

Metals and mining companies have a significant impact on the economic development of our country. According to the International Council on Mining and Metals (ICMM), Kazakhstan ranks 27th of 182 countries in terms of the metals and mining industry's contribution to the national economy index. The metals and mining industry's contribution to the Kazakh economy serves to attract foreign investments, drive export and tax payments, and significant value added and employment (Figure 1).

The role of the metals and mining industry in Kazakhstan

The metals and mining industry as a percentage of Kazakhstan's GDP

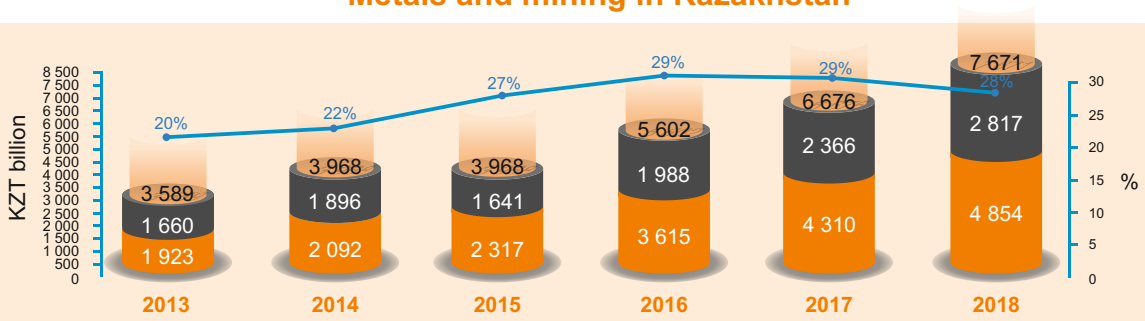


(According to the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan)

The metals and mining industry amounted to 9.9% of national GDP in 2018

Power generation, Transport and warehousing transfer and distribution

Metals and mining in Kazakhstan



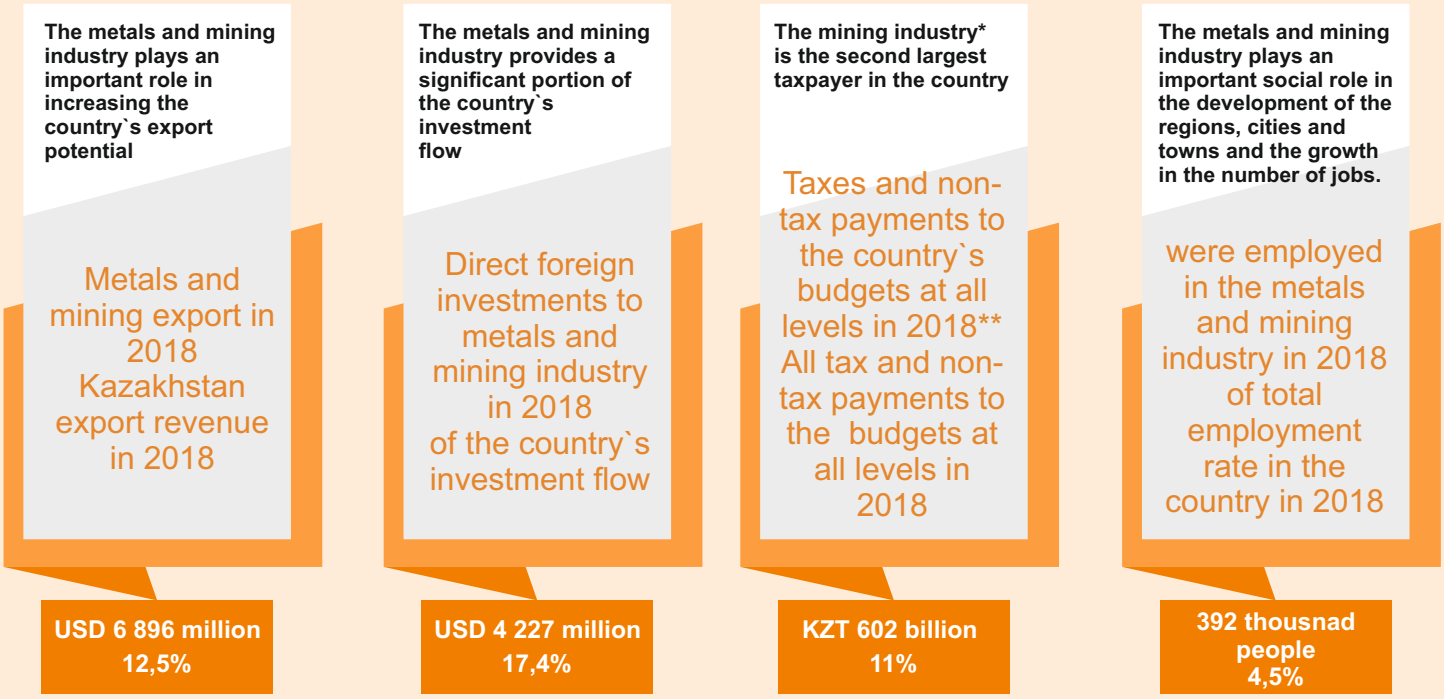
(According to the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan)

Percentage of metals and mining products in total industrial production in 2018 was 28%

[6] The definition of metals and mining industry includes all Kazakhstan mining sectors except for oil and gas (production of coal and lignite, iron ore, non-ferrous metal ores, etc.), as well as processing sectors such as cast iron, steel and ferroalloys, base and noble non-ferrous metals, metal casting and fabrication of metal products.

[7] Role of mining in national economies: The Mining contribution today, ICMM, 2018

Role of metals and mining industry in the Republic of Kazakhstan



* *Mining industry excluding oil and gas*
** *Under the Extractive industries Transparency initiative (EIT)*

Figure The role of metals and mining industry in Kazakhstan

ERG includes the largest mining and mineral processing operations in the country and occupies a leading position in Kazakhstan's metals and mining industry. Our business approach is based on the continuous improvement of operational efficiency, a balanced development of the asset portfolio, financial stability, and the development of human capital and regions of our presence. We leverage the following competitive advantages to strengthen our position in the industry:

- A diversified portfolio which includes operations with low costs and significant growth potential that meets the increasing requirements of developing countries for raw material resources;
- Integrated metals and mining, mineral processing, power generation, logistics and marketing companies;
- Long-term and strong partnerships and broad global customer base;
- Strategically well-placed geographic location in the vicinity of key markets.

Despite the volatility of raw material prices and exchange rates in recent years, we have managed to achieve stable operational and financial results and strengthen our market position. After a significant fall of financial indicators in 2015 and 2016 due to unfavourable market conditions, we increased our gross revenue in all global operational assets by 39% to USD 5.3 billion in two years as of 2018. Revenue earned from Kazakh assets increased by 43% respectively to USD 3,714 billion.
Higher revenue resulted from positive metal price dynamics (in particular, aluminium and iron ore prices increased by 31% and 19% respectively in 2018 vs 2016), as well as higher production and sales (Figure 2).

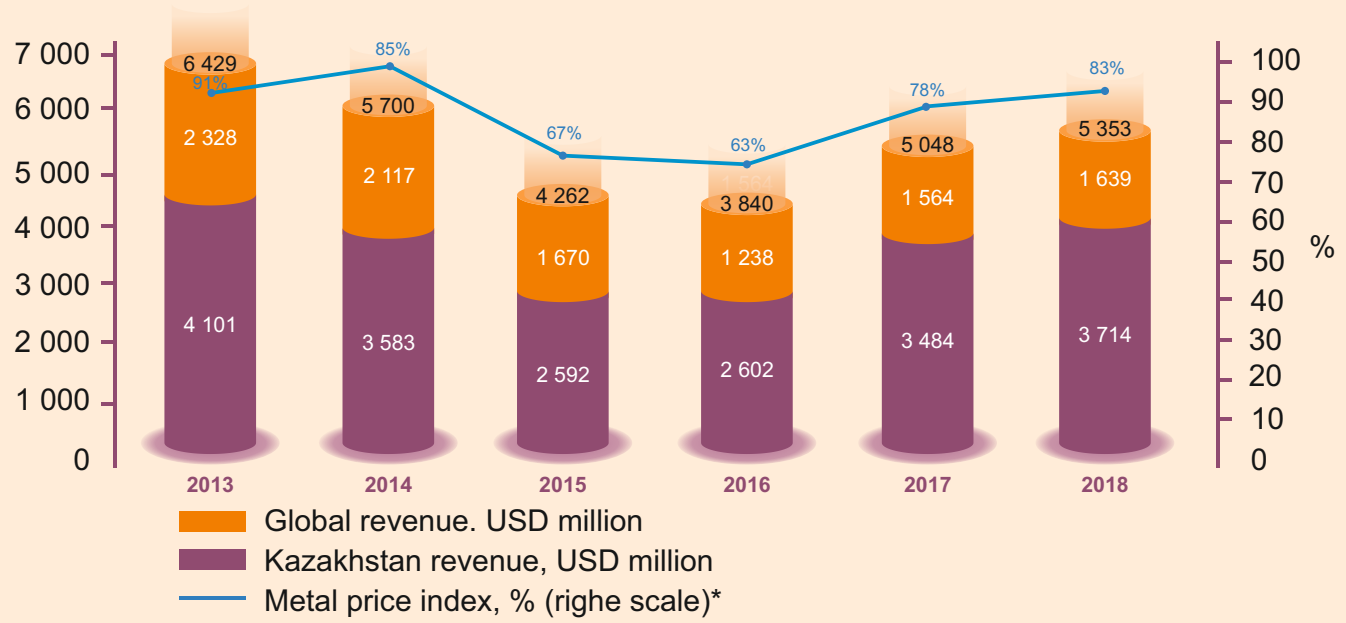


Figure 2 Dynamics of ERG's revenue and metal price indices in 2013-2018

*

- According to Commodity Markets Outlook, World Bank, April 2019. Price indices at nominal USD rate, 2010=100

The key types of ERG's products in Kazakhstan include ferroalloys, aluminium, iron ore concentrate and coal. ERG production indicators in 2018 are shown below ( ).

Table ERG's production indicators vs total production tonnage in Kazakhstan in 2018

Production, kt	Total production in Kazakhstan*	ERG production indicators	
	(kt)	(kt)	% of production in Kazakhstan
Ferroalloys	2 089	1 742**	83%
Iron ore	41 877	30 846	74%
Alumina and aluminium	1 752	1 739	99%
Coal	118 483	28 724	24%
Power M kWh	107 269	18 189	17%

** According to the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan*

*** Considering internal ferroalloy consumption*

Ferroalloys

We produce high-quality high-carbon ferrochrome, silica and manganese alloys, and refined ferrochrome. A first-quality resource base with low unit costs, a fully integrated cycle and our own well-developed infrastructure enable us to maintain a leading market position. ERG is not only a leading ferroalloy producer in Kazakhstan that makes up over 83% of total ferroalloy production in the country but also one of the leading global suppliers as almost 5% of all ferroalloys globally are produced at our sites.

Iron ore

We mine and process over 40 Mtpa of iron ore, as well as produce and sell iron concentrate and pellets, which make up 74% of total iron ore production in Kazakhstan.

Alumina and aluminium

We are the first and largest alumina and primary high-grade aluminium producer in Kazakhstan. We produce and sell alumina to aluminium producers, as well as produce and sell our own aluminium. Our aluminium makes up 99% of total non-refined aluminium production in the country.

Coal and power

We supply high-quality coal to industrial and municipal facilities in 11 regions in Kazakhstan. We managed to achieve one of the highest production levels among open coal mines in CIS countries and occupy 24% of the Kazakhstan market.

ERG is also one of the largest power suppliers in Kazakhstan. Our power generation assets produce 17% of all power in the country.

Our products address requirements of various industries and communities around the globe promoting further economic and social development.

As a flagship business of Kazakhstan's metals and mining industry, ERG plays an important role in strengthening the export potential of the country. The key external markets for our products are Russia, China, Japan and the EU. Export destinations in 2018 are shown below on a product-by-product basis (Figure 3).

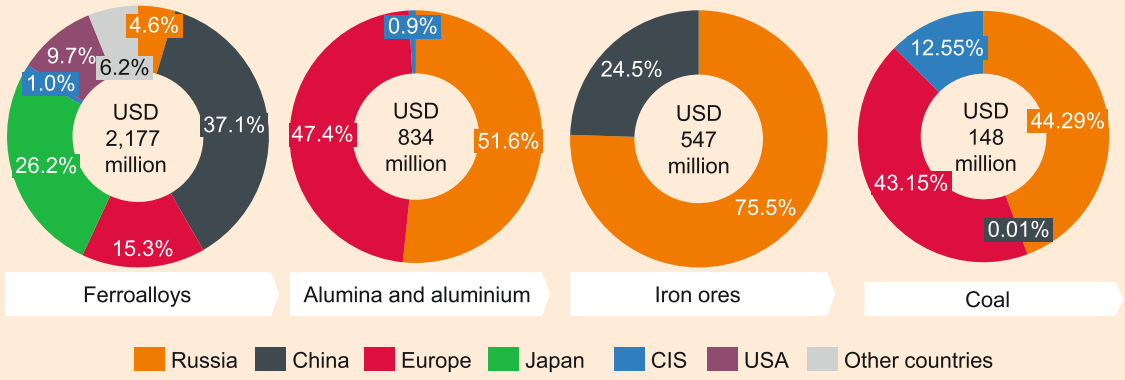


Figure 3 ERG's export by types of products

Export turnover reached USD 3,706 million in 2018, which makes up 53.7% of the sector's total export in Kazakhstan and 6.7% of all export income in the country.

A favourable raw material pricing environment and optimistic expert forecasts in relation to the growth of the metals and mining industry provide an opportunity for further development.

As part of our 2025 Strategy, we plan to ramp up the potential of our key production assets in the coming years by upgrading our production facilities, improving our digital capabilities, expanding our raw material base and exploring new business segments. This will help us to keep our leading position in the industry and provide an opportunity for the stable growth of our business value including in fulfilling our wider, social obligations to communities across the regions of our presence.

3.3 HOW DO WE CONTRIBUTE TO THE ECONOMIC AND SOCIAL DEVELOPMENT?

he large scale and long-term nature of our mining and mineral processing activities allow us to create significant economic and social value for our stakeholders in all the regions we operate in.

We strive to maximize the impact of our activity by improving production efficiency and by implementing good operational and management practices. Not only does this help us sustain our operations, but also makes a positive contribution to the economic and social development of the country in the long run.

Our value creation model is based on key factors such as:

» Finance
We strive to leverage our financial resources obtained from external financing sources, operation or investments.

» People

When it comes to creating value, we depend on qualification, well-being and motivation of our employees, contractors and service providers.

» Relationship

We aim to establish and maintain constructive relationship with all our stakeholders based on mutual respect, transparency and trust.

» Natural resources

Considering that natural resources that we use in our production processes are non-renewable, sustainability is of the utmost importance.
Fixed assets
Significant investments in the acquisition, development and maintenance of fixed assets allow us to create value in a long run.

We generate value added at each stage of the production cycle from the mining and processing of raw materials to the enrichment, production, energy generation, logistics and marketing.

We have a direct impact on the development of Kazakhstan's economy by creating value added at each stage of the production cycle, supporting employment, providing an income to our employees, paying taxes and other mandatory charges to the government and investing in local communities (direct impact).
In addition, we indirectly impact other industries and economic sectors in the country by purchasing goods and services from local suppliers and contractors, which falls into our indirect impact. We promote the creation of additional jobs in contracting companies (and their supply chain), thus enabling them to generate revenue and pay their employees, as well as additional tax payments to the state budget.
The consumption expenditures of our employees, as well as our contractors and suppliers are counted as our induced impact that further supports the demand for goods and services, employment in other economic sectors and tax payments to the government.
Three components above (direct, indirect and induced economic effects) make up for our total contribution to the Kazakh economy (Figure 4).
The following sections of this study show the assessment of ERG's total contribution to the economic and social development of Kazakhstan and its regions using criteria below:

» Contribution to GDP, as well as production of goods and services
» Contribution to employment
» Contribution to personal income
» Tax contribution

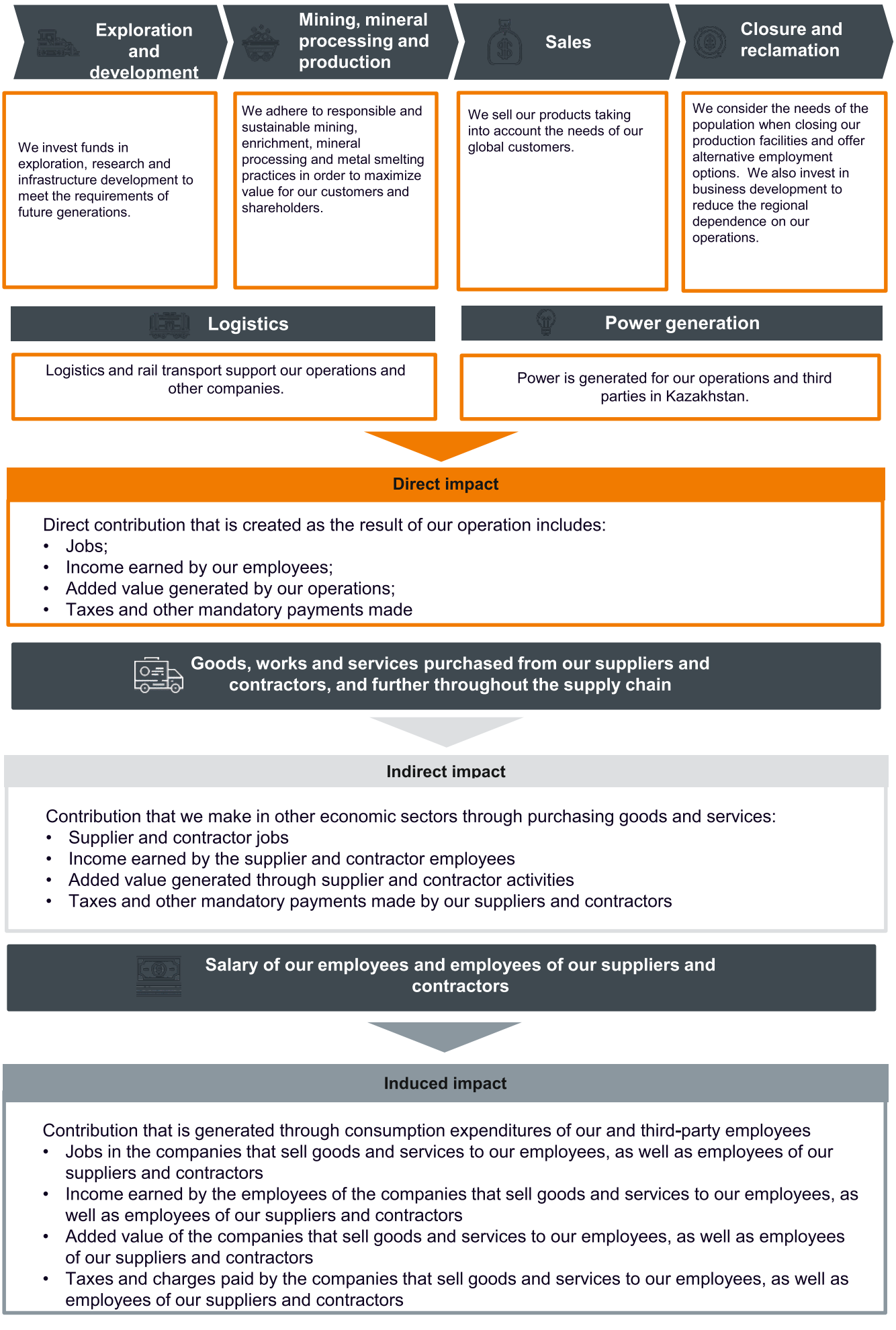


Figure 4 ERG's total impact throughout the value chain

4. Our contribution to THE social and economic development of Kazakhstan and its regions

4.1 OUR CONTRIBUTION TO THE NATIONAL AND REGIONAL ECONOMY

4.1.1 We support the economic growth of Kazakhstan and its regions

Our contribution to business development

Our total contribution to Kazakhstan's production is represented by the cost of all goods and services produced in the country by ERG, including the goods and services produced by our contractors, suppliers and companies. Our partners also meet the consumer demands of our employees and the employees of other companies in our supply chain.

