

YEARBOOK

2016



INTRODUCTORY WORD OF THE CHAIRMAN OF THE BOARD

AHTI ASMANN

CHAIRMAN OF THE BOARD OF VIRU KEEMIA GRUPP



The 100th anniversary year of the oil shale industry was dominated by a very turbulent economic environment. Volatile global oil market witnessed a sharp decrease in the beginning of the year, and in the second half of the year there was a hope for recovery and stabilization of markets. Complex circumstances have put to the test the strength of market players, their competitiveness, and willingness to respond to changes.

The year 2016 can essentially be divided into two parts for VKG. Due to uncertainty at the global oil market, we took some steps for the sake of preservation of our strong liquidity position and improving long-term capacity for resistance. In the result, in January, we decided to stop the work at factories using Kiviter- technology and reduce the volumes of excavation of oil shale.

It was a very tough decision for the company, but it turned out to be the right one and enabled us to emerge from the crisis much faster, as the market prices were recovering, and to recommission Kiviter-factories in August of the same year. We grabbed an opportunity to ensure our future by means of future transactions, and the second half of the year was marked by the stabilization of production volumes and bringing them quite close to the maximum. All in all, in 2016, we processed 3.4 million tons of oil shale, produced 451 300 tons of oil shale products, and 825 GWh of electricity, heat energy and steam. In order to improve the efficiency of energy delivery performance, we left unopened the Southern Power Station of VKG Energia, which had been closed in the beginning of the year, and decided to invest funds into the provision of reliability of the existing capacities. In spite of a very difficult year, we invested 18 million euros into the completion of the new sulphur-trapping device and its commissioning.

Quick recovery from the crisis and re-establishment of production volumes was made possible solely by the joint effort, dedication and understanding of VKG's working community. The survived period literally proved that the company's sustainability depends on every employee and their contribution as a team member into the pursuit of common goals. Hard times test us all, but also offer the best opportunities. Despite everything we continue to do our work and do it well. There is truth to the old saying - a friend in need is a friend indeed. Together we were able to overcome problems and it made us stronger. I am thankful for all of my colleagues at VKG, who did not fear the hardships and passed thorugh this bumpy road with dignity.

VKG is moving into the era when new values can only be created through close cooperation of different production units. By the end of 2016, we had achieved full load at 3 production facilities using Petroter-technology and 2 factories using Kiviter-technology, and we laid the groundwork for bringing the mine to the maximum capacity. Seamless operation of different production units operating with full load enables us to take the next steps in synchronizing our work and improving reliability. We have paid special attention to developing information technology solutions for production control and planning.

The oil shale sector increases the value of the natural resource that belongs to the state, which is why the cooperation between the government and different companies in the oil shale sector is of primary importance. In 2016, the Estonian state for the first time found itself in the situation where it was forced to seriously consider how to make local companies more competitive on world markets through the system of taxation. The Government of the Republic made a temporary, but a very forward-thinking decision to link the fees for using oil shale with the oil price at the global market and made a promise to develop a new long-term system of taxation from 1 January 2018.

The unaddressed problems in terms of the legislation that regulates the system of distribution of oil shale do not allow us to get the access to the oil shale resource, which is why two factories operating on Kiviter technology are still in standby mode. We are dealing here with the unused potential both for VKG, the state, and the local community. Unfortunately, in 2016, no positive changes took place in this respect, and the recommissioning of the factories is postponed for an indefinite period.

But today we can say that we have definitely left one difficult year behind. Strong financial status gives us confidence to invest into development activities, in order to both improve the efficiency of existing production and find opportunities for introducing new offers at the market.

han

CONTENTS

- 2 INTRODUCTORY WORD OF THE CHAIRMAN OF THE BOARD
- 3 CONTENTS
- 4 OIL SHALE IN THE WORLD
- 15 ECONOMIC INDICATORS
- 17 R&D ACTIVITIES
- 19 ENVIRONMENTAL ACTIVITY
- 20 SOCIAL RESPONSIBILITY
- 23 AREAS OF ACTIVITY
- 24 EXCAVATION OF OIL SHALE
- 27 SHALE OIL PRODUCTION
- 29 OIL SHALE CHEMISTRY
- 31 OIL SHALE ENERGY
- 34 PRODUCTION OF CONSTRUCTION MATERIALS
- 36 THE COMPANIES SUPPORTING THE MAIN PRODUCTION AREAS OF VKG
- 40 CONTACTS

OIL SHALE IN THE WORLD

THE LARGEST OIL SHALE PROCESSING COUNTRIES IN THE WORLD

The largest oil shale processing countries in the world are **Estonia**, **China** and **Brazil**



THE LARGEST OIL SHALE PROCESSING COMPANIES IN ESTONIA

Oil shale production in Estonia in 2016

852 000 TONS OF OIL

The share of VKG amounted to

451 300 TONS OF OIL

Or

53%

SUBSIDIARIES OF VKG

PRODUCTION

VKG Oil

Shale oil production

VKG Plokk

production of Roclite building blocks

VKG Kaevandused

extraction of oil shale

VKG Diisel

VKG diesel production project

VKG Energia

production of heat and power

SERVICES

VKG Soojus

heat network service

Viru RMT

assembly, repair and maintenance of industrial equipment

VKG Elektrivõrgud

electric power network service and sales

VKG Elektriehitus

construction and repair of electrical systems

VKG Transport

railway and vehicle transport services

RECOGNITION

- → Responsible Estonian Business 2010, 2011, 2012, 2013, 2014, 2015, 2016
- → Estonian Culture-Friendly Business 2012, 2013, 2014
- → In October 2012, Viru Keemia Grupp was listed among the three best companies in the category of Sustainable Growth of the Swedish Business Award
- → On 23 February 2012, Nikolai Petrovitš, a member of the VKG board and the head of the best enterprise in Estonia in 2009, VKG Oil, received an **Order of White Star, IV class** from the President of Estonia Toomas Hendrik Ilves, for supporting the development of the region. According to Nikolai Petrovitš, his order belongs to the entire VKG team.
- → Environmental Enterprise of the Year 2011 in environmental management category
- → Enterprise of the Year in Ida-Virumaa 2010
- → Best Estonian Enterprise 2009 -VKG Oil AS







GEOGRAPHICAL SALES DISTRIBUTION OF THE PRODUCTS AND SERVICES OF VKG

- → Estonia
- → Denmark
- → Holland
- → India

- → Latvia
- \rightarrow Poland
- \rightarrow Germanu
- → Russia

- → Lithuania
- → Belarus
- → Italy

→ Japan

- → Sweden
- → Ukraine
- → Belgium



MAIN PRODUCTS AND SERVICES OF VKG

- \rightarrow Ship fuels
- → Heating oil for local heating boiler plants
- → Electrode coke for electrode manufacturers
- → Oil shale fine chemical products for perfumery, cosmetics and textile industries
- \rightarrow Oil shale gas for production of heat and power
- $\,\, o\,$ Vehicle and railway transport services

- $\,\to\,$ Steam and air conditioning for large-scale industrial companies
- → Production, transfer and sale of heat and energy to households and companies
- → Repair, assembly and rental services of machinery and equipment
- → Consulting services in the field of oil shale processing technology

THE MAJOR ENVIRONMENTAL AND DEVELOPMENT PROJECTS IN 2016

NIKOLAI PETROVITŠMEMBER OF THE VKG OIL BOARD,
MEMBER OF THE VKG BOARD



OPENING OF THE THIRD SULPHUR-TRAPPING UNIT

Cleaning industrial emissions from sulphur is a top priority throughout the entire European Union. It has been possible to achieve threefold reduction in the amount of emissions of sulphur dioxide owing to sulphur-trapping units built on the territory of VKG Energia and operating smoothly. VKG Energia is the first company in Estonia where the equipment for cleaning flue gases from sulphur has been used. The first sulphur-trapping

unit has been operating in the company since 2008, and the second one was launched in 2015 - both of them are operating on the basis of Novel Integrated Desulphurisation (NID) technology. In autumn 2016, the third unit was completed, which is operating on the basis of the Flue-gas desulfurization (FGD) technology. Sulphur-trapping units has been an investment into a better air quality in the area.