As a result of our activities, Kazakhstan's economy received KZT 2,203 billion of production input, representing 2.32% of the value of all goods and services produced in the country in 2018. Our direct impact accounts for KZT 1,281 billion of these KZT 2,203 billion or 58% ( ). Thus, KZT 100 of ERG revenue corresponds to KZT 72 of sales in other economic sectors.

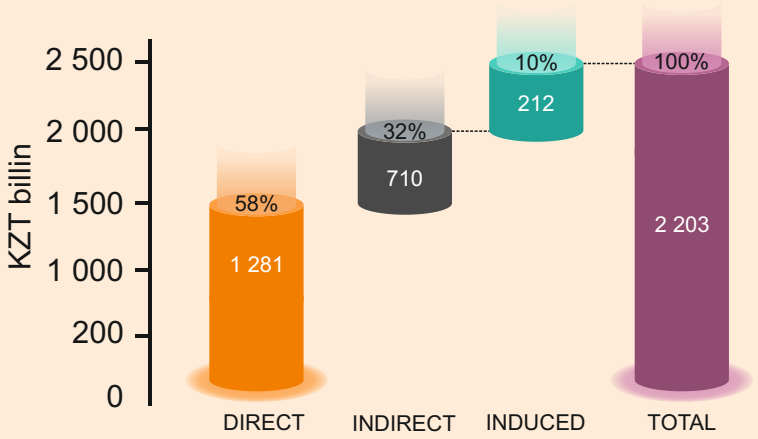


Figure 5 Breakdown of total contribution to production of goods and services in 2018

ERG's total contribution to production is 1.72 times higher than our revenue in 2018.

Between 2013 and 2018, our total contribution to production almost doubled (Figure 6). The annual average growth rate during this period was 15%. The average growth rate of ERG's contribution to production excluding inflation (i.e. in 2018 prices) was 6.4%

Overall, the breakdown of total contribution to production remained the same over the last 6 years (direct impact – about 56%, indirect impact– about 32%, induced impact– about 12%). This trend emphasizes ERG's stable procurement structure and a consistent level of consumption expenditures of the Group employees and contractors.

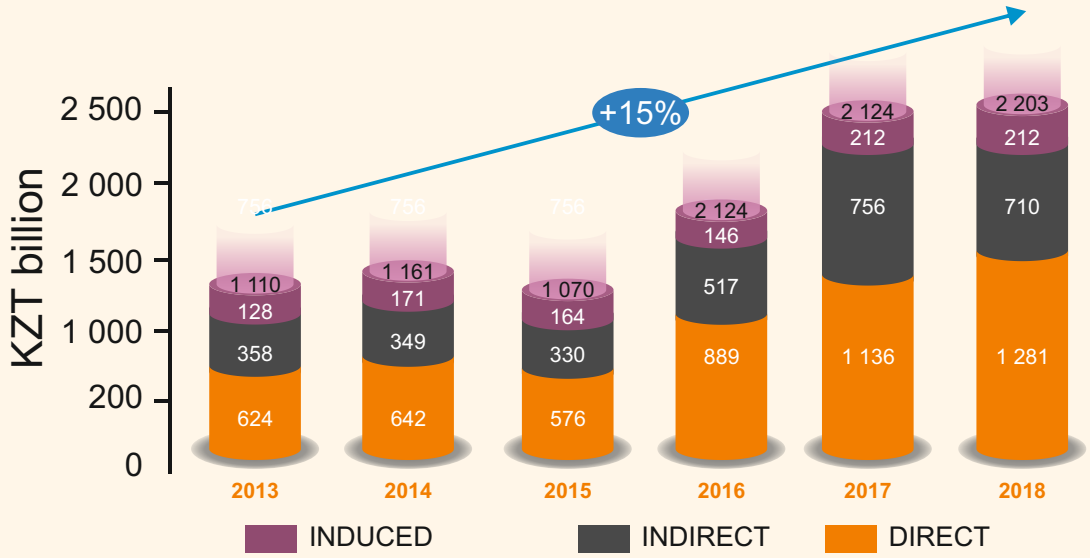


Figure 6 Dynamics of ERG's total contribution to production of goods and services in 2013-2018

We strive to purchase goods and services from local suppliers to further support domestic business development. Between 2013 and 2018, ERG purchased goods and services from local suppliers for over KZT 1,526 billion, supporting more than 5,500 Kazakhstan companies.

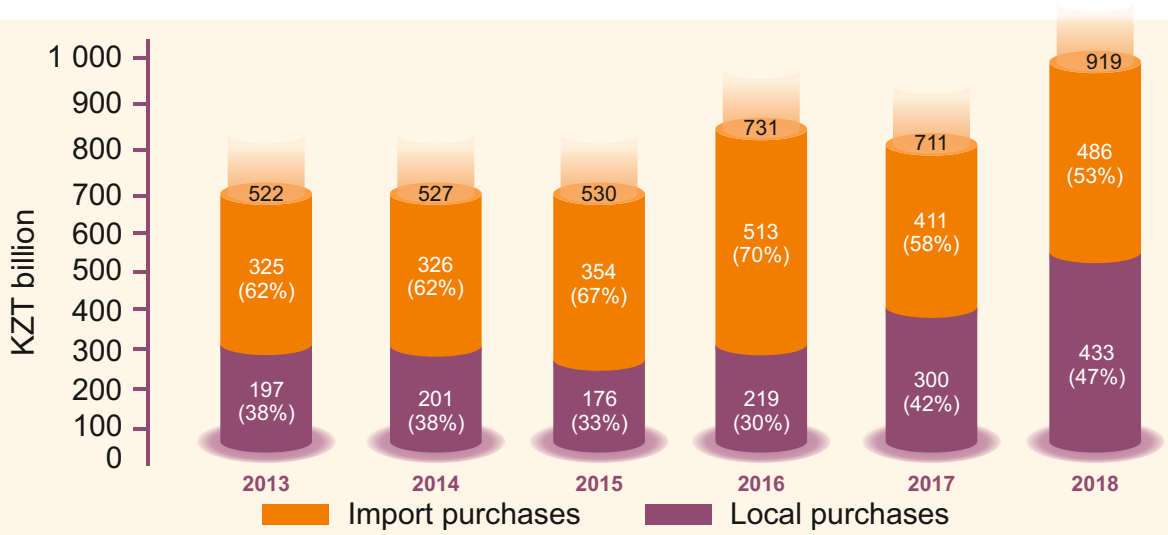


Figure 7 Dynamics of ERG's procurement and percentage of local content in procurement in 2013-2018

Between 2013 and 2008, the scope of direct procurement from local suppliers increased twofold. Their percentage in the total scope of procurement increased by 24%, from 38% in 2013 to 47% in 2018 (Figure 7).

We have been cooperating with the Ministry of Investments and Development and the National Chamber of Entrepreneurs of the Republic of Kazakhstan since 2017 to support the development of local businesses across Kazakhstan's regions. During the last two years, we have been implementing a programme with the universities of Aktobe, Karaganda, Pavlodar and Kostanay to develop a youth entrepreneurship programme and create a local business environment where promising Kazakhstan business can thrive. (see Section 4.2.2).

Our business plays an important role in the economy of Pavlodar, Aktobe, Kostanay and Karaganda, where the Group operates several facilities. We support the business development and the diversity in these regions, especially in our monotowns where our operations employ most of the local workforce. The evaluation results of the total regional contribution to production are shown below (Table 2).

[8] Since 2019 – Ministry of Industry and Infrastructure Development

Table 2 ERG's contribution to regional production in 2018

Region	Direct impact, KZT billion	Total impact, KZT billion	Percentage of total contribution to regional production, %
Pavlodar region	656	963	31%
Aktobe region	313	519	14%
Kostanay region	245	380	16%
Karaganda region	66	114	2%

ERG's activity in 2018 made up one third of the revenue earned by all the companies operating in the Pavlodar region. ERG's total contribution to production in the industrial sector of Pavlodar region exceeds 50%

If we look at the breakdown of the national and regional contribution of all companies operating in Kazakhstan ERG contributes to 63% and 58% respectively. The indirect regional impact is on average 6% lower than the national contribution, while the percentage of induced impactremains almost the same (about 10%).

The multiplier effect that we create by purchasing goods and services is lower in the regions than at state level.

The lower percentage of indirect impact at the regional level is due to the fact that the volume of goods and services purchased at the state level is larger than in any region where the Group operates.

Thus, purchases made by ERG from regional suppliers have a multiplier effect at state level, but do not have any influence on the regional indicators since they are considered as "imports". Similar correlations can be observed for other contribution indicators such as the GDP, the employment rate and personal income.

The dynamics of our total contribution to the production in the different regions over the last six years show the highest increase (by two) in the Aktobe and Karaganda regions (Figure 8). The Aktobe region demonstrated a stable increase in contribution by 30% from 2013 relative to the regional production value. The percentage of total contribution to production in the Kostanay region decreased from 22% in 2013 to 16% in 2018.

The key contributing factor is a significant drop in global iron ore prices in 2015 affecting the profitability of our iron ore assets in the Kostanay region.

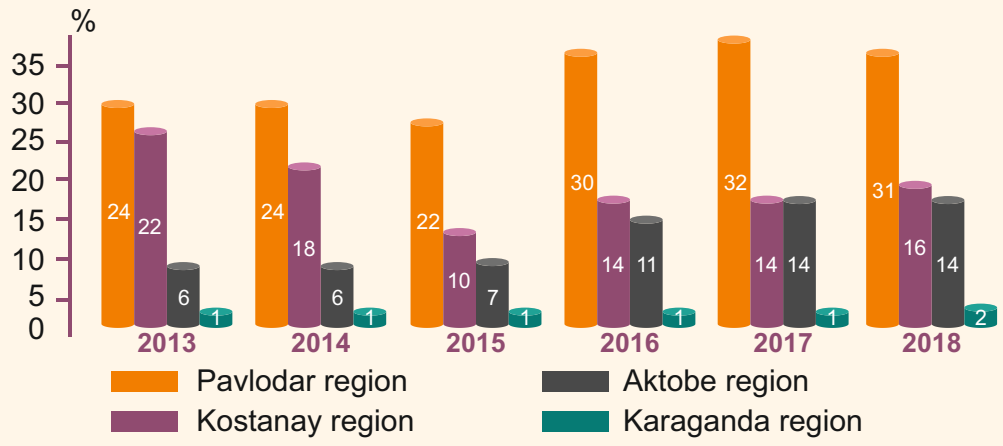


Figure 8 : Percentage of ERG's total contribution to production per region vs regional production

[9] Sokolov-Sarybai Mining Production Association (SSGPO) JSC

ERG's highest contribution to regional growth can be found in the Pavlodar region. There, ERG's input in 2018 generated KZT 962.7 billion of goods and services, making up for 31% of the total regional production. It is important to note that a third of the total industrial production in Pavlodar region is attributed to ERG. ERG's total regional contribution to the Pavlodar region's industrial production reached almost 50%.

The amount of ERG's indirect and induced contribution to Pavlodar's total production over the last 6 years is KZT 1,450 billion, which is 18.4 times higher than the input generated by the state-backed development and support programme ""Business Road Map 2020" between 2013 and 2018.

The amount of ERG's indirect and induced contribution to the Pavlodar region's growth product over the past 6 years is 18.4 times higher than the input generated by the state-backed development and support programme "Business Road Map 2020". Between 2013 and 2018.

We support business development in the Pavlodar region through the consumption expenditures of our employees and purchases of goods and services from local suppliers in industries such as the coke and petrochemicals production, equipment and machinery maintenance and installation, manufacture of electrical equipment and chemicals (Figure 9).

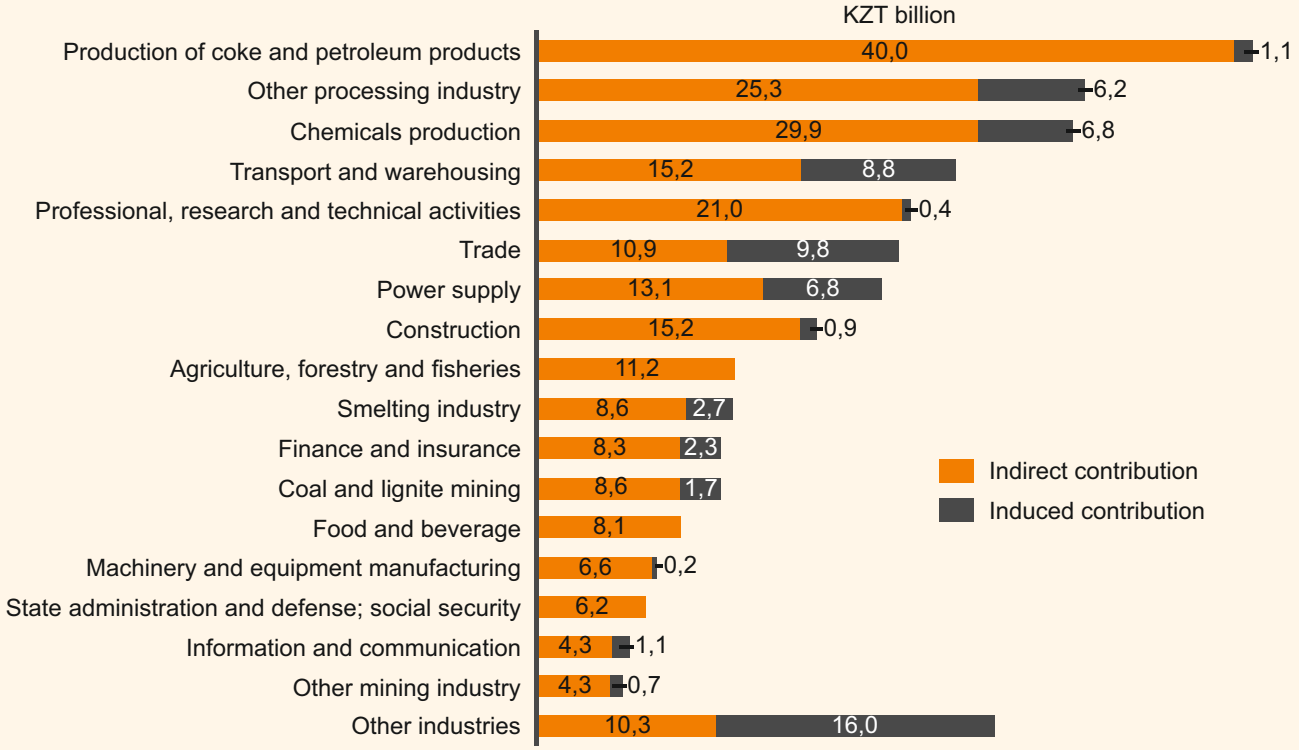


Figure 9 Regional breakdown of ERG's indirect and induced contribution to total production in Pavlodar region in 2018

Our contribution to value added

ERG's contribution to value added or Gross Domestic Product (GDP,) is the difference between the cost of all the goods and services produced in Kazakhstan by ERG and the cost of purchasing goods and services from other companies (intermediate consumption). The total contribution to GDP describes the company's financial input to the national economy more accurately as it prevents double-entry accounting of raw material and capital movement, usually in play in the calculation of the contribution to production.

Our total contribution to Kazakhstan's GDP in 2018 was KZT 1,144 billion, representing 1.85% of the country's GDP. The figure below shows the breakdown of ERG's total contribution to Kazakhstan's GDP (Figure 10).

[10] Reports on implementation of Business Road Map 2020

[11] The definitions of GDP, GVA and value added are shown in the Study Methodology section.

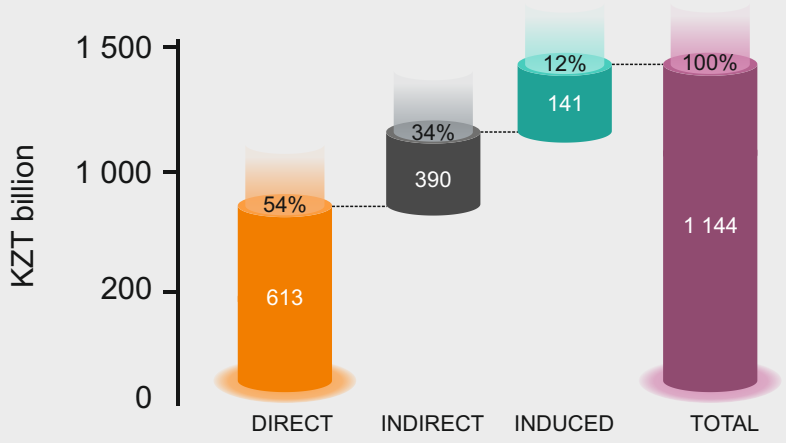


Figure 10 Breakdown of ERG's total contribution to production of goods and services in 2018

The analysis of the breakdown of the total contribution to GDP shows that with KZT 613 billion of direct contribution to the value added, the Group generates an additional KZT 390 billion through the purchases in other economic sectors of Kazakhstan and a further KZT 141 billion through the consumption expenditures of employees. Thus, our total contribution is 1.87 times higher than the Group's value added.

KZT 87 of gross value added are additionally generated by ERG in other economic sectors per KZT 100 of value added.

Our total impact between 2013 and 2018 is KZT 5 trillion and over half of it is attributed to direct impact of the Group, which is KZT 2.6 trillion. ERG's total contribution to GDP between 2013 and 2018 has almost doubled, while the annual average growth rate is 15% (Figure 11).

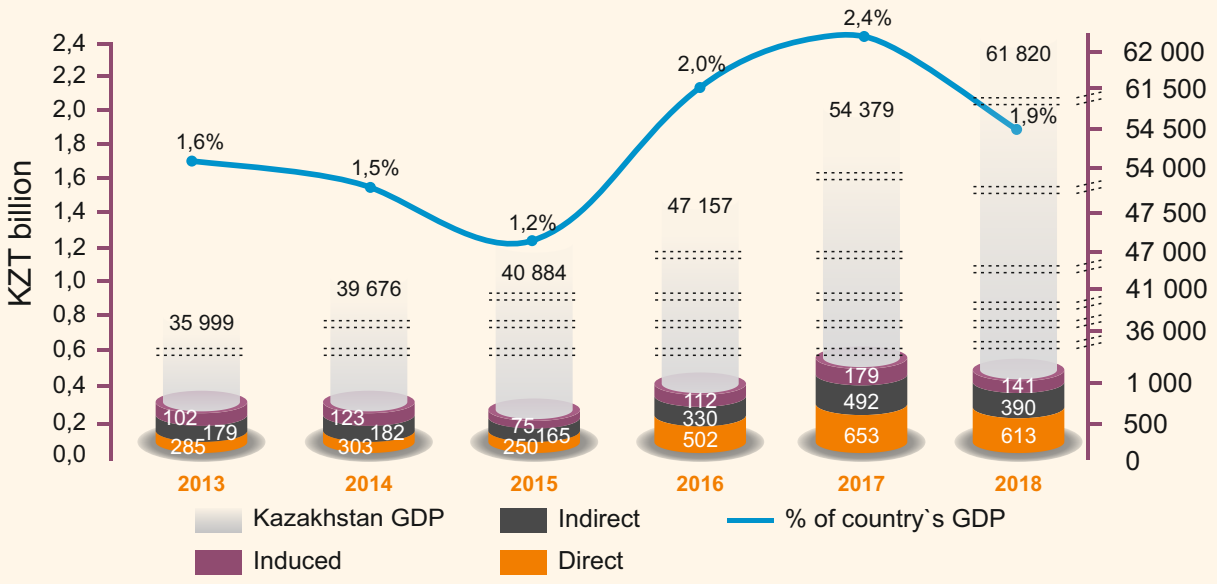


Figure 11 Dynamics of ERG's total contribution to GDP and its percentage in Kazakhstan's GDP between 2013 and 2018

Overall, the percentage of our total contribution to the country's GDP increased from 1.6% in 2013 to 1.9% in 2018. The decrease in total contribution to GDP in 2018 vs 2017 is associated with a decrease in the Group's total contribution to the value added by KZT 180 billion (13.6%) and a significant increase in Kazakhstan GDP by KZT 7,441 billion (13.7%) that resulted mainly from a higher contribution of the oil and gas industry to the value added of the national economy (by 24.4%).

It is interesting to note that our total contribution to GDP is comparable to the value added of 20 processing industries in Kazakhstan such as the manufacture of finished metal, rubber and plastic products, vehicles, electrical equipment, etc. (Figure 12).

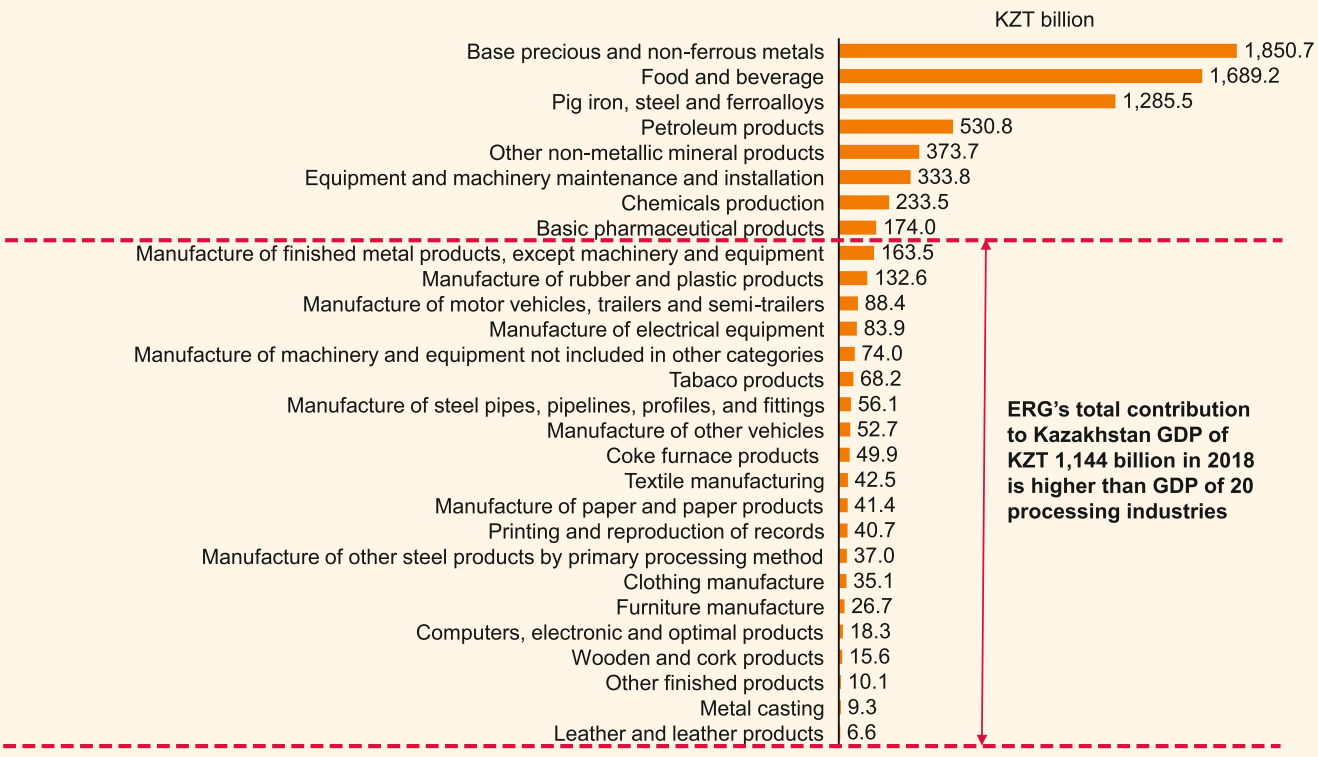


Figure 12 ERG's total contribution vs processing industry GDP in 2018

In addition, our total contribution to GDP makes up for 18.7% of the value added of the entire mining industry, which is the second biggest sector in Kazakhstan after oil and gas in terms of its contribution to GDP.

ERG's total contribution to GDP is comparable to almost 10% of Almaty's GRP or 17% of GRP of Nur-Sultan.

The description of our contribution to GDP by various economic sectors is shown below (Figure 13).

ERG's indirect contribution to GDP is mainly attributed to professional, research and technical activities, construction and manufacturing industries such as maintenance, installation and manufacture of machinery and equipment, production of chemicals and petroleum products. The industry breakdown of indirect impact generally correlates with ERG's structure of procurement from local producers and suppliers where the biggest percentage is made up by the acquisition of various consulting services, equipment maintenance, and purchase of equipment, fuels and lubricants.

Induced contribution to GDP is mainly generated in the real estate business, trade, agriculture, and transport and warehousing. Such a breakdown of induced contribution implies that the biggest portion of consumption expenditures of employees is associated with the purchase and rental of housing, as well as the purchase of consumer goods, including food.

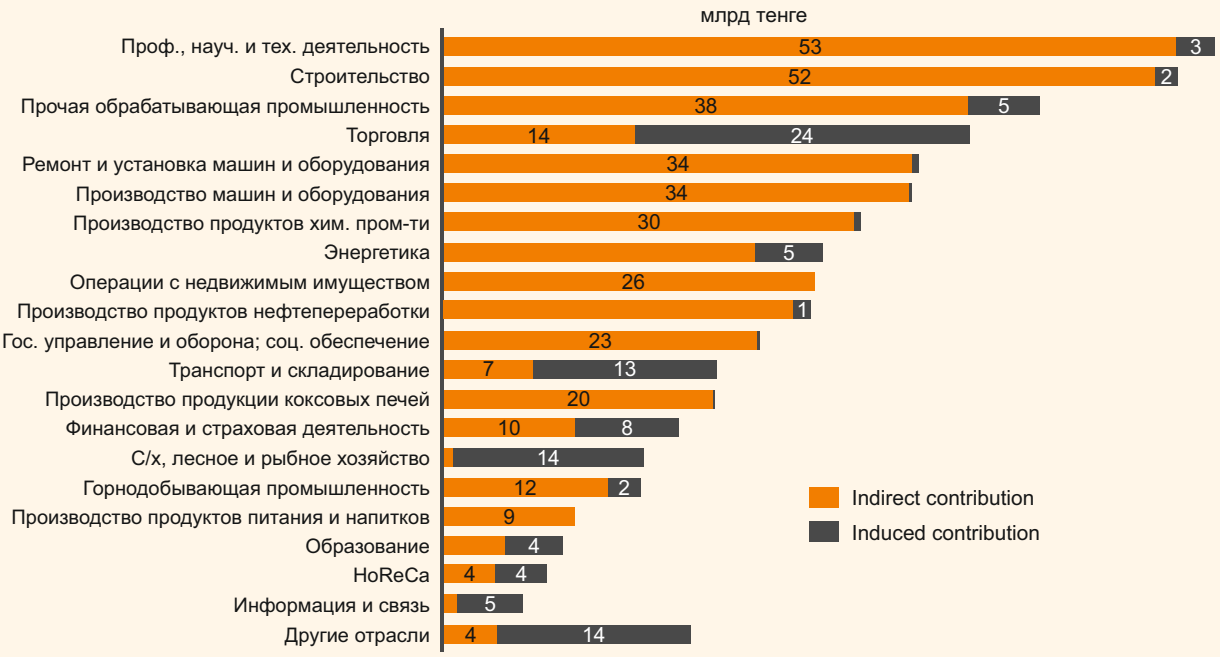


Figure 13 Industry breakdown of indirect and induced contribution to GDP in 2018

The largest percentage (81%) of our total contribution to the value added is observed in four key regions of ERG's presence in Kazakhstan. In 2018, the total contribution to GRP of four regions was KZT 924 billion, including KZT 543 billion generated in the Pavlodar region (47%), KZT 174 billion in the Aktobe region (15%), KZT 159 billion in the Kostanay region (14%) and KZT 48 billion in the Karaganda region (4%). 19% (KZT 220 billion) of total contribution to the value added were generated in other Kazakh regions. The evaluation results of regional contribution to GRP are shown below ( ).

Table 3 ERG contribution to regional GRP in 2018

Region	Direct impact, KZT billion	Total impact, KZT billion	Percentage of total contribution to regional GRP, %
Pavlodar region	368	543	24
Aktobe region	99	174	7
Kostanay region	100	159	9
Karaganda region	29	48	1

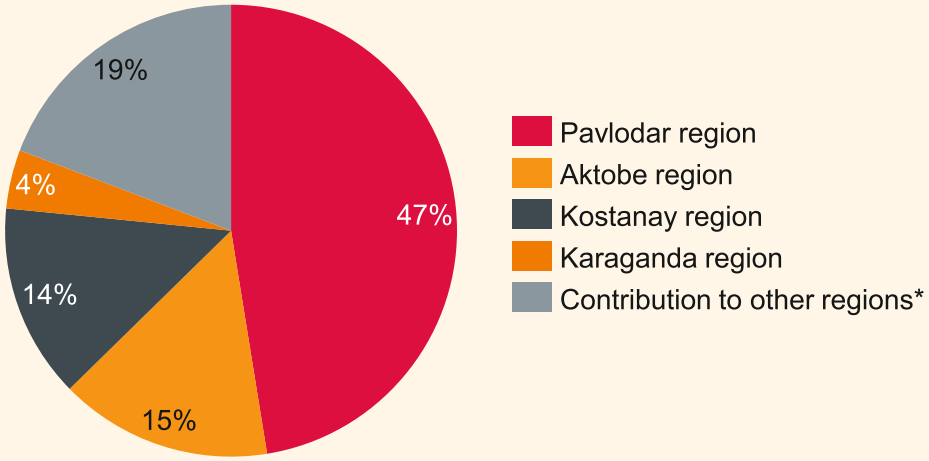


Figure 14 Breakdown of regional contribution to GRP by regions of ERG's presence

** - see notes* [12]

[12] 19% of total contribution to other regions result from:
1) ERG purchases from suppliers from other Kazakhstan regions. Goods and services purchased from suppliers from other regions were considered as import to evaluate ERG contribution to a certain region. Thus, these purchases do not increase the

On average, the total regional contribution to GRP is 1.63 times higher than the direct value added generated by our operations in the regions in which ERG operates. The greatest multiplier effect is generated in the Aktobe region where KZT 76 are additionally generated in the regional economy per KZT 100 of own value added.

The Pavlodar region is the leader in terms of its percentage of total regional contribution to GRP (24% GRP). Over the last 6 years, the total contribution to GRP of Pavlodar region has increased 4.8-fold from 5% in 2013 to 24% in 2018.

ERG's total contribution to GRP of the Pavlodar region is 2.4 times higher than regional budget spending in 2018.

Our capital investments and contribution to innovative development and digitalisation of the economy

Today, the key to the successful and efficient operation of metals and mining companies is their readiness to adapt quickly and implement innovative technologies in production and management processes. ERG is actively working in this area and implements investment projects to increase the innovative potential of the Kazakh economy. During the first five years (2010-2014) of the State Program of Accelerated Industrial and Innovative Development, we invested around USD 2.5 billion in 12 projects. The Group's contribution over this period constitutes 13% of total investments in the country.

Since the start of its operations in Kazakhstan, ERG spent over USD 12.6 billion on the development of existing and the construction of new production facilities.

Currently, the Group is implementing a number of investment projects aimed at increasing production capacities, developing new business segments and improving the efficiency of our operations in general. Examples of significant initiatives underway are shown below.

- *Optimisation of traffic management plan at SSGPO's Kacharsky open pit.* The project is designed to increase the ore mining to 26 Mtpa by 2021.
- *Expansion of Kazakhstan's 10th Anniversary of Independence Mine.* Over the last 15 years the mine has received USD 350 million for Stage 2 construction.
- *Renovation of Workshop No.6 in Aksu Ferroalloy Plant.* The reconstruction of four operating furnaces in Workshop No.6 of Aksu Ferroalloy Plant is designed to increase production of high-carbon ferrochrome, reduce OpEx and increase section life. Furnace reconstruction started in 2017 and is planned to finish by 2024.
- *Reconstruction of power units in Aksu Power Plant.* Replacement of key equipment in two power units (No.5 and No.7) will increase the total plant capacity to 660 MW.

The construction of a new special-grade coke production plant, Stage 2 at KAS and the new high-carbon ferrochrome production section at the Aksu Ferroalloy Plant is also planned to begin in the near future.

One of the targets of the second five-year plan of Kazakhstan's industrial and innovative development is to attract KZT 4.5 trillion in total investments in fixed capital of processing industry between 2015-2019. The Group's companies made a significant contribution to achieving this target and provided KZT 494.4 billion (USD 1.6 billion) in capital investments from 2015-2018, which is 11% of total investments at the national level over the same period.

indirect and induced ERG contributions to the economy. All Group purchases are considered in full when ERG impact is evaluated at the national level.

2) Direct impact of ERG assets located in Almaty and Nur-Sultan.

[13] More detailed information on these and other innovative Group's projects is shown in annual ERG reports on sustainable development.

[14] 2015-2019 Kazakhstan Industrial and Innovative Development Program

In 2018, ERG's companies invested 504.5 million USD, which is 21% of all capital investments in the metals and mining industry in Kazakhstan.

Research and development for the Group's operations is made by the ERG Research and Engineering Centre. The ERG Research and Engineering Centre is also focused on areas such as technology improvement, increase of value added, industrial waste treatment and emissions reduction. The use of liquefied gas as fuel, optimisation of ore particle size distribution, driverless mine trucks and production of environmentally friendly special-grade coke in circulating fluidized bed gasifiers are only a small number of the innovations that were launched at the Group's operations.

Over the last 6 years, our investments in the development and implementation of innovative technologies increased by 3.8 times from KZT 718 million in 2013 to KZT 2,725 million in 2018 (Figure 15).

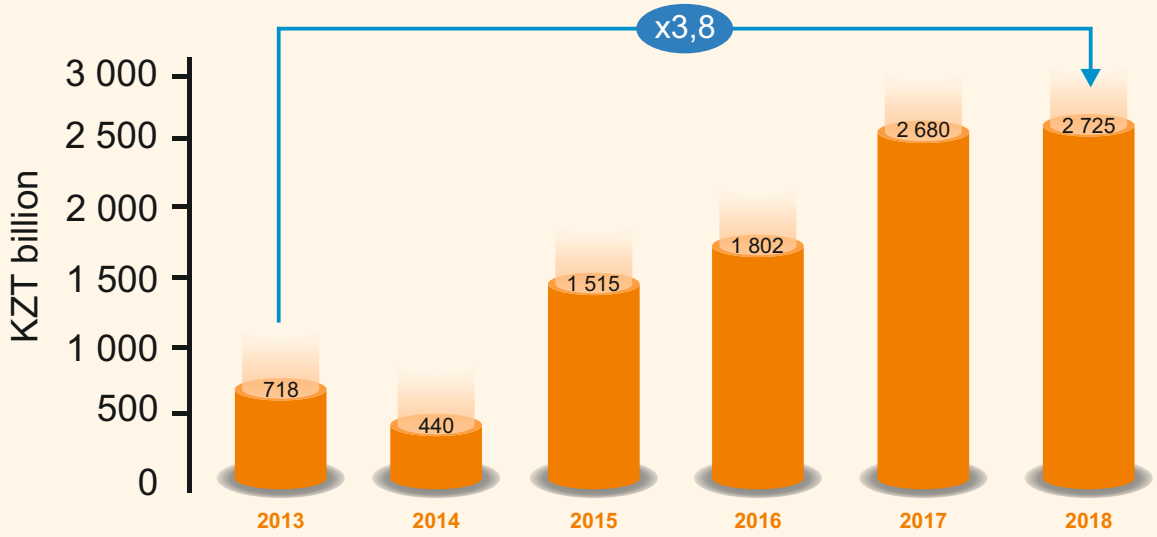


Figure ERG's investments in the development of innovative technologies over 2013-2018

As a comparison, under the 2015-2019 Kazakhstan Industrial and Innovative Development Programme, the funds spent on the development and implementation of innovative technologies to develop the metals and mining industry was KZT 710.4 million, which is almost 4 times lower than our expenditure on innovative development in 2018 alone.

ERG was named the most innovative company in Kazakhstan in 2017 according to the National Technology Development Agency, which recognised our achievements in the innovative development of the metals and mining industry.

Nowadays, company competitiveness depends significantly on IT technologies and automated systems. Thus, ERG's development priorities include transferring to a new business model that is based on the Fourth Industrial Revolution principles (Industry 4.0) and digitalisation. As part of the digital transformation, we are developing the Group's Digital Strategy to improve the efficiency of our decision-making processes and business competitiveness.

We apply the best asset management practices in the industry based on Industry 4.0 principles that underpin the construction of the special-grade coke production plant and ferroalloy waste gas treatment facility at the Aktobe Ferroalloy Plant, the production of 3D powders for adaptive technologies at the Aksu Ferroalloy Plant and the implementation of the Industrial Internet of Things and Artificial Intelligence at SSGPO's Kacharsky open pit (Smart Mine). The implementation of these projects will provide about USD 2 billion in economic benefits, increase the iron ore concentrate throughput to 500 tph and improve mining equipment capacity by 10% by 2025.

Our subdivision Business and Technology Services LLP provides integrated support and has promoted the development of the Group's IT environment over the last ten years. BTS is the driver of large-scale digital transformation for our business and one of its biggest achievements has been the implementation of SAP ERP. SAP ERP is a single information system that is used to run and monitor all business processes and quickly integrate new assets.

[15] National Technology Development Agency JSC

After the implementation of SAP ERP, all our operations started to employ a single set of master data that ensured the transparency and integrity of all the Group's business processes. SAP implementation allowed us to reduce the time required to prepare financial statements, increase the efficiency of financial flow management and obtain controls over targeted investments.Access to SAP ERP and training was provided to almost 8,000 of our employees. In 2018, our project entitled Building an ERP System for ERG Based on SAP ERP Platform received a Silver SAP Value Award 2018 in the nomination "Leader in Digital Transformation".