MAIN INDICATORS IN 2016

Number of employees

1731 PEOPLE

Turnover

104 MILLION EURO

Profit

-15.2 MILLION EURO

Investments into environment and development

19.8
MILLION EURO

MAIN EVENTS IN THE REPORTING PERIOD



MARGUS KOTTISE

HEAD OF OJAMAA MINE, MEMBER OF THE VKG BOARD



JANUARY 2016

Viru Keemia Grupp is among top 47 businesses according to the **Corporate Sustainability and Responsibility Index**. The group was awarded bronze level acknowledgement for the sixth consecutive year.



JANUARY 2016

Due to record-breaking low oil prices at global oil markets, the Management Board of VKG made a decision to suspend the two oil shale factories working on the Kiviter technology.



JANUARY 2016

With the help of VKG, for the fifth time the team from Ida-Virumaa took part in one of the most reputable competitions in sciences in Estonia - in the **Competition of Five Schools**, which took place for the fifty-first time. We are making a contribution into educating future engineers.



FFBRUARY 2016

The metrology laboratory of Viru RMT, the subsidiary of the group, in the result of long-term work, got an accreditation certificate, which defines general competence requirements for tests, trials, calibrations, and sample collection. Now the metrology laboratory corresponds to the requirements of **EVS-EN ISO/IEC 17025:2006**.



MARCH 2016

Changes took place in the Management Board of VKG. Ahti Puur resigned from the position of the Deputy Chairperson of the Management Board, and Jaanus Purga resigned as a member of the Management Board. **Jaanis Sepp** became the new member of the Management Board of the group and the new Financial Director.



APRIL 2016

Tallinn Technical University acknowledged Viru Keemia Grupp for supporting the university by naming it the **Golden Sponsor**, owing to our long-term cooperation and the work we have done.



MAY 2016

On 19 May, the **Environment Day** took place at Viru Keemia Grupp, within the frames of which the topics related to assessing environmental effects as well as to the best possible use of oil shale were discussed.



MAY 2016

A traditional **community activities day** took place at VKG. The employees of the group stood shoulder to shoulder with each other in order to help the children from Kiikla orphanage to do spring garden works and clean the territory.



IUNE 2016

Together with some other companies in the sector, we started celebrating **100 years of industrial oil shale excavation in Estonia**. In order to celebrate the awe-inspiring anniversary, a wide variety of interesting events was held, such as issuing a special stamp and organising Doors Open Days. During the excursions, where everyone was invited to join, we provided an overview of competences acquired within a century of working with oil shale and showed how the excavation of oil shale takes place and electricity and oil are produced from it.



JULY 2016

Viru Keemia Grupp restarted two oil shale factories operating on the Kiviter technology (4th and 5th gas generator stations). In the result of a positive solution, **300 employees are going to return to work at VKG**.



JULY 2016

The second member of the Management Board of VKG Kaevandused became **Margus Loko**, who used to work as an Engineering and Development Director.



AUGUST 2016

By a good tradition, we welcomed the **children of our employees who went to the 1st form** by a great party and cool schoolbags filled with the most essential school things! This event took place for the sixteenth time.



AUGUST 2016

On 28 August, a traditional **Miners' Day** took place, which has definitely become one of the all-time favourites of the people living in the area.



SFPTFMBFR 2016

The member of the Management Board of VKG Transport **Ervin Küttis** left VKG.



SEPTEMBER 2016

We have joined the initiative "**Donate Time**". In this project, we see potential to do good and give back to society in a way that also motivates our employees.