ERG organised a special taskforce to develop robots for various administrative functions in order to increase labour efficiency and automate routine business processes. For instance, by using these robots, we managed to optimise the processing and analysis of a large volume of ERG's data. A job that previously required 3 employees and 6 to 7 hours of working time can now be done in 4.5 hours by 1 robot. The robots have been developed and now successfully operate in HR, project management, compliance, information security and other structural subdivisions.

We pay the utmost attention to the development of innovative thinking among our employees. At the ERG Innovators' Forum, which has been held every year since 2017, our employees can participate in the competition and present their ideas on innovations, the optimisation of production processes and operational efficiency improvement. Our employees also have an opportunity to present their innovative ideas as part of the Ideas Factory project. In 2017, as a pilot project at SSGPO, the Ideas Factory successfully launched functions in six major Group companies. The employees are awarded with prizes for the best innovative proposals.

Kazchrome 2.0 Project

The Kazchrome 2.0 Project is designed to ramp up the capacity of our flagship chromium ore and ferroalloy production operation to a completely new level. Kazchrome 2.0 aims to expand the existing capacities with consideration of the predicted shortage of chromium ore supplies. The project is implemented to compensate for the predicted shortage of chromium ore and ferrochrome after 2020.

The scope of expansion under Kazchrome 2.0 includes:

- An increase in mining tonnages by commissioning Stage 2 in Kazakhstan's 10th Anniversary of
- Independence Mine;
  The use of standby processing capacities: modernisation of mineral processing circuit with the addition of extra pelletizers and low-carbon ore processing plant;
- The expansion of smelting capacities: commissioning of additional furnaces;
- Sufficient power generation: commissioning of new power station to supply power to the designed facilities.

Kazchrome 2.0 will strengthen our position as a key strategic supplier in the ferrochrome market and provide industrial benefits in terms of both the prices and tonnages of the chromium ore and ferroalloys produced. The pre-feasibility study demonstrated that mining tonnage can be increased to 7.5 Mtpa of ore (with further expansion potential) followed by an appropriate increase in ferroalloy production. The potential increase in ferrochrome production is estimated at up to 0.9 Mtpa by 2030.

The Smart Mine project supports the government target in the digitalisation of Kazakhstan's economy and our intent to leverage the benefits of Industry 4.0 in the interests of our business and our stakeholders.

Smart Mine project

The project was initiated in 2017 in the Kacharsky open pit (part of SSGPO iron ore division). This initiative includes data collection and analysis to ensure full transparency and automated control of multiple performance indicators throughout the entire cycle of iron ore concentrate production, including:

- Process control;
- Open pit control;
- System modification;
- Optimisation of traffic management and logistics.

The project scope includes the dispatching and automated control of mine equipment in real time, integrated planning centres based on GIS, MES and ERP (SAP), accurate satellite positioning and blast control. GIS MineSched and GIS Surpac software, as well as US Modular Mining Systems technologies used for product supply scheduling, make it possible to optimise the production processes.
The estimates show that the project can deliver USD 1.4 million in annual savings and increase efficiency by reducing the number of failures, optimising equipment downtime and improving mine truck dispatching. The first results were obtained at the Kacharsky open pit in 2018, where mining and haulage efficiency was increased by approximately 10%. In the same year, the Smart Mine project won the Gold Hephaistos national competition in the nomination “Project of the Year”.
We plan to finish the project implementation in SSGPO's open pits, as well as in Shubarkol Komir, Aluminium of Kazakhstan and EEC by 2021.

Building a single ERG Manufacturing Execution System (MES)

ERG devoted the year of 2018 to lean manufacturing. This approach, among other things, requires close monitoring of material movement, and loss analysis and prevention. For this purpose, the Group launched a new large-scale programme to build a single Manufacturing Execution System (MES) as an intermediate link between the company production processes and the existing ERP. MES will provide new opportunities to explore how big data and artificial intelligence can be used in our production processes.

The first MES functional module was implemented at Donskoy GOK (Kazchrome) in 2018. Using this platform, operational staff at all levels (from the workshop floor to headquarters) can track metal balance at every stage of the production cycle. In addition, we have launched the MES-based project to create a single information system for the collection and consolidation of operational data (data lake).

Smart ERG Mobile Application

Smart ERG is a corporate mobile application developed for employees' communication with the Group. This application is designed to replace foreign online messengers.

Smart ERG's functions include the following:

- Exchange of text and voice messages, photos, videos and files;
- Corporate news and top-management blogs;
- Personal data on bonuses, leave allowance and benefits;
- Group chats by departments and teams;
- Secure and confidential profile.

The application is available for iOS and Android and has a web version for PCs.

4.1.2 We create jobs and take care to increase the population's personal income

We understand that employment opportunities are the driving factor of economic development for local communities, especially in the remote regions of Kazakhstan. The creation of jobs promotes higher welfare amongst the population, the quality improvement of social and economic housing conditions and increased availability of educational and health care services, which also brings social and economic benefits for the state.

As one of the main employers in the regions in which we operate in Kazakhstan, ERG supported the employment of over 151 thousand people on average annually from 2013 to 2018. Over this period, the total contribution to employment increased by 6% from 144,863 people in 2013 to 153,507 in 2018.

In 2018, over 60 thousand people were employed by our operations across Kazakhstan. Our procurement activities and the consumption expenditures of our employees support another 92,785 jobs in the national economy. Thus, our total contribution to employment in Kazakhstan in 2018 is 153,507 people (Figure 16).

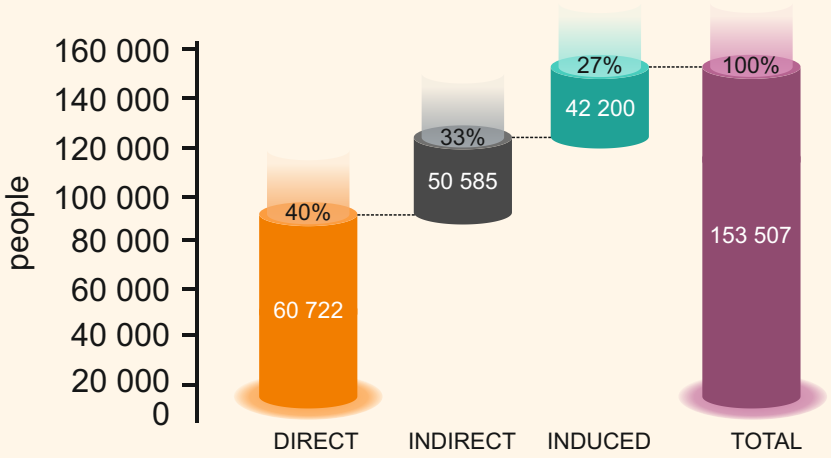


Figure 16 Breakdown of ERG's total contribution to employment in 2018

Our total contribution to employment of 153.5 thousand people makes up 1.8% of the total number of people employed in Kazakhstan.

The breakdown of our total contribution demonstrates that the percentage of indirect and induced impacts (60%) exceeds the direct impact (40%), which is typical for metals and mining companies where a relatively small number of employees manufacture products with high value added. Each job in ERG corresponds to an additional 1.53 jobs in other Kazakhstan economic sectors.

The industry breakdown of our contribution to employment shows that a substantial portion of our indirect contribution to employment falls within the construction, professional, research and technical activities and manufacturing industries, including machinery and equipment maintenance, as well as petroleum products and chemicals production. According to the induced impact breakdown structure, our employees' consumption expenditure supports jobs predominantly in agriculture, education and trade (Figure 17).

[16] Our total contribution to employment of 153.5 thousand people makes up 1.8% of the total number of people employed in Kazakhstan.

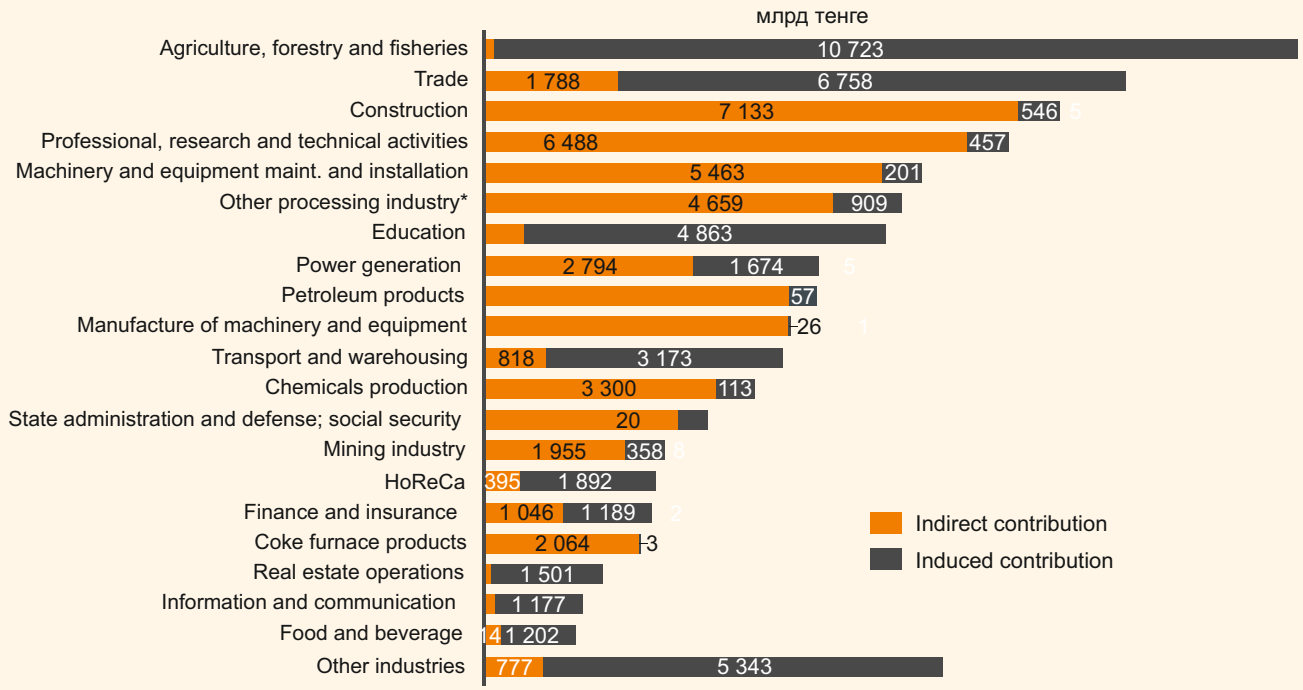


Figure 17 Industry breakdown of indirect and induced contribution of ERG to employment in 2018

The regional breakdown demonstrates that in 2018, the largest portion of our total contribution to employment is observed in the Pavlodar region where the Group operation contributed to 39,596 jobs, which is 10% of the total employment in the region. The evaluation results of the regional contribution to employment are shown below (Table 4).

Table 4 ERG contribution to employment in the regions of the company's presence in 2018

Region	Direct impact, people	Total impact, people	Percentage of total contribution to regional employment, %
Pavlodar region	22 518	39 596	10%
Aktobe region	12 152	24 204	6%
Kostanay region	20 729	45 796	9%
Karaganda region	3 356	6 348	1%

ERG's total regional contribution to employment is on average two times the number of direct jobs provided by the Group's operations in all key regions of the Group's presence in Kazakhstan.

The breakdown of regional contribution to employment includes on average 50% of direct impact, about 30% of indirect impact and 20% of induced impact.

Every second resident of Pavlodar, Aktobe and Kostanay regions employed in the metals and mining industry works for ERG.

Another important performance indicator is labour productivity, which is calculated as the ratio of gross value added of the company to headcount in the reporting period. The value of average labour productivity at ERG in 2018 was KZT 10.1 million per employee, which is higher than the same indicator across Kazakhstan by 64% (Figure 18).

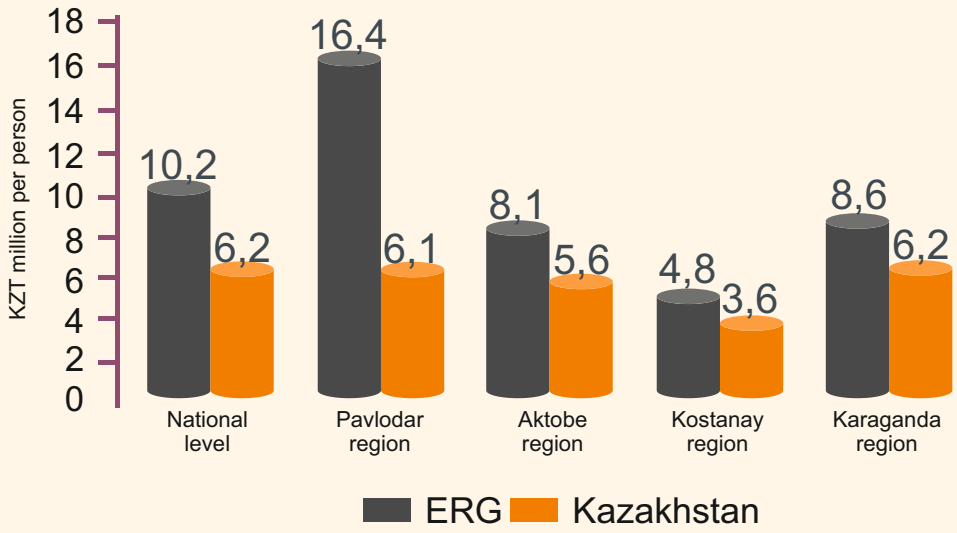


Figure 18 Comparison of average labour productivity in ERG, labour productivity in the regions of the company presence and labour productivity in Kazakhstan

В разрезе областей в 2018 году наибольшее значение средней производительности труда наблюдалось на предприятиях Группы в Павлодарской области, где на одного работника приходилось 16,4 млн тенге добавленной стоимости, что в 2,7 раз превысило аналогичный показатель по области. В то же время, в Актюбинской, Костанайской и Карагандинской областях производительность труда в расчете на 1 работника составила 8,1 млн тенге, 4,8 млн тенге и 8,6 млн тенге соответственно, что в среднем в 1,4 раза больше производительности труда в этих областях.

ERG's total contribution to GRP of the Pavlodar region is 2.4 times higher than regional budget spending in 2018.

The 2018 regional breakdown demonstrates that the highest average labour productivity was at the Group's operations in the Pavlodar region, where one employee corresponds to KZT 16.4 million of value added which was 2.7 times higher than the same indicator in the region. The labor productivity per employee in Aktobe, Kostanay and Karaganda regions was KZT 8.1 million, KZT 4.8 million and KZT 8.6 million respectively, which exceeds the labour productivity in these regions on average in 1.4 times.

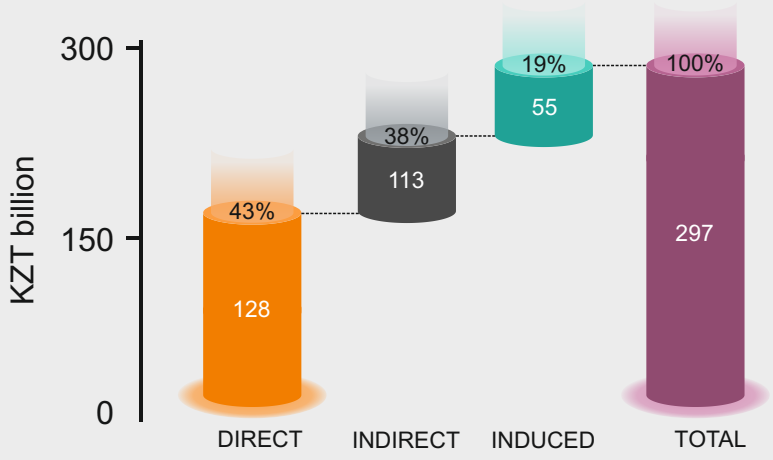


Figure 19 Breakdown of ERG's total contribution to personal income in 2018

The total contribution to the population's personal income exceeds our direct contribution by 2.3 times. This implies that the national economy receives an additional KZT 1.32 as the earned income per tenge of an ERG employee's salary.

Each tenge earned by ERG's employees generates another KZT 1.32 earned by employees in other sectors.

We pay the utmost attention to ensuring decent employee compensation at our operations and strive to maintain a competitive salary. To achieve this target, we regularly monitor the salaries in the market and control turnover in order to understand the real conditions and make timely payroll-related decisions.

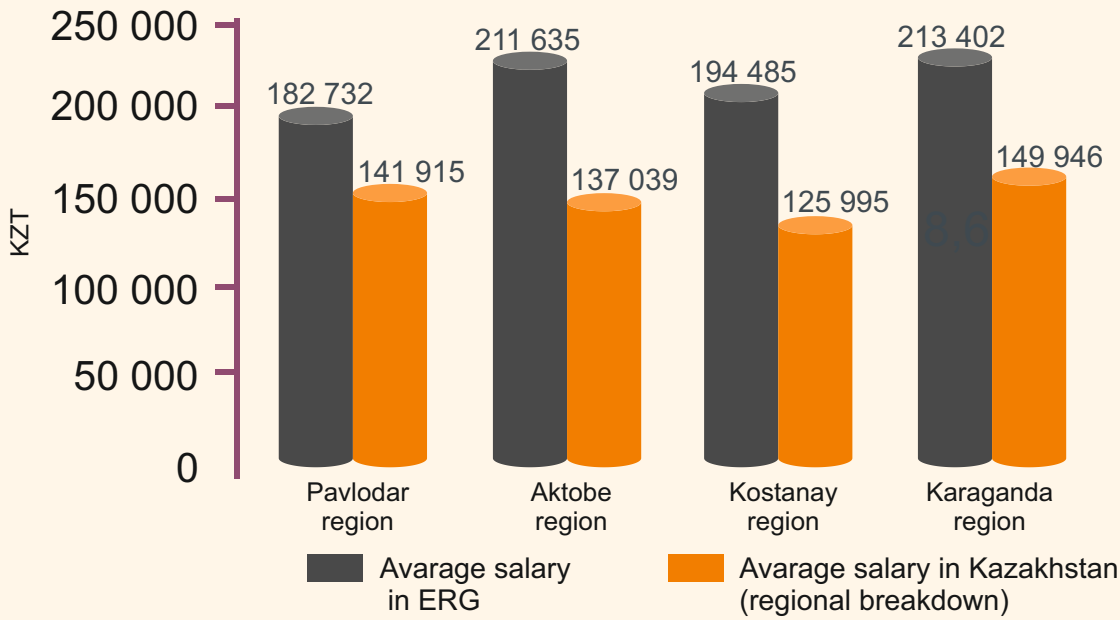


Figure 20 Average monthly salary at ERG compared to the average salary in Kazakh regions in 2018

The comparison of the nominal average monthly salary at ERG with those across regions in Kazakhstan shows that the income earned by our employees in 2018 was on average 1.5 times higher than the average income in those regions (Figure 20). In addition, in 2019 we raised the salaries of more than 58 thousand of our employees, including 23 thousand employees in the Pavlodar region, 21 thousand employees in the Kostanay region, 11 thousand employees in the Aktobe region, and 3 thousand employees in the Karaganda region. In general, the salary growth was 9 to 14%.

The biggest contribution to personal income was in the Kostanay region and amounted to KZT 89.5 billion. According to the percentage of contribution to personal income earned by the population, the Pavlodar region takes the leading position and makes up 14% (KZT 73.4 billion). The evaluation results of regional contribution to personal income are shown below (Table 5).