OCTOBER 2016

For the first time in its history VKG hosted a very **large representative diplomatic delegation**, which consisted of 23 employees of diplomatic foreign missions accredited to Estonia. Diplomats were familiarized with the Estonian oil shale sector and were shown the Petroter III oil plant and the latest mine in Europe - Ojamaa mine.



OCTOBER 2016

Anton Nõomaa became the member of the Management Board of VKG Transport, who used to work as a head of the procurement department at VKG.



NOVEMBER 2016

The Petroter III oil shale plant, which had been commissioned in September of the previous year, and the production volume of which is 140 tons of oil shale per month, with the total value of 84 mln EUR, in the middle of the third quarter reached the volume of the first million of tons of processed oil shale, and its annual volume of produce made up 136,000 of shale oil. The company managed to achieve this result due to unprecedentedly fast attainment of scheduled production indicators at the new plant and high reliability. The indicator of the output of the finished product of processed oil shale exceeded 12%, and the amount of scheduled downtime decreased by three times per year.



NOVEMBER 2016

Jaak Saar, the member of the Management Board of VKG Plokk left VKG. The new member of the Management Board became **Liana Pavlova**, who used to work as a Financial Director.



NOVEMBER 2016

We took active part in the **Job Shadow Day**, offering 14 vacancies in different fields and companies. The range of vacancies was very wide - from a laboratory assistant to a top manager.

PRIORITIES FOR 2016



JAANIS SEPPDIRECTOR OF FINANCE, MEMBER OF THE VKG BOARD

- → Provision of availability of raw material.
- → Separation of the maximum amount of energy from oil shale.
- $\,\, o$ Adding maximum value to end products.

- → Generation of organizational culture aimed at improving efficiency.
- \rightarrow Competitive cost price of shale oil

ESTIMATED NUMBERS FOR 2017

Number of employees

1780

PEOPLE

Oil shale extraction volume

3.9

MILLION TONS

Oil shale processing volume

4.5

MILLION TONS

VKG's share in the state tax revenues

34.3

MILLION EURO

ECONOMIC INDICATORS

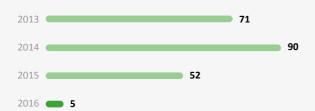
CONSOLIDATED INCOME STATEMENT

IN THOUSANDS OF EURO

	2013	2014	2015	2016
Return on Sales	220 406	195 216	166 788	104 270
Cost of Goods Sold	174 599	-164 175	-189 159	-106 147
GROSS PROFIT	45 807	31 041	-22 371	-1 877
Marketing Costs	5 802	-3 769	-3 360	-3 213
Administrative Overhead	12 224	-12 985	-9 109	-9 471
Other Revenue	6 915	11 084	9 973	10 034
Other Operating Costs	4 193	-2 492	-1 745	-2 099
OPERATING PROFIT	30 503	22 880	-26 612	-6 626
Financial Income and Costs	-3 974	-3 101	-5 269	-8 588
PROFIT BEFORE INCOME TAX	26 528	19 779	-31 881	-15 214
Extraordinary Expenses				
Income Tax	315		300	
NET PROFIT FOR THE FISCAL YEAR	26 213	19 779	-32 181	-15 214

IINVESTMENTS INTO DEVELOPMENT ACTIVITIES

IN MILLIONS OF EURO



INVESTMENTS INTO ENVIRONMENTAL PROTECTION AND OCCUPATIONAL SAFETY

IN MILLIONS OF EURO



CONSOLIDATED BALANCE SHEET

IN THOUSANDS OF EURO

	2013	2014	2015	2016
ASSETS				
Current Assets	76 556	115 403	71 086	64 649
Fixed Assets	438 161	501 848	485 513	519 104
TOTAL ASSETS	514 717	617 251	556 599	583 753
LIABILITIES AND EQUITY CAPITAL				
Short-Term Liabilities	67 114	91 368	75 383	52 343
Long-Term Liabilities	123 388	183 261	182 724	234 758
Total Liabilities	190 503	274 629	258 107	287 101
Equity Capital	324 214	342 622	298 493	296 652
TOTAL LIABILITIES AND EQUITY CAPITAL	514 717	617 251	556 599	583 753