Table ERG's contribution to personal income in the regions of the company's presence in 2018

Region	Direct impact, KZT billion	Total impact, KZT billion	Percentage of total contribution to regional personal income, %
Павлодарская область	41,3	73,4	14%
Aktobe region	24,3	42,6	6%
Kostanay region	40,5	89,5	12%
Karaganda region	6,9	11,3	1%

The direct impact accounts for more than half of our total regional contribution to personal income. The breakdown of indirect and induced impacts is generally similar to the regional contribution to employment.

Every KZT 100 earned by ERG employees in the Pavlodar, Aktobe, Kostanay and Karaganda regions corresponds on average to an additional KZT 85 earned by the population in other sectors of the regional economy.

50% of income in the metals and mining industry in the Pavlodar region is earned at ERG's operations.

Our contribution to employment in Kazakhstan's monotowns

ERG makes a significant contribution to employment in Kazakhstan's monotowns, including Rudny, Aksu, and Khromtau, as well as in the Kachar and Oktyabrsky urban settlements.
In 2018, our operations in these towns supported 33.6 thousand jobs, which makes up 22% of the total Group's contribution to employment in the country.
The number of direct jobs created by our operations vs total employment rate in Kazakhstan's monotowns is shown below.

Table 6 ERG's direct contribution to employment in the monotowns in which the company operates in 2018

Monotown, region	Number of ERG's employees, people	Employed population	Percentage of direct contribution to employment
Khromtau*, Aktobe region	7 442	13 374	56%
Kachar*, Kostanay region	3 290	6 775	49%
Oktyabrsky*, Kostanay region	657	2 245	29%
Aksu, Pavlodar region	9 587	36 837	26%
Rudny, Kostanay region	12 634	70 425	18%

**The employed population data is calculated as town population multiplied by the percentage of employed population in the administrative region population*

It is impossible to calculate the total impact by individual monotowns due to limitations in statistical accounting. However, considering the breakdown of multiplier effects in regional contribution, we affirm that the Group's direct contribution to the monotown economy makes up the biggest portion of our total impact. This confirms the high economic dependence of monotowns on the Group's business.
We recognise the importance of our operations for the social and economic life of Kazakhstan's monotowns and allocate significant funds for economic diversification of the regions and professional development of youth to reduce the dependence of our these towns on the Group's business (for more details, see Section).

4.1.3 Our contribution to the state budget

We operate strictly according to the Kazakh regulations. We make a significant contribution to state revenue by fulfilling our tax and other mandatory payment obligations, as well as by supporting tax payments in other economic sectors through payments to suppliers, contractors and employees in the supply chain.
Transparency of any government payments underpins our tax policy. As one of the largest taxpayers in the industry, we have been actively participating in the Extractive Industries Transparency Initiative (EITI) in Kazakhstan for more than ten years.
ERG is the fifth largest taxpayer in Kazakhstan. In 2018, we paid KZT 185 billion in taxes and other mandatory payments, including KZT 48.3 billion of recoverable VAT.
Most taxes and mandatory payments (64%) were made to the state budget, while 23% and 13% were made to local budgets and extra-budgetary funds respectively (Figure 21).

[17] EITI web-site in Kazakhstan
[18] Taxes and other mandatory payments to consolidated budget (excluding extra-budgetary contributions and non-tax revenues)
Source: News agency LS according to the State Revenue Committee of the Republic of Kazakhstan

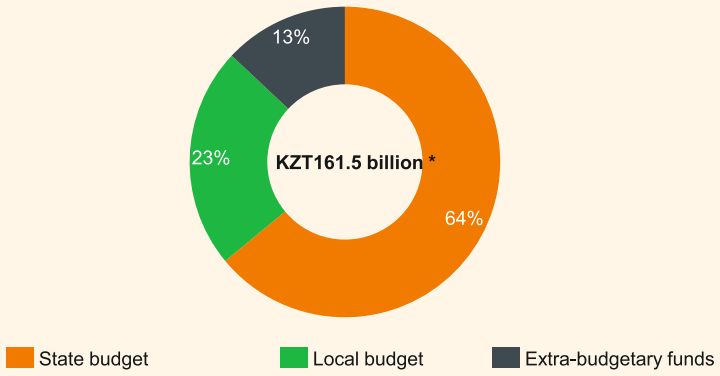


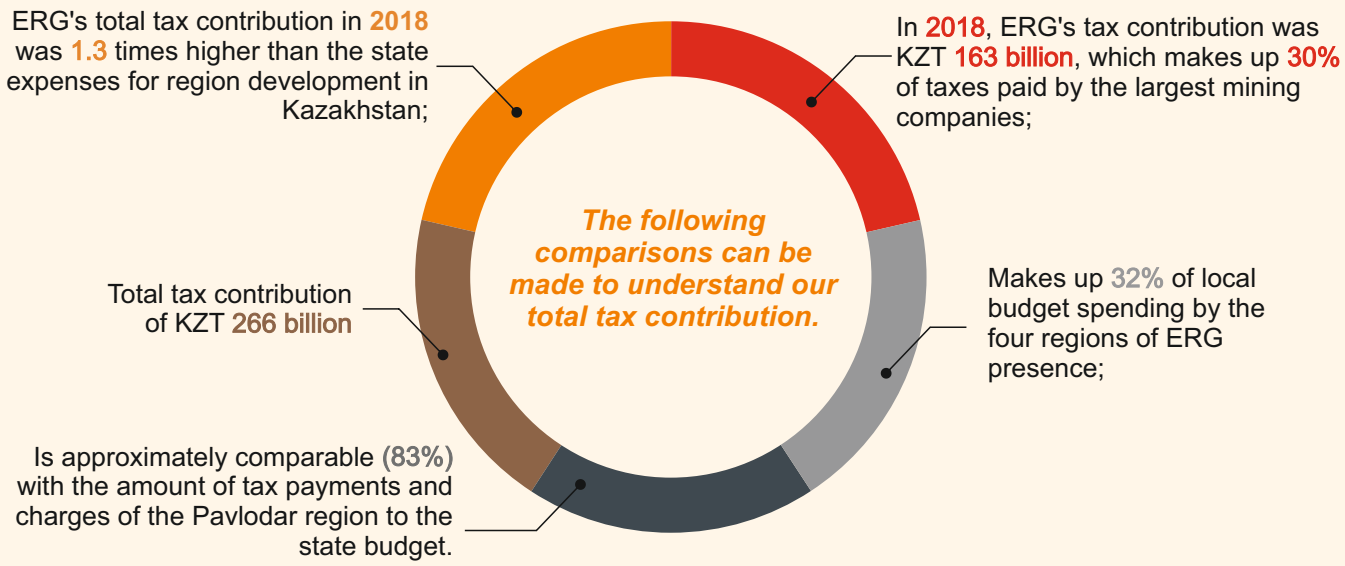
Figure 21 ERG's tax payments to Kazakh state budgets and extra-budgetary funds

** excluding assets in Nur-Sultan and Shymkent*

Corporate income tax, mineral extraction tax and social benefits prevail in the breakdown of our direct tax contribution and make up 81% of all taxes and mandatory payments made by ERG in 2018.

In 2018, the Group paid KZT 266 billion in taxes, which makes up 3% of all taxes and mandatory payments paid to the Kazakhstan budget and extra-budgetary funds. Total tax contributions excluding recoverable VAT was KZT 314 billion.

If we disregard tax contribution of the oil and gas industry in 2018, ERG's total tax contribution makes up 8% of all tax payments made to the Kazakh budget. [20]



The direct impact prevails in the breakdown of total tax contribution and includes taxes and payments made by ERG operations. In 2018, KZT 185 billion of direct tax contribution in taxes and payments made by suppliers and contractors generated KZT 58 billion of indirect tax contribution. Another KZT 23 billion of induced tax contribution is generated through taxes and payments made by other companies as a result of consumption expenditures of our employees and the employees of our contractors and suppliers (Figue 22).

Every KZT 100 of ERG's tax payments correspond to KZT 44 of additional tax payments in Kazakhstan.

[19] According to the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan
[20] According to the State Revenue Committee and National EITI report, 2018
[21] According to the 2018 progress report on 2020 Regional Development Program
[22] According to top 100 of the largest taxpayers in Kazakhstan

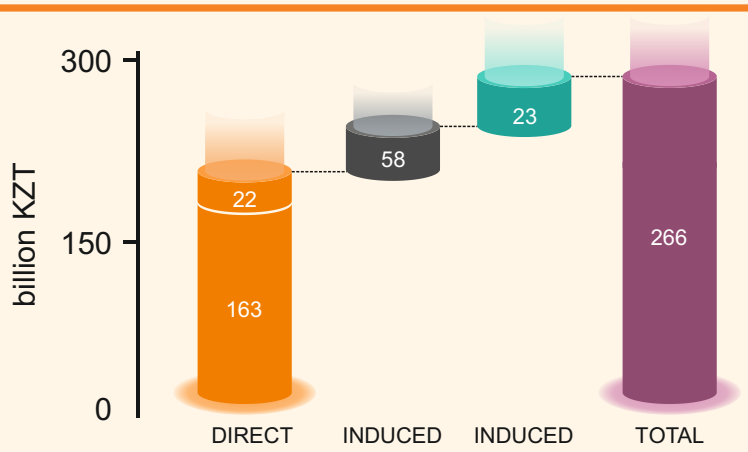


Figure 22 Breakdown of ERG's total tax contribution in 2018, including KZT 48.3 billion of recoverable VAT

Our total tax contribution between 2013 and 2018 was KZT 1,291 billion. During this period, the cumulative average annual growth rate of total tax contribution is 9% (Figure 23).

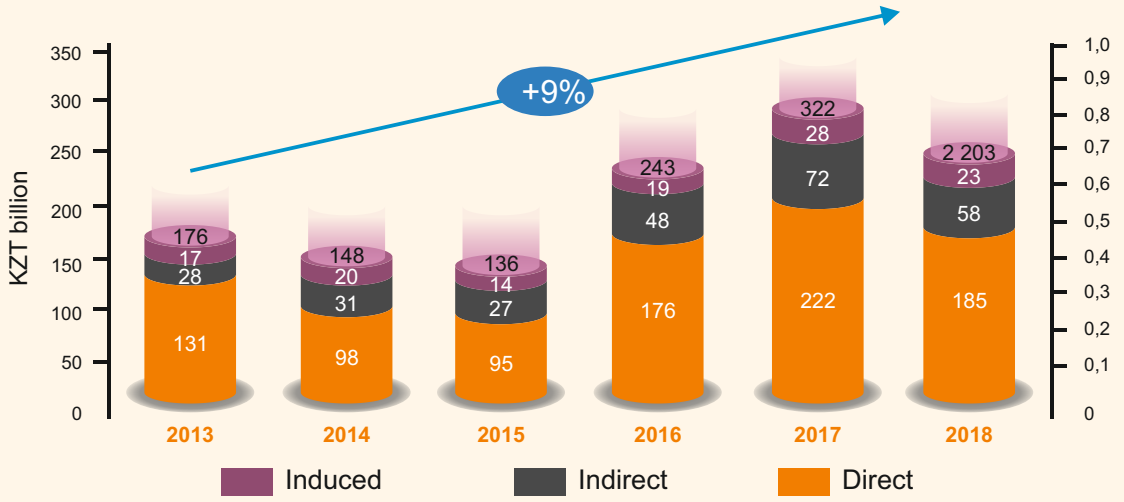


Figure 23 Dynamics of ERG's tax contribution in 2013-2018

** According to the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan*

The decrease in tax contribution in 2013-2015 resulted from a rise in the inflation rate, as well as a decrease in ERG revenue by 28% vs 2014. A 17% decrease in tax contribution in 2018 compared to the previous year resulted from lower corporate income tax (by 38%) and higher recoverable VAT (by 31%).

Another important indicator of the Company's tax-related performance is the tax burden ratio calculated as the ratio of taxes and other mandatory payments made over the reporting period to gross income in the similar period. Simply put, it is a percentage of ERG revenue paid in taxes to fulfill our tax obligations. An alternative method was also used to calculate the tax burden ratio based on the gross added value. The following results were obtained.

1. *The tax burden ratio calculated based on the total annual income in 2017 was 6.7%, which is three times higher than a country-wide indicator calculated using the same method;*

2. *The tax burden ratio calculated based on the gross added value in 2018 was 11.2%, which is also three times higher than a country-wide indicator calculated using the same method ( ).*

[23] Direct ERG tax contribution includes recoverable VAT: (20) billion in 2013, (34) billion in 2014, (33) billion in 2015, (21 billion in 2016, (37) billion in 2017, (48) billion in 2018

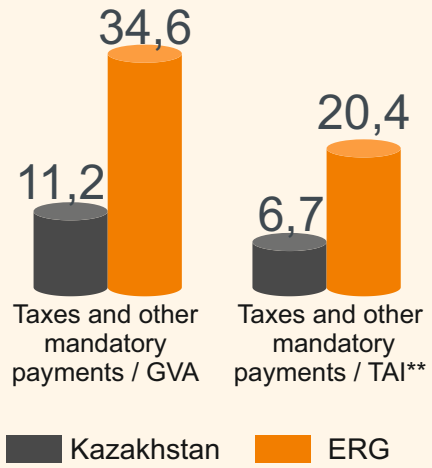


Figure 24 ERG and Kazakhstan's tax burden in 2017 and 2018 calculated using two methods [24]

(GVA – gross value added, TAI − total annual income)

**According to the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan and the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan*

Scenario analysis: higher percentage of local content in ERG's procurement

Our contribution to the development of Kazakhstan economy directly depends on the local purchases. As mentioned earlier, we continually strive to increase the percentage of local content in purchases of goods and services. Currently, the percentage of local goods and services ERG purchases is 47%. By 2020, we plan to increase it to 70%.

Our capability to involve local suppliers and contractors is determined by a number of factors such as the availability of qualified manpower, technical and commercial capabilities of domestic companies, relative cost and quality of the goods and services offered compared to their import equivalents. Unfortunately, not all domestic companies comply with the criteria above forcing us to purchase some goods and services from foreign suppliers. However, if possible, we always prioritise local companies and support the development and strengthening of local businesses in the country.

The scenario was analysed to understand the potential of increasing our contribution to the national economy by increasing the percentage of local content in our procurement. This scenario is based on the Group's procurement structure in 2018 and considers substitution of certain categories of imported goods (Table 7).

Table 7 Categories of imported goods to be substituted in the scenario analysis

Category of goods	2018 procurement amount, KZT billion
Sodium carbonate	14,7
Grade A anode paste	6,5
Winter diesel	5,2
SPV Mine reinforcement	4,8
Ammonia nitrate	3,2
Aluminum fluoride	2,4
Refractory bricks	1,6
Track switches	1,4
PPE	1,1
Roller bearings	1
Railway wheel set	0,9
Total :	42,8

[24] Tax and payment values do not include customs duties according to the Standards of Tax Burden Calculation (for more details, see the Study Methodology section).

The estimated amount of import substitution is KZT 42.8 billion, which is 6.4% of total Group's procurement in 2018. Let us review how our total impact will change in this scenario (Table 8).

Таблица

Types of contribution	Scenario analysis: increased total imcome in absolute terms	Scenario analysis: increased total income compared to actual indicators in 2018, %
GDP, KZT billion	11,75	1,0%
Production, KZT billion	15,19	0,7%
Employment, people	999	0,7%
Personal income, KZT billion	2,51	0,8%
Taxes, KZT billion	1,62	0 6%

Higher percentage of local content does not increase the direct contribution. An increase in the indirect contribution foremost and induced contribution in a lesser extent promotes an increase in total contribution.

An increase in total contribution to GDP is about KZT 12 billion. With the direct impact remaining the same, the indirect and induced impacts will increase by 2.8% and 0.6% respectively (Figure 25).

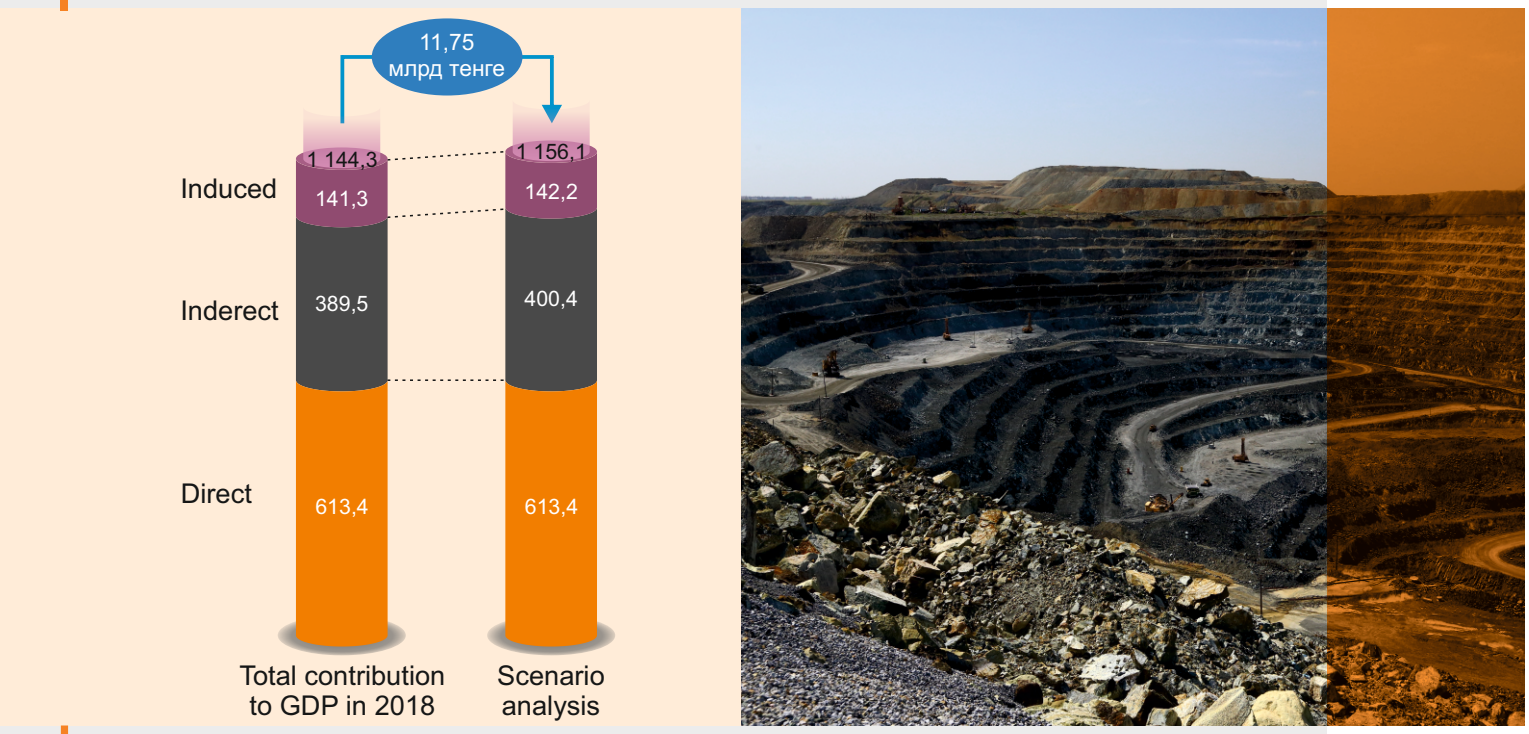


Figure 25 Change in total contribution to GDP in the reviewed scenario

The higher percentage of local content in the reviewed scenario will allow us to create an additional 1,000 jobs in the national economy. Our contribution to personal income can increase by KZT 2.5 billion in absolute terms and reach KZT 299.4 billion. Taxes and other mandatory payments to the state budget will also increase by 0.6% and reach KZT 267.3 billion.