BALANCE SHEET TOTAL

IN MILLIONS OF EURO





DEVELOPMENT ACTIVITY

IN 2016, THE ACTIVITIES AIMED AT IMPROVING THE EFFICIENCY WITHIN THE CHAIN OF INCREASING THE VALUE OF OIL SHALE CONTINUED

IMPROVING THE FEFICIENCY

Since 2013, we have been using the diagram of the flows of energy as a means of communication within the system of management of the energy efficiency of increasing the value of oil shale. Until then, major changes originated from the implementation of the Petroter technology with high energy efficiency and the termination of production of oil shale for storing at a warehouse. Since in the mine, it is not possible to excavate only the dimension stones used at Kiviter oil plants, in 2014 we were forced to store 30% of excavated oil shale energy at the warehouse in the form of fine-grained oil shale. Since 2015, we have not been producing oil shale for storing at the warehouse, and in 2016, the volume of oil shale that had earlier been produced for storing at the warehouse made 31% of all oil shale energy

produced at oil plants. One of the most important opportunities as well as one of the steps aimed at improving the efficiency within the chain of increasing the value of oil shale, taking us into 2017, was increasing the processing capacity of net oil yield and oil shale at Petroter plants. In 2016, preliminary studies for increasing the processing capacity of net oil yield and oil shale at Petroter plants were held and the most important technological solutions were developed.

In terms of the project of regeneration of the gasoline fraction of char gas, modelling was carried out, and a further detailed cost-benefit analysis was prepared. A decision was made to deal with the implementation of the project later, after 2017.

PRODUCTION MODEL

The year 2016 was a year of tough calls and tricky decisions for VKG. Due to exceptionally low prices for oil, it deemed urgent to decrease the load at Ojamaa mine and stop Kiviter oil plants. While making this decision, the key factors were a large reserve of fine-grained oil shale that had accumulated at the warehouse in preceding years and the need to improve the liquidity of the entire Group. Besides, while making this decision, we have been guided by thorough calculations and production models. We are sure that modelling will enable us to make decisions in the nearest future that will help to improve the financial and economic efficiency of the chain of increasing the value of oil shale.

In 2016, we continued to develop the mathematical model of oil shale production and the algorithms of optimizing performance. We are planning to validate and launch the advanced optimization production model in 2017.

MARPOL STRATEGY

About 85% of oil shale produce is sold to the largest global suppliers at the fuel market, who use oil shale mainly in the world ocean as one of the components while producing marine fuels outside of the areas using the control over the amount of emissions. At the 70th session of the Marine Environment Protection Committee, which took place in the end of October 2016, it was decided to set the date of implementation of the marginal rate of sulphur content in marine fuels at the rate of 0.5% in the world ocean for 1 January 2020. According to the forecasts of the most renowned agencies, revolutionary changes are going to accompany the implementation of this marginal rate at the market of marine fuels. We have also been considering the implementation of the new 0.5% rate of sulphur content as of 1 January 2020 as the basic scenario for VKG, which is why in 2016, the main focus was and in 2017, the main focus will still be on preparing the impact analysis and the adaptation strategy for VKG.

MAJOR RESEARCH AND DEVELOPMENT AREAS IN 2017

- → The MARPOL analysis of the impact of changes in quality requirements for marine fuels, adaptation strategy
- $\, o\,$ Increasing the oil shale processing capacity of Petroter equipment and net oil yield
- → Developing the mathematical model and the algorithms of the optimization of production



ENVIRONMENTAL ACTIVITY

MEELIS ELDERMANN

TECHNICAL DIRECTOR,
VICE CHAIRMAN OF THE VKG BOARD

IN ITS ACTIVITIES, VIRU KEEMIA GRUPP IS ALWAYS STRIVING FOR IMPROVING EFFICIENCY.