[25] Comparison with procurement excluding purchases within the Group

4.2 OUR CONTRIBUTION TO SOCIAL DEVELOPMENT AT NATIONAL AND REGIONAL LEVELS

4.2.1 We create favourable conditions for the life and development of people

The presence of ERG in Kazakhstan plays a significant role in the lives of populations in the regions of our presence. We have built durable relationships and trust with the local communities based on the established role of our operations as the centres of social and economic development in the most remote regions in Kazakhstan. ERG's operations provide jobs and a number of key social services, such as electrical and thermal energy, the construction of houses, the development of infrastructure and education.

We create beneficial living conditions in regional communities in Kazakhstan through a host of social investment programmes. Our approach to social investments in communities is guided by the following factors:

Historically established relationships with local communities

We are committed to maintaining and developing long term relationships with the local communities in our regions of presence. In addition, we invest heavily in the diversification of the regional economy and the professional development of young people to reduce the dependence of the local communities on ERG.

Cooperation with the government

We maintain a significant part of our social investments through memorandum on cooperation agreements that we conclude with local executive bodies in the regions of Kazakhstan on an annual basis. Together with regional Akimats, we are implementing initiatives in the areas of infrastructure development, education, health, youth education and support for social cohesion. We are confident that such partnerships play an important role in the social and economic development of local communities.

Employees and local communities

Our social investments are aimed at improving the quality and standard of living of our employees and their family members as the representatives of the local community. We want to create favourable conditions for their lives and work in the long term. In this context, it is of great importance for us to undertake activities to promote the long term economic diversification of the regions of our presence.

Social investments at the national level

We are proud to have been active in Kazakhstan for many years and that our positive impact on economic development goes beyond our regions of presence. In this context, we are promoting the implementation of national social investment programmes aimed at solving the most important social and economic problems in Kazakhstan as well as preserving national cultural heritage.

The contribution to the social and economic development of local communities is one of the priorities of our Strategy-2025. The realisation of this strategic focus area involves improving welfare and the well-being of society in our regions of presence, the development of local entrepreneurship and the creation of a local business environment.

In our regions of presence, we make social investments through the following channels:

- Direct social investments: aimed at maximising positive impacts and reducing negative impacts on local communities. Direct social investments, in turn, are carried out in the form of charitable donations and sponsorship agreements.
- Investments in social partnership: provision of funding under partnership agreements with local authorities in the field of social and economic development of local communities.

All our social projects are aimed at resolving pressing problems in the regions of Kazakhstan by providing economic, social and environmental benefits to all parties involved.

From 2013-2018, ERG implemented 1,404 social projects in seven regions in Kazakhstan and nationwide at a total cost of more than KZT 112 billion. At the same time, investments increased 7.5 times in the last 6 years - from KZT 5,356 million in 2013 to KZT 39,895 million in 2018 (Figure 26).

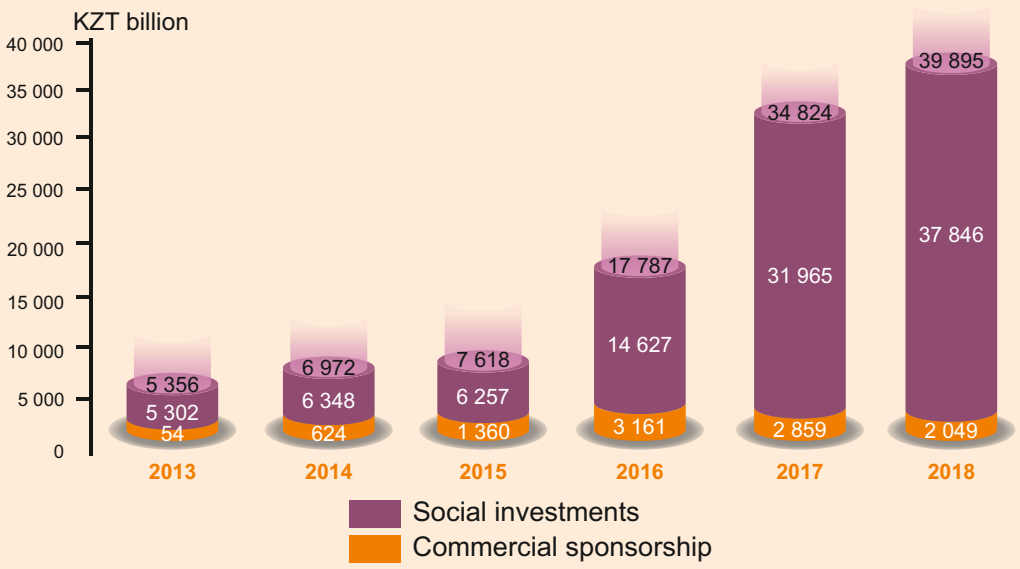


Figure 26 ERG's social investments for 2013-2018

Our social investments are guided by the principles of social partnership and we actively cooperate with the local executing bodies through memorandum on cooperation agreements. As part of our memorandum on cooperation agreements from 2013, KZT 27.5 billion was allocated to social projects in four regions in Kazakhstan, which amounted to 24% of the total amount of ERG's social investments.

According to our Policy on Corporate Social Responsibility and sponsorship projects, ERG's priority areas of social investment are:

- Healthcare and the promotion of safety and environmental protection;
- Infrastructure and social security programmes;
- Promoting education and supporting youth;
- Supporting sports and promoting a healthy lifestyle;
- Preserving of cultural heritage and promoting friendly interethnic relations.

The below (Figure 27) chart breaks down our social investments into key categories.

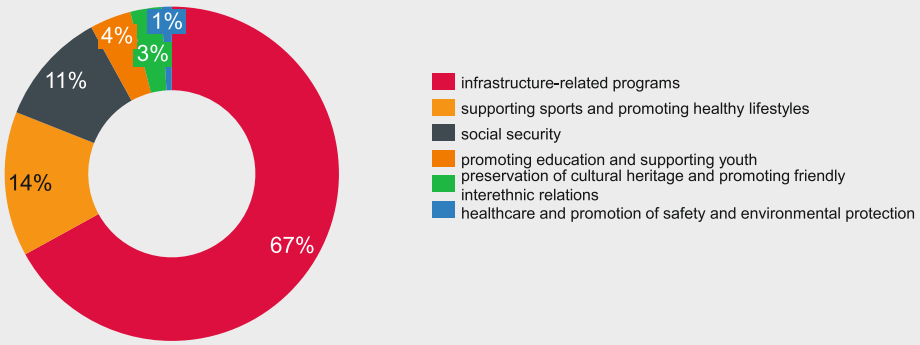


Figure 27 Structure of ERG's social investments on directions

Over the researched period, most of our social investments (67%) were directed to developing infrastructure, in particular, the construction and reconstruction of sporting facilities, cultural and communal facilities, the installation of children's playgrounds and parks, the repair of roads, etc. In terms of funding (14%), our second largest investments went to supporting activities related to promoting sport and a healthy lifestyle. The other largest investment related to providing assistance to vulnerable social groups (orphans, pensioners, disabled people, veterans), amounting to a 11% share of total investments.

Close and continuous interaction with the local communities helps us respond to their concerns in a timely manner and plan our activities to meet their needs which is important to maintain our social licence to operate.

Thus, in order to solve urgent social and economic problems and to identify priority areas of regional development in Kazakhstan, since 2016 we have been implementing a large-scale “Native Cities” (“Tugan Zher”) programme. This programme is an example of our transition from individual initiatives to strategic social investments to ensure sustainable outcomes for our communities.

As part of the programme in 2017-2018, we carried out an analysis of the state of the urban environment in ERG's regions of presence in Kazakhstan. The evaluation was based on the analysis of sixteen development indicators, including housing standards, transport infrastructure, water and sewerage systems, electricity infrastructure, health and education. The study covered key settlements of the Group's presence in Aktobe, Kostanay and Pavlodar regions (Khromtau, Rudny, Lisakovsk, Oktyabrsky, Aksu, Kachar, Ekibastuz, and Pavlodar).

In addition, in 2018, we completed a series of comprehensive sociological surveys, which totalled nine thousand respondents, including five thousand ERG employees and four thousand local residents.

This research has proved the effectiveness of our work in improving the quality of the urban environment and accelerating the social development in the regions of the Group's presence. This is demonstrated in the following results:

- *Over the past year, the satisfaction of the population with the situation in their settlements has increased by 4%;*
- *The population's likelihood to migrate reduced by 2%;*
- *More than 60% of respondents were highly appreciative of ERG's contribution to the development of social welfare in their settlements.*

The results of the social and economic studies conducted in the regions of Kazakhstan served as the basis for the development of the Group's new strategy to support long-term social and economic development in the regions of our presence. This strategy allows us to address key regional development priorities through a more targeted bottom-up approach. The following areas have been identified as priorities for our work in the field of social development:

- *Housing and utilities infrastructure;*
- *Public transport;*
- *Improvement of urban space;*
- *Education and professional development of young people;*
- *Modernisation of medical institutions and enhancing medical qualifications of doctors;*
- *Popularisation of sport and a healthy lifestyle, including the development of local sports infrastructure and youth sports leagues.*

In order to enhance and resolve the problems of social, engineering and transport infrastructure, we form three-year-long programmes for the development of the regions of our presence together with local executive bodies. These programmes serve as the basis for concluding annual memorandum on cooperation agreements with the Akimats of Aktobe, Kostanay and Pavlodar regions.

At the same time the competition for the development of social programmes, "City of ERG", is organised in the regions of our presence on an annual basis and is aimed at increasing the level of public consciousness, social initiatives and proactive position of the employees of the Group, the involvement of employees in improving the social issues in the regions of presence, the development and support of the best social projects. The winners receive financial rewards as part of the memorandum on cooperation agreement between the regional Akimats and ERG.

We are confident that our strategic social investments into the regions of presence in Kazakhstan will bring real changes in the nearest future and will help to convert them into the places, favourable for life and work in the long term.

4.2.2 Our most significant social projects and initiatives at the national level

STEM laboratories at schools for the development of innovative thinking of the young Kazakhstanis

Implementation period: 2017-2018

Investments: KZT 81.5 million

In 2017, we launched a programme of financing STEM-laboratories in the regions of presence in Kazakhstan as part of the signed memorandum on cooperation agreement with the regional Akimats. As a result of this programme, senior pupils in the cities of our presence – Pavlodar, Aksu, Khromtau, Lisakovsk, Rudny, Ekibastuz, Aktobe and Nur-Sultan obtained the opportunity to acquire basic knowledge and skills in engineering, computer programming, robotics engineering and 3D-modeling.

Such innovation centres make it possible to expand the access of pupils in remote regions of Kazakhstan to contemporary educational technologies and help them to further their knowledge in science through play, using theory in practice.

The programme is implemented in partnership with the state educational institutions including the education authority of Nur-Sultan and an educational charitable institution "Bolashak Engineering". Within the framework of the programme, ERG finances the acquisition of technical equipment, while local governments carry out laboratory staff recruitment.

The first laboratory was opened in a secondary school in the suburb of Nur-Sultan at the beginning of 2018. Additionally, USD 235,543 were provided in the same year and 10 additional STEM laboratories for more than 9,000 pupils were built in the regions of Kazakhstan.

Teachers and school directors of the STEM laboratory praised the initial results of the programme; they noted that 80% of pupils furthered their knowledge in natural sciences.

Thus, the Group contributes to improving the quality of school education in the regions of our presence in Kazakhstan, helping future generations to develop the skills that will enable them to succeed in the labour market in the future, and in the long term will contribute to the diversification of the economy and to regional development.

Student Entrepreneurship Ecosystem Programme – stability and prosperity through the empowerment of young people

Implementation period: 2017 - present

Investments: KZT 50 million

The Student Entrepreneurship Ecosystem Programme is our answer to the skills shortage in the developing hi-tech industry that is particularly important for the distant regions of our presence. The purpose of the project is to develop entrepreneurial skills among the younger generation, form business communities by transforming regional universities into the centres dedicated to the development of entrepreneurship.

The initiative was launched for the first time in 2017 at the Pavlodar State University in partnership with the Almaty Management University and Association of the Friends of Tel-Aviv University in Kazakhstan. The project offers the opportunity to take part in events on entrepreneurship and to deepen knowledge on innovative approaches to conducting business through networking.

[26] STEM (Science, Technology, Engineering, and Math) – are key academic disciplines, united in one direction.

The programme is currently being implemented in eight higher education institutions and one college in four regions in Kazakhstan - Aktobe, Karaganda, Pavlodar and Kostanay. We work in close cooperation with partner universities, helping them to develop strategies of "transformation" and study programmes. Besides direct investments, students get access to ERG's technical premises and laboratories to conduct scientific research and experimental design works. Students are also able to meet with the leading experts in business development who help them to commercialise their ideas.

As part of the initiative, students developed 282 projects and proposed 203 solutions to business cases; 3000 students, more than 500 teachers and staff members of higher education institutions have so far completed their training.

An important event in the framework of the Student Entrepreneurship Ecosystem programme was the Big Ideas Camp six-day business ideas marathon that was held in the summer of 2018. 75 students from five higher education institutions across the country took part in the work of the summer camp. Throughout the week, students participated in intensive business workshops and masterclasses on leadership, critical and design thinking, personal finance management, project management, storytelling, marketing and many others. These disciplines will help future entrepreneurs to promote their own business. As a result of the Big Ideas Camp, students not only gained knowledge, but also managed to develop their own business ideas, calculate implementation costs and estimate income.

Over 17 events were held during the implementation period, which aimed at developing entrepreneurial thinking of youth, such as roundtables, championships to solve business cases, training courses and entrepreneurial weekends.

We believe that our activity in the development of entrepreneurial ecosystems contributes to qualitative improvement of business environment, the creation of high-paid jobs and overall development of economy in our native regions.

We want students not to look for jobs after graduation, but to create them. This is especially true in our native regions.

Enhancing opportunities for people with special needs: Project "Makeathon TOM Kazakhstan"

Implementation period: 2017-2018
Investments: KZT 15.25 million

The international social project Makeathon TOM has been held in Kazakhstan since 2017, which is the first time it took place in the CIS region. Makeathon TOM Kazakhstan is a project where makers (craftspeople) together with the people with disabilities create prototypes to solve everyday problems. ERG has been a sponsor of this project since 2017.

In 2017, the Pavlodar State University named after S. Toraigyrov was chosen as a platform for the makeathon, where 50 inventors took part. After three days of groupwork, participants from different cities presented their developments, most of which have no analogues in the world. The winners were graduates of KazNU named after Al-Farabi with the "smart" glove project, which translates mechanical gestures of deaf mute people into digital code, thus helping to communicate with people who do not understand sign language. The second place was awarded to representatives of the Kazakh Agrotechnical University named after S. Seifullin, who presented the "Modernization of three-wheel bicycle for people with cerebral palsy" project, taking into account all individual characteristics of a person. The team from KazNITU named after K. I. Satpaev with the "Assisting Vision System" project and a team from the East Kazakhstan State Technical University named after D. Serikbaev with the development of a prosthesis on both legs with a removable foot to replace it with skis or skates took third place in the makeathon.

[27] Official web-site of the project "Student Enterprise Ecosystem"
[28] TOM – Tikkun Olam Makers

All the winners were invited to study at the School of Social Entrepreneurship, and then, as part of the third stage of the PostTom makeathon, they showcased the modified prototypes to investors for further promotion.
Also, in 2017, the makeathon was held in Karaganda city at the Karaganda Medical University. The participants developed 10 clever devices, including exoskeletons, a modernized cane, a universal device for lowering and lifting wheelchairs on stairs. The Karaganda team assembled a hand bike where the pedals are rotated with hands. This was developed at the request of a person with CSIP, for him to be able to move around the city without crutches. Moreover, one of the developments has already been taken onboard by "Luch" Neurorehabilitation Centre. At the Centre, a simulator was installed for people with cerebral palsy and pathology of the musculoskeletal system that develops mobility and contributes to overcoming fear. And the first place in the makeathon was awarded to the team from Almaty, Karaganda and Pavlodar with the project of the functional cane for the blind people, equipped with sensors that give signals to detect obstacles.
The event, held in May 2018 in the Technopark of the Nazarbayev University included teams from the Nazarbayev University, JSC Astana Medical University, the National Centre for Children's Rehabilitation of the Corporate Foundation "University Medical Centre". The participants of the makeathon for 72 hours collected prototypes of products designed to make the lives of people with special needs easier and more comfortable. According to the results of their painstaking work, the jury presented such devices as an electric set-top for a wheelchair, multifunctional walking on wheels, an exo-glove for patients with cerebral palsy, a multifunctional device for people with motor disorders, and exo-glove for people diagnosed with finger paralysis and a wheelchair charger.
The winners of the 2018 Makeathon were the "StepLife" team, which presented the most elaborate prototype of a standingchair, which expands the possibilities of people who are bed bound and facilitates the life of those who care for them.
By supporting key large-scale social projects, ERG opens up prospects of introducing prototypes into industrial production and facilitating the lives of people with disabilities.

4.2.3 Our social initiatives in regions and single-industry towns of Kazakhstan

Pavlodar region

From 2013-2018, ERG allocated almost KZT 17 billion for the social development of Pavlodar region, including KZT 13 billion allocated as part of the memorandum on cooperation agreement with local executive bodies. Priority areas of investment were programmes in the field of sports support (more than KZT 8.3 billion), infrastructure development (more than KZT 5.2 billion) and education support (more than KZT 1.8 billion).
In 2015, we donated to five new tram cars with modern technical characteristics to the city of Pavlodar. This project is key to society, due to the fact that the tram is the main mode of transport, which our employees use to get from the city to factories. In 2016, we allocated funds to build a 200-person residence at the Pavlodar College of nonferrous metallurgy to support education in the region, which allowed to create comfortable conditions for living and training qualified personnel.

ERG supported 21 educational institutions in Pavlodar region from 2013-2018.

Another example of a significant project in Pavlodar city is the construction of an Olympic 50-metre swimming pool in 2018 that serves as a starting point for achieving high results in the international arena for 5,000 people in the region as well as for 80 athletes of the national team of Kazakhstan.

More than KZT 8 billion went into the development of sport and health promotion in the Pavlodar region from 2013-2018.

Socially significant projects were implemented in single-industry towns such as Aksu and Ekibastuz mainly in the field of infrastructure construction thanks to ERG's financial support. The funds were allocated for the improvement of sporting grounds, streets, parks, repairs of schools. A project was implemented to reconstruct an abandoned cinema building into a cultural and leisure centre comprising 205 seats in Aksu city in 2014. The complex includes concert and cinema halls, a recording studio and offers comfortable conditions for everyone.“Zhalyn” hockey court with an area of 1500 meters2 was opened and its adjacent territory was arranged thanks to ERG's cooperation with the Akimat of the Pavlodar region in 2016.

Social assistance of ERG in Aksu in 2018 covered 22% of the city budget on social welfare.

More than KZT 990 million were provided for infrastructure development in Aksu from 2013-2018.

In 2016, ERG allocated funds for the restoration of “Balapan” kindergarten in Ekibastuz. Engineering networks, site improvement and landscaping of the territory were completed. Moreover, in 2017 a major project was implemented to repair the Shakhtyor cultural park. The modernisation and improvement of the park included the commissioning of an open-air swimming pool and the construction of an amphitheatre, where most of the city's events take place.