The aim is to increase the value of oil shale to the maximum, i.e. using up the potential of the resource completely. From the perspective of the environmental protection, it means minor environmental effect per one unit of processed oil shale and higher social and economic benefit. In spite of the complex economic situation in the power-generating sector in 2016, VKG has implemented a number of important projects which decrease the environmental load and manufacturing footprints.

In October 2016, the third sulphur-trapping unit was completed at the Northern Power Plant of VKG Energia. Three sulphur-trapping units are connected into a single system, into which the flue gas is headed from all of the boilers at the station. This unique solution enables the sulphur-trapping system to regulate the operation in a flexible way, and the cleaning of flue gases is still provided even if one of the trapping units is out of order. This investment that was worth about 16 million euros has allowed to accomplish the action plan aimed at the reduction of the emissions of SO2 which consisted of several stages. In the result, we can see that the quality of air in Kohtla-Järve considerably improved in 2016, and the total volume of emissions of SO2 decreased by about 70% as compared to the previous year.

The new depositing method was put into operation at the semi-coke land-fill belonging to VKG. The closed tubular conveyor is used for transporting ash. In this way, it is possible to decrease the noise and dust generated by ordinary vehicles. Oil shale ash is deposited wet, in the result of which a cemented monolithic overlaying deposit is formed at the depositing area, which prevents pollution from spreading outside of the borders of the land-fill. Process water that originates from the production of shale oil is used in the process. The water binds with the overlaying deposit at the landfill and forms a monolith of water and semi-coke and an aquitard. In addition to that, in the future this method will prevent the formation of heating sites, since the material is dampened and compressed while being deposited.

At VKG Oil, the process of production of shale oil was supplemented with the unit for mixing finely dispersed ash-bearing fuel (residues of cleaning of oil shale) and circulation oil. It allows to send the residues from the cleaning of oil shale back into the process, and the need for its transportation and intermediate depositing disappears. The processing in the closed system thus decreases the amount of air emissions that accompany transportation. Similarly to the previous years, VKG is still carrying out continuous environmental monitoring. In 2016, the system of continuous monitoring over flue gases at the Northern Power Plant of VKG Energia was replaced. The new system corresponds to all requirements with respect to the best possible technologies and allows to monitor and analyse the production mode quickly and efficiently.

In 2017, at the commission of the Environmental Inspectorate, the results of the research carried out by the Estonian Environmental Research Centre (Eesti Keskkonnauuringute Keskus) titled "Assessment of the quality, odour annoyance, and amounts of pollutants in the ambient air in the district of Järve in the town of Kohtla-Järve" were published, on the basis of which a conclusion was made, according to which within the past ten years the levels of the main pollutant causing the unpleasant odour in the area (H2S) have considerably decreased in the vicinity of the production facility due to numerous technological developments. This is an indicator showing us that the action plan implemented by VKG within the past five years, the cost of which was about 4 million euros and which was aimed at reducing the odour, has been efficient.

In the following years, the development and environmental activities of VKG will still be focused on efficiency, waste recycling, and reduction of air emissions. The new action plan aimed at reducing the odour and improving air quality, within the frames of which we will also implement the project of damping of heating sites at the semi-coke landfill, the methods of depositing waste and using it, the activities aimed at reducing the amount of greenhouse gases and improving energy efficiency are our main priorities.

SOCIAL RESPONSIBILITY

RESPONSIBILITY IS AN INTEGRAL PART OF VIRU KEEMIA GRUPP'S BUSINESS STRATEGY, SINCE IT IS IMPOSSIBLE TO SEPARATE RESPONSIBLE ACTIONS FROM THE GROUP'S MAIN ACTIVITY.

VKG HAS A GREAT IMPACT ON THE REGION'S DEVELOPMENT AND PROSPERITY

The group's social responsibility and sustainable development policy started in 2009. We are proud to be one of the first promoters of the social responsibility concept in Estonia, especially in Virumaa.

In December 2012 we founded the Estonian Responsible Business Union along with nineteen other Estonian businesses. The union's goal is to introduce and promote the concept in Estonian business sector, including on the national level.