We also provide support to educational and specialised children's institutions, help veterans and the most vulnerable, provide equipment for the material and technical provisions in colleges in the region. We pay particular attention to assisting socially vulnerable sectors of the population. In this regard, ERG bought and donated an elderly people's home to the Pavlodar region, also as a result of our support, a new building with an assembly hall and a swimming pool equipped with a special lift for people with special needs were built.

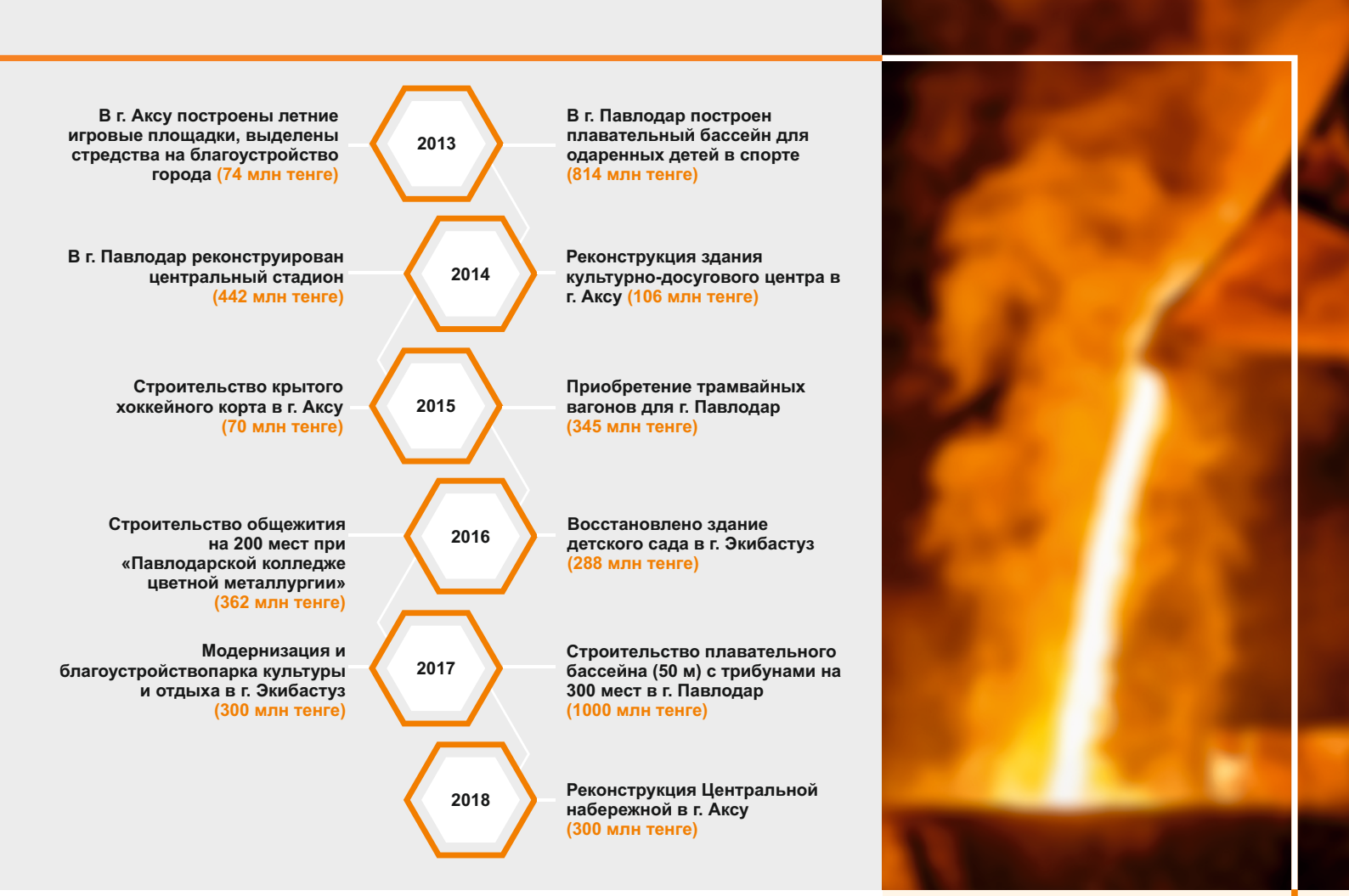


Figure 28 ERG's social projects in the Pavlodar region for 2013-2018

Aktobe region

Every year ERG finances infrastructure development, social and cultural projects for the Aktobe region. In 2013-2018, the social investments of ERG in the region amounted to about KZT 8 billion, including KZT 6.3 billion allocated as part of the memorandum on cooperation. Investments in the amount of KZT 7 billion were provided for the development of sport and infrastructure.

The major repairs of roads, the construction of engineering networks, installing lighting equipment, landscaping, the reconstruction of kindergartens, the development of sport and cultural clubs are being carried out as a result of our support. The construction of a modern and vital Palace of Youth Creativity in Aktobe city, designed to provide favourable conditions for the cultural life of the citizens and the opportunity for children to receive knowledge at the observatory and the planetarium is one of the major projects carried out in the region.

ERG investments in sport support (KZT 1.1 billion) in the Aktobe region equate to the regional budget for the development of physical education and sport in 2018.

We have invested over KZT 1 billion to develop the Group's native city Khromtau over the past 6 years. Funds were allocated for the major repair of the central stadium, the central park, supporting the Khromtau Mining College, Cultural Houses, sport and educational institutions as well as cultural facilities in the city.

More than KZT 490 million were allocated for assisting education and supporting young people in Khromtau city from 2013-2018.

Furthermore, ERG supports the social assimilation and living arrangements of children in Alghin orphanage of Aktobe region on the basis of innovative forms of social partnership. Graduates receive assistance in education and employment, and ERG funds academic scholarships and housing within the framework of the memorandum.

Figure 29 ERG's social projects in Aktobe region for 2013-2018

Kostanay region

From 2013-2018, ERG allocated about KZT 8 billion for the implementation of social projects in Kostanay region, including the conclusion of a memorandum on cooperation worth KZT 7.1 billion. The allocated funds were directed to socially significant projects in the region, including the repair of houses, the improvement of streets and the installation of children's playgrounds. We also support educational institutions in the region. As a result of ERG's funding in 2013, a kindergarten was built in Rudny using only environmentally friendly building materials. Our investments in single-industry towns include funds for the repair of schools and equipping them with laboratories, as well as the acquisition of educational equipment for the Rudny Industrial Institute and the Lisakovsk Technical College that train personnel for the mining and metallurgical industry enterprises.

5 schools were repaired in Arkalyk in 2018 at a cost of KZT 107 million.

In 2017, thanks to our support under the Programme for the Development of Regions up to 2020, a 90-apartment block was commissioned for our employees in Rudny city in 2017. The owners of the apartments were young specialists and took up jobs of acute shortage. As a result of the memorandum concluded between the regional Akimat and ERG, the accommodation issue of employees will be resolved in Lisakovsk. We pay great attention to infrastructure development in small settlements where our operations are located. Thus, we successfully implemented a project for centralised heat supply. The 2017-2018 heating season did not include any errors in the equipment operation or unplanned interruptions in Rudny and Kachar.

92% of expenditures for the social development and local infrastructure of Kostanay region in 2018 among the subsoil user companies was covered by ERG.

Moreover, we invest significant funds in supporting sporting facilities and sports promotion in the region. A large-scale reconstruction of the Youth Sports Club "Gornyak" stadium in Rudny was carried out in 2017. Basketball and volleyball courts were renovated and stands were repaired as part of the reconstruction.

More than KZT 590 million was allocated for the development of infrastructure in Rudny from 2013-2018.

In 2017, we provided assistance to attract young doctors to rural and regional hospitals in Kostanay region, and also financed the construction and maintenance of medical and health centres near the enterprises.

In 2018, a significant project in the development of the social infrastructure of the region became the construction of a national cultural centre in Kostanay.

Figure 30 ERG's social projects in Kostanay region for 2013-2018

Our contribution to the development of sport in single-industry towns of Kazakhstan: ERG Run Fest

In 2018, the inaugural “ERG Run Fest” festival was held with the support of ERG in three cities at once - Khromtau, Aksu and Rudny. We actively develop sports and promote a culture of health among our employees and local citizens in the remote regions of Kazakhstan.

More than three thousand people participated in the sporting event in 2018. There were several distances available to runners – 3 km, 5 km and 10 km, competitions in Nordic walking and races for children. “ERG Run Fest” was held in central Aksu. Thousands of citizens actively supported the runners from Aksu, Ekibastuz, Pavlodar and even Karaganda throughout the competition. More than 900 runners took part in Khromtau and 1,200 runners participated in Rudny.

The organisational process of ERG's Run Fest included electronic timing, medals, sports t-shirts, concerts – it is one of ERG's first steps toward the development of mass sports culture both in the single-industry towns of our presence and in the country as a whole.

Karaganda region

ERG's contribution to the development of social projects in the Karaganda region in 2013-2018 was about KZT 2.8 billion, including projects amounting to KZT 70 million as part of the memorandum on cooperation. The large part of these investments was geared towards social welfare (KZT 1.5 billion) and infrastructure development (KZT 912 million) in the region.

The major repair of the rehabilitation centre for disabled people in Karkaralinsk was one of the key infrastructure projects for 2013-2018 implemented by ERG in the Karaganda region. Furthermore, we have supported the repair of schools and kindergartens in the villages, the construction of sporting grounds and playgrounds in the regions. In 2013 “Karaganda Arena” ice palace, the tennis centre in Karaganda and the museum of the first president of the Republic of Kazakhstan in Temirtau city were constructed thanks to financing provided by ERG.

Projects such as the completion of the construction of a residential building in Karaganda city with improvements to the adjacent territory, the maintenance of the boiler house in Shubarkol as well as road repair, are all part of the memorandum.

More than KZT 100 million was invested in the development of Shubarkol in 2017-2018.

ERG supports the most vulnerable society in the region – elderly and disabled people, children with the limited opportunities and orphans. Special transportation vehicles for disabled people, electric wheelchairs and equipment for improving the accessibility of children's rooms were acquired for the work in this regard. Furthermore, the hospitals of Karazhal and Zhayrem were provided with transport and medical equipment.

Figure 31 ERG's social projects in Karaganda region for 2013-2018

5. STUDY METHODOLOGY

The evaluation of ERG's total contribution to social and economic development shown in this report is based on the input-output model developed by Nobel Laureate Wassily Leontief. The model is recognised and applied by governments and statistical agencies across the globe .

The input-output model heavily influenced the construction of the input-output table - now an integral tool used by the System of National Accounts (SNA). The framework utilises a combination of interconnected tables describing the 'sale and purchase' relationship between producers and consumers within an economy. The application of the input-output table serves as a coordinating basis for the classification, definition and applied methodologies when calculating the macroeconomic indicators used in the SNA.

In accordance with international statistics standards, the input-output table includes:

- Table of "Resources of goods and services";
- Table of “Use of goods and services” at customer-driven prices;
- Symmetric "Input - Output" table at basic prices;
- Table of transport margins;
- Table of trade margins;
- Table of net taxes on products;
- Table of use of imported goods and services;
- Table of the use of domestic goods and at basic prices.

In accordance with international statistics standards employed by the SNA, the terms "goods and services" is used interchangeably with the term "product" when creating the input–output table. A product in this case means a set of homogeneous groups of goods and services.

The table of “Resources of goods and services” relates to the formation of the resources of goods and services through domestic production and import, as well as elements of customer-driven prices (trade and transport margins, taxes on products net of product subsidies) for product groups.

The table of “Use of goods and services” at customer-driven prices characterises the use of goods and services that satisfy the intermediate and final expenditure. Additionally, this table reflects the structure of intermediate consumption and the elements of gross value added (GVA) by the selected groups of goods and services.

The table of transport margins shows the cost of transport services paid by the buyers. The table data on transport margins is broken down by the selected groups of goods and services generated according to the structure of the use of goods and services of the “Use of goods and services” table at customer-driven prices.

The table of trade margins shows the cost of trade services paid by buyers. The table of trade shows the cost of services including retail, wholesale trade and trade through agents, as well as the sale of cars and motorcycles. The table of net taxes on products is compiled using available data on taxes and subsidies on products using the annual report on the execution of the consolidated budget of the State Revenue Committee of the Ministry of Finance of the Republic of Kazakhstan.

29 *The input-output table is integrated into the Kazakhstan system of national accounts linking and detailing the goods and services accounts, income generation accounts, individual elements of income distribution and use accounts, and capital accounts showing the detailed balances of resources and goods and services, as well as the generation and use of operational income.*

30 *The inter-industry balance characterizes production processes in the economy according to their physical composition and costs by types of economic activities that align with the state classifier of types of economic activities in the Republic of Kazakhstan.*

The table for imported goods and services reflects the distribution of imported goods and services in areas where they are being consumed. To compile this table, data of foreign trade statistics on the import of goods contained in freight customs and statistical declarations was used.

When creating **the table of domestic goods and services at basic prices,** the corresponding elements of the table making use of imported goods and services are deducted from each element of the symmetric table "Input - Output" at basic prices.

In accordance with SNA methodology standards, **the symmetric input-output table at basic prices** obtained data on the elements of intermediate and final demand at basic prices data from the table under transport margins, trade margin tables, and net tax tables on products by item are deducted from each element of the table "Use of goods and services" in the purchasers' prices.

Methodological principles of the input-output table

The input-output table presented here consists of three main quadrants (Table 9).

Table 9. Template of the input-output table in consumer prices

	Intermediate consumption	**Final expenditure**				**Total consum-ption**
	Types of economic activity	Final consumption expenditures	Gross capital	Export	Import	
Goods (services) at consumer prices used in production	**I quadrant**	**II quadrant**				
Remuneration of employees **Taxes less subsidies for production and imports** **Gross profit, mixed income** **Gross Domestic Product (GDP)**	**III quadrant**					
Total output						

In the input-output table presented above, consumption cost of gross output by type of economic activity is shown under the context of associated costs of certain types of goods and services used in the production process (I quadrant) and GDP (III quadrant). In between the two quadrants is the use of each type of goods and services for intermediate consumption and final expenditure (II quadrant). For each type of economic activity, the total volume of output is equal to the volume of consumption. Both manufactured and consumed goods and services are associated to the cost of their consumption, including the trade and transport margin and taxes, while excluding subsidies on products. The table is separated by types of economic activity that produce a particular product or service. Values of cost indicators are presented in actual prices of the corresponding base year.

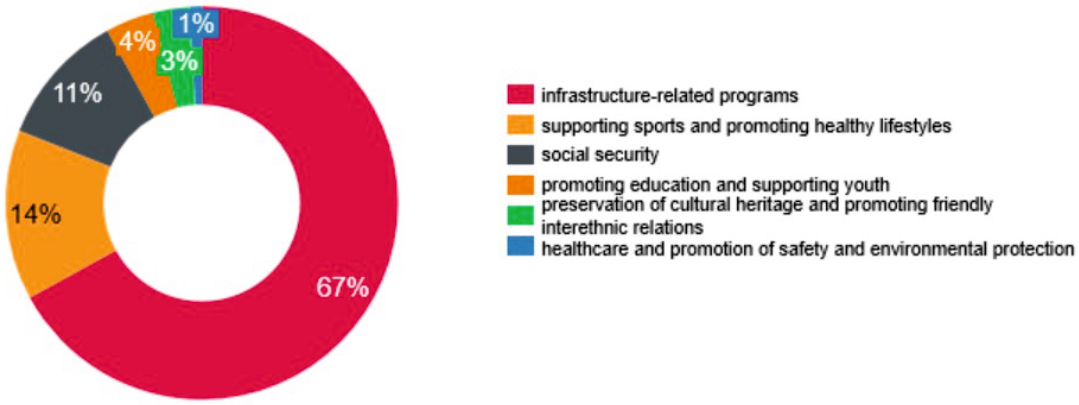


Figure 31 Components of full contribution (types of contribution)

There are three components (effects) of total social and economic industry contribution including direct, indirect and induced. The Group's financial and accounting data was used to calculate ERG's direct contribution. Indirect and induced impacts were modelled according to the adopted methodology which include assumptions and limitations.

The contribution was evaluated by five indicators:

- Economic contribution to goods and services production;
- Contribution to national GDP;
- Contribution to employment;
- Contribution to personal income;
- Tax contribution.

	Direct *ERG* contribution	Indirect ERG contribution suppliers and contractors	Induced ERG contribution Customers
Contribution to GDP	the Group revenue	Revenue generated through supplier and contractor activities	Revenue of companies that sell goods and services to the Group's employees, as well as employees of the Group's suppliers and contractors
Contribution to GDP	Added value generated by the Group	Added value generated through supplier and contractor activities	Added value of companies that sell goods and services to the Group's employees, as well as employees of the Group's suppliers and contractors
Contribution to employment	the Group jobs	Supplier and contractor jobs	Jobs in the companies that sell goods and services to the Group's employees, as well as employees of the Group's suppliers and contractors
Contribution to personal income	Income earned by the Group's employees	Income earned by the supplier and contractor employees	Income earned by the employees of the companies that sell goods and services to the Group's employees, as well as employees of the Group's suppliers and contractors
Tax contribution	Taxes and charges paid the Group	Taxes and charges paid by suppliers and contractors	Taxes and charges paid by the companies that sell goods and services to the Group's employees, as well as employees of the Group's suppliers and contractors

Figure 32 Summarised indicators and components of the Group's contribution

Contribution to production. *It is a commonly used tool to evaluate economic activities and includes value added and intermediary costs. The gross production should be equal to sales or revenue in most economic sectors. Intermediary costs imply that resources are purchased when other goods and services are produced.*

Contribution to GDP. *One of the methods to evaluate the size of a company, industry or economy is to calculate its value added. Since GVA is sector specific, GDP (gross domestic product) is made up of GVA generated in all economic sectors with taxes added and subsidies deducted.*
The value added is calculated as the difference between the company's gross revenue and its total expenses on goods and services. Changes in GDP and GVA during a specific timeframe is used to calculate the growth in a specific economic sector and/or in the overall economy.
Higher GVA may come from higher revenue (due to an increase in production tonnages or prices) or lower intermediate production costs.

Contribution to employment and personal income. *The average headcount was used to calculate the direct contribution to employment.*

Tax contribution. *Only taxes and mandatory payments (not accrued) made to the state budget and extra-budgetary funds were used to calculate the direct tax contribution.*

31 *The scope is defined as of the year end within the reporting period.*
32 *Cambridge University Press: Input–Output Analysis Foundations and Extensions, Second Edition, Ronald E. Miller and Peter D. Blair (2009)*

To ensure accurate and objective results, the calculations were based on official and public sources, including:To ensure accurate and objective results, the calculations were based on official and public sources, including:

- Statistics Committee of the Republic of Kazakhstan;
- State Revenue Committee of the Republic of Kazakhstan;
- Research, analytical and business publications available to the public.

A key objective when conducting the report was to avoid overestimation. We used the most conservative but economically justified approach where professional judgment was required. Assumptions and hypotheses used in the evaluation of national and regional contributions, as well as the methodology to calculate the tax burden ratio, are shown below.

National contribution

The 2013-2017 input-output spreadsheets developed by the Statistics Committee of the Ministry of National Economy of the Republic of Kazakhstan were used to evaluate ERG's national contribution. It should be noted that assumptions and limitations regarding statistical data presented below were used throughout the evaluation:

- Imported goods and services were excluded as the economic effect for the Kazakhstan economy is created only by goods and services produced and purchased in the country;
- As no 2018 input-output table was available at the time of preparation of this report, 2018 calculations were based on 2017 data.
- *Model assumptions and limitations in relation to ERG's data:*

  Imported goods and services were also excluded from the calculation;
- Intra-group transactions between ERG's operations were excluded.

All ERG purchases were classified by the type of economic activity in accordance with the National Classification of Economic Activity (CCNA). Please see the table below.

Table10 - ERG procurement categories

A	Agriculture, forestry and fishing	Crop and animal production, hunting and related activities
		Forestry and logging
		Fishing and aquaculture
B	Mining	Mining of coal and lignite
		Extraction of crude petroleum
		Extraction of natural gas
		Mining of metal ores
		Mining of non-ferrous metal ores
		Other mining
		Mining support service activities
C	Manufacturing	Manufacture of food products and beverages
		Manufacture of tobacco products
		Manufacture of textiles
		Manufacture of wearing apparel
		Manufacture of leather and related products Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials

		Manufacture of paper and paper products
		Printing and reproduction of recorded media
		Manufacture of coke
		Manufacture of refined petroleum products
		Manufacture of chemicals and chemical products
		Manufacture of basic pharmaceutical products
		Manufacture of rubber and plastic products
		Manufacture of other non-metallic mineral products
		Manufacture of basic iron and steel and of ferro-alloys
		Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
		Manufacture of other products of first processing of steel
		Manufacture of basic precious and other non-ferrous metals
		Casting of metals
		Manufacture of fabricated metal products, except machinery and equipment
		Manufacture of computer, electronic and optical products
		Manufacture of electronic components
		Manufacture of machinery and equipment not included in other categories
		Manufacture of motor vehicles, trailers and semi-trailers
		Manufacture of other transport equipment
		Manufacture of furniture
		Other manufacturing
		Repair and installation of machinery and equipmen
D	Energy sector	Electric power generation, transmission and distribution
		Manufacture of gas; distribution of gaseous fuels through mains
		Steam and air conditioning supply
E	Water supply	Water collection, treatment and supply, Sewerage
F	Construction	Construction
G	Wholesale and retail trade and repair of motor vehicles	Wholesale and retail trade and repair of motor vehicles and motorcycles
		Wholesale trade, except of motor vehicles and motorcycles
		Retail trade, except of motor vehicles and motorcycles
H	Transportation and storage	Land transport and transport via pipelines
		Water transport
		Warehousing and support activities for transportation
		Postal and courier activities
I	HoReCa	Accommodation
		Food and beverage service activities
J	Information and communication	Information

		Communication
K	Financial and insurance activities	Financial service activities, except insurance and pension funding
		Insurance, reinsurance and pension funding, except compulsory social security
		Activities auxiliary to financial services and insurance activities
L	Real estate activities	Real estate activities
M	Professional, scientific and technical activities	Professional, scientific and technical activities
N	Administrative and support service activities	Administrative and support service activities
O	Public administration and defence; compulsory social securityn and	Public administration and defence; compulsory social security
P	Education	Education
Q	Human health and social work activities	Human health activities
		Social work activities
R	Arts, entertainment and recreation	Arts, entertainment and recreation
S	Other service activities	Other service activities

The scope included the following ERG assets: [32]

- TNC Kazchrome JSC
- SSGPO JSC
- Aluminium of Kazakhstan JSC
- KAS JSC
- EEC JSC
- Shubarkol Komir JSC
- «ERG Service» JSC
- Transportation Group TransCom LLP
- «3-Energoortalyk» JSC
- Eurasian Group LLP (corporate centre)
- ERG Commercial Centre LLP
- Business and Technology Services LLP
- ERG Research and Engineering Centre LLP

Regional contribution

The total social and economic contribution made by the Group in the regions in which it operates was calculated in its four key regions: Pavlodar, Kostanay, Aktobe and Karaganda from 2013 to 2018.

The national input-output table was divided into a number of regional spreadsheets to evaluate the Group's regional contribution. The input-output spreadsheets were broken down into regions using factors that characterise transregional and intra-industry relations, as well as the flow of goods and services between the regions. [32]

Key assumptions and limitations in the evaluation of regional contribution:

- As with national contribution, all imports were excluded;
- Regional input-output spreadsheets for 2013-2017 were calculated. Similar to the 'national contribution' table, 2018's contribution was calculated based on data from 2017;
- The evaluation of ERG's direct regional contribution included only those operations that were in the reviewed region. Intragroup transactions between the companies were taken into account, except for transactions between operations in the same region.

Tax burden

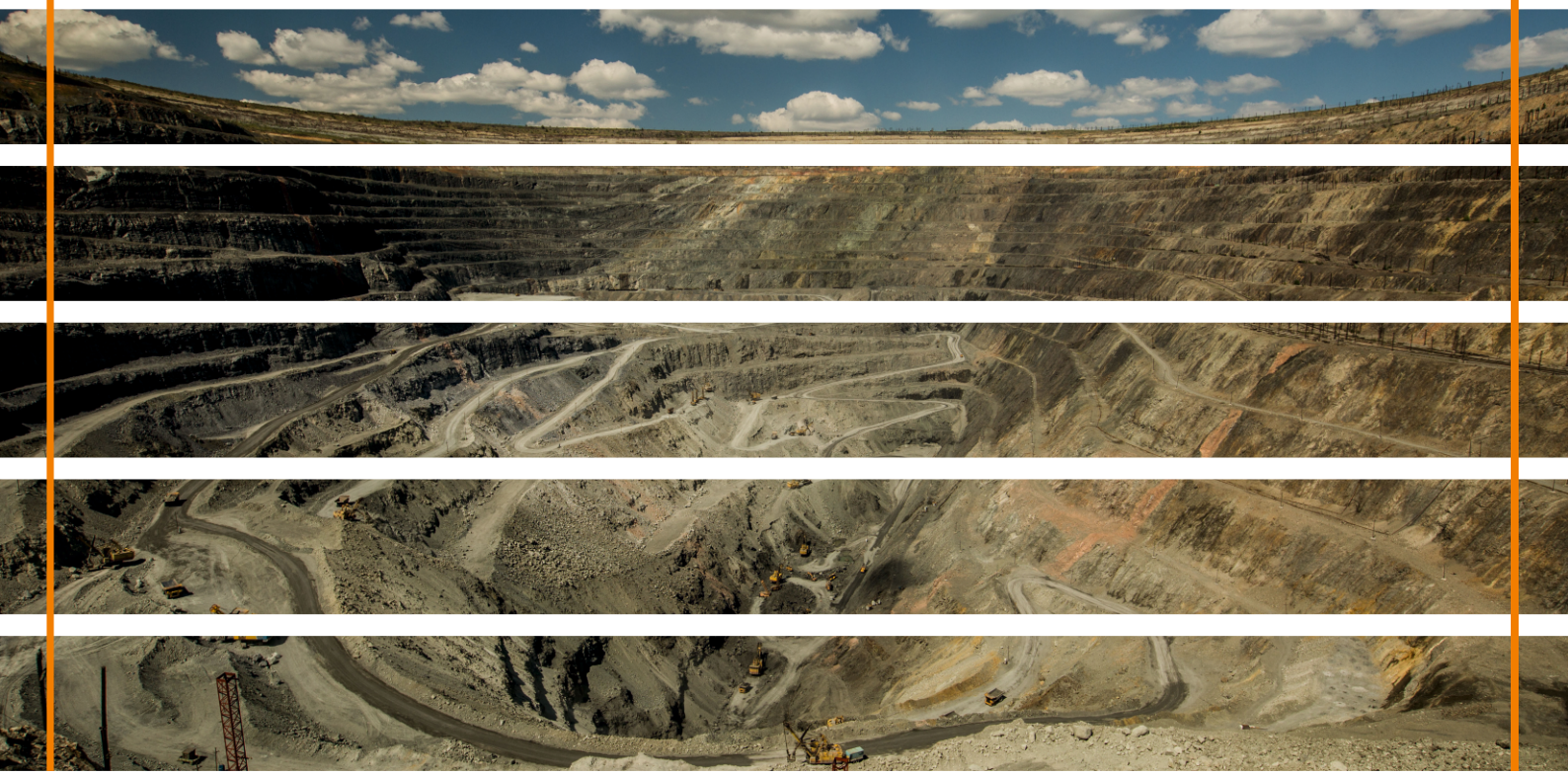
The tax burden is the ratio of a company's net income to its earnings before taxes. Here two adjusted approaches were used to calculate the tax burden ratio:

1) 1)The ratio of taxes and other mandatory payments paid during the tax period to gross value added.

Tax burden ratio=
Taxes and other mandatory payments / GVA x 100%

2) 1)The ratio of taxes and other mandatory payments paid during the tax period to total annual revenue.

Tax burden ratio =
Taxes and other mandatory payments / GVA x 100% [35]



[33] The amount of taxes and other mandatory payments made to the budget; taxes paid to other countries and corporate income tax withheld at the source and reflected in tax reports excluding customs duties; VAT and excise taxes paid on imported goods; VAT if the total tax amount is negative at the end of the calendar year (http://adilet.zan.kz/rus/docs/V1800016518);

[34] Total annual revenue of legal entity excluding adjustments provided in Article 241 and 287 of the Tax Code dd. December 25, 2017 and (or) revenue of legal entity that applies special tax regime based on simplified declaration or total revenue of individual entrepreneur over the reporting tax period (http://adilet.zan.kz/rus/docs/V1800016518);

[35] http://adilet.zan.kz/rus/docs/V1800016518

6. СПИСОК СОКРАЩЕНИЙ И АББРЕВИАТУР

АНЭК	Kazakhstan Association of National Freight Forwarders
АО	Joint Stock Company
ВВП	Gross domestic product
ВДС	Gross value added
ВРП	Gross regional product
ГИС	Geographic information system
ГОК	Mining and mineral processing site
ГП ФИИР	State Program of Industrial and Innovative Development
ГСМ	Petroleum, oil and lubricants
ЕЭК	Eurasian Energy Corporation
КНН	Tax burden ratio
КЭЗ	Kazakhstan Aluminium Smelter
ЛБМ	London Metal Exchange
МНЭ РК	Ministry of National Economy of the Republic of Kazakhstan
МФ РК	Ministry of Finance of the Republic of Kazakhstan
НАТР	National Technology Development Agency
НДС	Value added tax
НИИЦ	Research and Engineering Centre
СВП	Special interchangeable profiles
СГД	Total annual income
ССГПО	Sokolov-Sarbai Mining Production Association
ТНК	Transnational company
ТОО	Limited liability partnership
ФОТ	Kazakhstan's 10th Anniversary of Independence Mine
ШДНК	Eurasian Resources Group
ERG	Extractive Industries Transparency Initiative
EITI	Eurasian Natural Resources Corporation
ENRC	Enterprise resource planning
ERP	Financial Times Stock Exchange
FTSE	Geographic information system
GIS	International Council on Mining and Metals
ICMM	Initial public offering
IPO	Manufacturing execution systems
MES	Systems, Applications and Products
SAP	Science, Technology, Engineering and Mathematics
STEM	

APPENDIX

Table 11. ERG's national contribution between 2013 and 2018

			2013	2014	2015	2016	2017	2018
GDP	KZT million	Direct	285,245	302,705	250,161	502,066	652,740	613,433
		Indirect	179,181	181,741	164,981	330,366	492,197	389,540
		Induced	101,809	122,624	74,827	112,202	179,323	141,342
		Total	566,235	607,070	489,969	944,634	1,324,260	1,144,316
		Multipliers	1.99	2.01	1.96	1.88	2.03	1.87
Output	KZT million	Direct	623,901	641,783	575,965	889,212	1,135,981	1,280,980
		Indirect	358,085	349,169	330,134	517,102	755,733	709,605
		Induced	128,079	170,517	164,148	146,439	232,397	212,408
		Total	1,110,066	1,161,469	1,070,247	1,552,753	2,124,111	2,202,993
		Multipliers	1.78	1.81	1.86	1.75	1.87	1.72
Employment	people	Direct	62,020	60,600	60,452	59,802	60,554	60,722
		Indirect	37,440	44,769	42,588	43,509	63,289	50,585
		Induced	45,403	44,398	42,027	39,654	50,289	42,200
		Total	144,863	149,767	145,067	142,965	174,133	153,507
		Multipliers	2.34	2.47	2.40	2.39	2.88	2.53
Personal income	KZT million	Direct	79,966	87,986	93,657	107,270	117,836	128,194
		Indirect	54,576	70,743	71,138	86,207	129,534	113,479
		Induced	36,275	40,106	40,191	45,090	60,436	55,170
		Total	170,816	198,835	204,987	238,568	307,806	296,842
		Multipliers	2.14	2.26	2.19	2.22	2.61	2.32
Taxes	KZT million	Direct	131,433	98,013	94,925	176,179	222,480	184,600
		Indirect	28,031	30,785	27,365	48,375	71,646	58,034
		Induced	16,693	19,577	13,641	18,634	28,099	23,040
		Total	176,157	148,375	135,931	243,188	322,224	265,674
		Multipliers	1.34	1.51	1.43	1.38	1.45	1.44

Table 12. ERG's contribution in Pavlodar region between 2013 and 2018

			2013	2014	2015	2016	2017	2018
GRP	KZT million	Direct	46,251	119,852	173,715	277,584	379,771	368,210
		Indirect	22,524	50,323	72,484	117,024	162,396	131,969
		Induced	6,131	20,766	21,886	35,318	65,698	42,455
		Total	74,907	190,940	268,085	429,926	607,866	542,635
		Multipliers	1.62	1.59	1.54	1.55	1.60	1.47
Employment	people	Direct	23,635	22,605	22,308	22,410	22,626	22,518
		Indirect	12,024	11,361	12,003	13,072	13,026	10,171
		Induced	9,018	9,480	6,329	6,970	10,156	6,907
		Total	44,677	43,446	40,640	42,452	45,808	39,596
		Multipliers	1.89	1.92	1.82	1.89	2.02	1.76
Personal income	KZT million	Direct	28,546	29,565	30,703	34,263	37,925	41,295
		Indirect	14,522	14,859	15,564	19,173	17,608	21,268
		Induced	10,892	12,399	7,363	9,376	10,511	10,849
		Total	53,960	56,822	53,631	62,812	66,044	73,412
		Multipliers	1.89	1.92	1.75	1.83	1.74	1.78
Output	KZT million	Direct	287,825	331,178	328,483	501,211	614,842	655,951
		Indirect	115,840	124,012	121,953	185,102	253,058	228,066
		Induced	48,356	67,769	50,539	70,784	106,156	78,699
		Total	452,021	522,958	500,974	757,097	974,055	962,716
		Multipliers	1.57	1.58	1.53	1.51	1.58	1.47

Table13. ERG's contribution in Aktobe region between 2013 and 2018

			2013	2014	2015	2016	2017	2018
GRP	KZT million	Direct	28,916	23,202	7,176	56,097	128,209	98,986
		Indirect	16,160	13,414	4,078	31,656	77,197	55,017
		Induced	6,393	6,182	1,710	14,224	32,438	20,347
		Total	51,468	42,798	12,965	101,977	237,844	174,350
		Multipliers	1.78	1.84	1.81	1.82	1.86	1.76
Employment	people	Direct	11,028	11,391	11,528	11,763	12,078	12,152
		Indirect	6,985	7,475	7,109	6,988	8,553	6,666
		Induced	5,454	5,303	4,492	5,058	5,960	5,386
		Total	23,467	24,169	23,128	23,809	26,591	24,204
		Multipliers	2.13	2.12	2.01	2.02	2.20	1.99
Personal income	KZT million	Direct	14,764	16,353	17,705	19,922	21,680	24,282
		Indirect	9,879	10,426	10,507	12,472	12,618	11,298
		Induced	6,121	6,275	5,619	7,025	7,057	7,035
		Total	30,763	33,053	33,831	39,419	41,355	42,616
		Multipliers	2.08	2.02	1.91	1.98	1.91	1.76
Output	KZT million	Direct	87,059	89,745	96,931	178,759	270,752	313,429
		Indirect	45,878	45,610	49,394	91,162	147,854	156,092
		Induced	13,860	17,538	16,831	32,288	48,771	49,339
		Total	146,797	152,893	163,155	302,209	467,377	518,860
		Multipliers	1.69	1.70	1.68	1.69	1.73	1.66

Table14. ERG's contribution in Kostanay region between 2013 and 2018

			2013	2014	2015	2016	2017	2018
GRP	KZT million	Direct	112,097	63,247	9,503	105,957	108,472	100,396
		Indirect	45,112	27,070	3,396	37,834	46,723	45,386
		Induced	12,288	9,310	1,251	13,535	16,078	12,978
		Total	169,497	99,627	14,151	157,326	171,273	158,760
		Multipliers	1.51	1.58	1.49	1.48	1.58	1.58
Employment	people	Direct	23,255	22,331	22,051	21,131	21,127	20,729
		Indirect	11,183	12,283	11,227	11,451	16,233	18,880
		Induced	5,624	5,768	4,006	4,909	6,870	6,187
		Total	40,062	40,382	37,283	37,491	44,231	45,796
		Multipliers	1.72	1.81	1.69	1.77	2.09	2.21
Personal income	KZT million	Direct	30,030	32,678	31,756	34,606	37,788	40,503
		Indirect	15,003	16,985	15,462	17,193	29,034	36,890
		Induced	9,969	11,204	8,480	10,321	12,288	12,088
		Total	55,002	60,867	55,699	62,120	79,110	89,482
		Multipliers	1.83	1.86	1.75	1.80	2.09	2.21
Output	KZT million	Direct	226,470	192,547	117,295	176,435	207,702	245,410
		Indirect	83,003	74,228	38,983	56,463	79,415	100,864
		Induced	23,950	27,168	15,656	23,149	31,927	33,271
		Total	333,423	293,943	171,934	256,047	319,044	379,545
		Multipliers	1.47	1.53	1.47	1.45	1.54	1.55

Table 15. ERG's contribution in Karaganda region between 2013 and 2018

			2013	2014	2015	2016	2017	2018
GRP	KZT million	Direct	10,152	8,841	5,457	4,889	7,711	28,701
		Indirect	4,138	4,418	2,219	1,804	3,501	12,633
		Induced	1,252	2,463	1,039	968	1,227	7,131
		Total	15,542	15,721	8,716	7,662	12,440	48,466
		Multipliers	1.53	1.78	1.60	1.57	1.61	1.69
Employment	people	Direct	3,574	3,573	3,618	3,421	3,428	3,356
		Indirect	1,894	2,742	1,747	1,415	1,878	1,721
		Induced	1,338	1,502	1,057	1,073	898	1,270
		Total	6,806	7,817	6,422	5,909	6,205	6,348
		Multipliers	1.90	2.19	1.78	1.73	1.81	1.89
Personal income	KZT million	Direct	4,313	4,720	5,174	5,596	6,239	6,905
		Indirect	2,583	2,947	2,717	2,192	3,461	2,821
		Induced	890	1,246	893	1,073	1,708	1,596
		Total	7,786	8,914	8,785	8,862	11,407	11,322
		Multipliers	1.81	1.89	1.70	1.58	1.83	1.64
Output	KZTmillion	Direct	22,548	28,313	33,257	32,806	42,685	66,189
		Indirect	9,071	12,765	13,202	12,052	19,007	27,871
		Induced	3,593	9,767	7,832	8,021	8,362	19,970
		Total	35,211	50,845	54,291	52,879	70,054	114,030
		Multipliers	1.56	1.80	1.63	1.61	1.64	1.72