THE GENERAL PRIORITIES OF THE GROUP WITHIN THE FRAMEWORK OF RESPONSIBLE ENTREPRENEURSHIP

OUR SUCCESS FACTORS ARE CONTRIBUTIONS TO SOLVING COMMUNITY PROBLEMS AND CONSCIOUSLY MINIMIZING THE ENVIRONMENTAL FOOTPRINT OF OUR ACTIVITIES.

ENVIRONMENTAL PROTECTION

VKG's priority is to reduce and minimize the environmental impact of industry. The aim of our operations is to show that corporations can be responsible, sustainable and use resources at their maximum potential. The group's largest investments have been directed to environmental functions, making VKG one of the largest environmental investors in the country. VKG has invested around 100 million euros in environmental projects over the years.

OUR EMPLOYEES

People are the most valuable asset of any business. As the region's largest employer our purpose is to offer modern working conditions, pleasant working environment and development opportunities for our employees. We are grateful to our employees who are loyal and value the group as their employer. Employees of the group are engaged in charity and voluntary work. There is a trade union at the group and collective agreements have been signed.

OUR PLACE OF OPERATION – VIRUMAA

VKG's priority is to support Virumaa and the activities of local organizations, people and societies that benefit the community. The group pays attention to the region's development, keeping close touch with local authorities and citizens. VKG supports sports, culture and education initiatives.

VKG HAS ALSO STARTED SEVERAL OF OUR OWN INITIATIVES TO PROMOTE LOCAL LIFE



ENGAGING STUDENTS INTO THE HISTORICAL BATTLE OF FIVE SCHOOLS

Throughout the whole of Estonia, including the group itself, there is a shortage of young educated specialists. We are bound to take care of the fact that in Estonia, engineering and technical labour force would grow and develop, that talented people could acquire good education, which in its turn would enable elderly workers to retire and enjoy well-deserved rest. We are certain that our task is to make our own contribution into educating such young people and create an opportunity for them to show what they are capable of. If the companies in the areas do not participate in this process, the local life would become very unattractive for local youth. Our goal is, first of all, to inspire young people to stay in Estonia in order to make a contribution into the development of the state.



WE SUPPORT AND SIDE WITH THE INITIATIVE "LET'S DONATE WORKING HOURS"

In the project "Let's donate time", we see the potential to do something good, give something back to the society, and do it in a way that would at the same time enhance the motivation of our employees.

COMMUNICATION BETWEEN THE LARGE INDUSTRY AND THE LOCAL PEOPLE

IDA-VIRU COUNTY'S

UNIQUENESS IS THE

OIL SHALE INDUSTRY'S

INTEGRATION INTO SOCIOECONOMIC DEVELOPMENT

AND INTERACTION BETWEEN

THE INDUSTRY AND REGION.



Oil shale industry is one of the region's biggest employers - the industry directly employs about 7,500 people, but many times more people are indirectly connected to it. Families and generations work in the companies. However, the industry also offers salary above the region's average. The existence and development of the industry thus means confidence in the future and stable income, which provides daily subsistence for the people living here.

VKG is an important employer and partner in the region VKG's production territory is located in the vicinity of Kohtla-Järve city. We pay great attention to communication with the locals and keeping them informed of the happenings at the group. To ensure communication, meetings with representatives of the

community are held on a regular basis. The group's future development plans and environmental matters are discussed at the meetings. On a regular basis the group holds the so-called Open Doors Day, during which everyone can visit the production territory of VKG and to see with their own eyes how the modern industrial processes are running. We also offer an opportunity to arrange visits and excursions to our facilities to the students from comprehensive schools.

The employees of the group take active part in charity and volunteer work. The group holds topic-based donation campaigns, tree-planting events and workshops, and supports orphanages in the district.

AREAS OF ACTIVITY

OUR VALUES

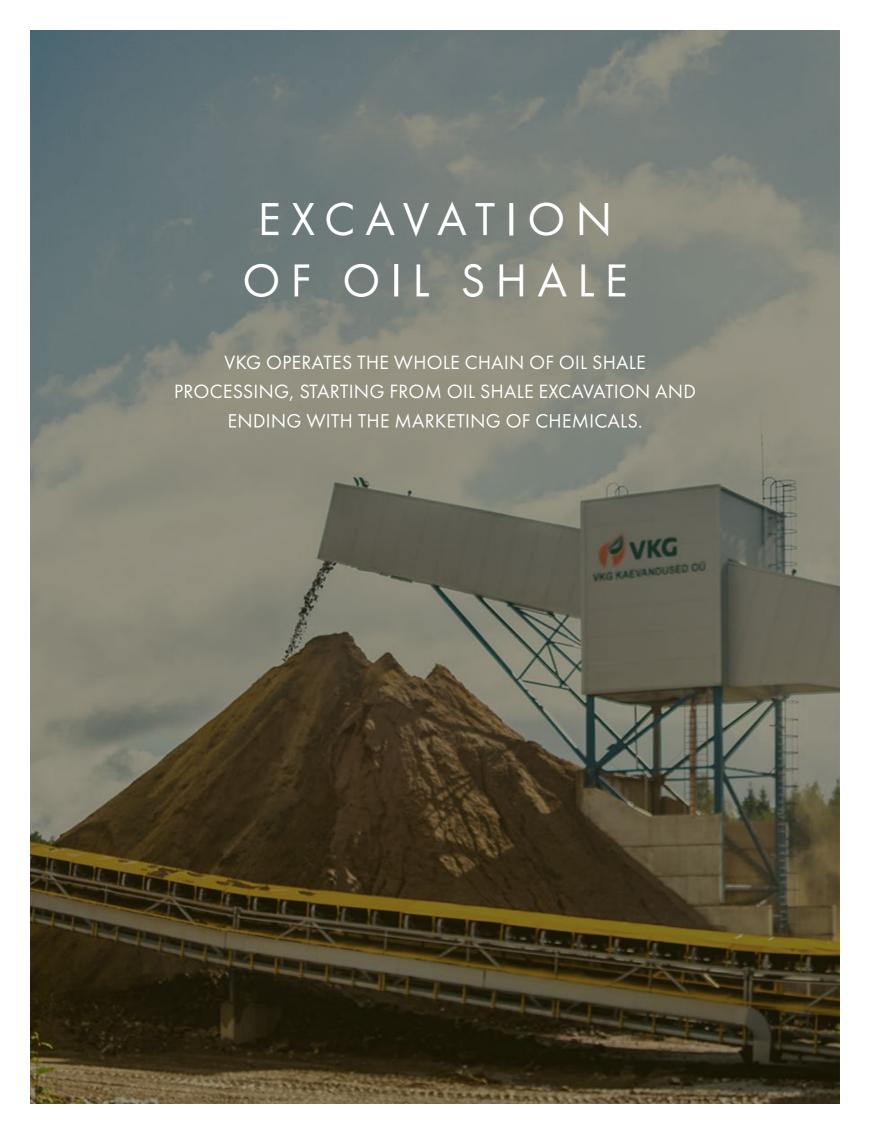
OPEN - DEVOTED - ASPIRED

OUR MISSION

TO VALUE OIL SHALE - THE MAIN ESTONIAN NATURAL RESOURCE

OUR VISION

TO BE THE FLAGSHIP OF THE ESTONIAN OIL SHALE INDUSTRY AND THE LEADER IN DISCOVERING THE OIL SHALE POTENTIAL.



VKG obtained the mining permits for the Ojamaa mine in 2004. Preparatory works for the opening of the mine began in 2007 and in July 2009 work on the facility was launched. The grand opening of the mine was on 31 January 2013, and it reached its full capacity in the second half of the year. The volume of investments into the Ojamaa mine has amounted to 120 million euros. The oil shale mine at Ojamaa is Estonia's first new mine built since the re-establishment of independence.

As the most recently opened in Estonia and one of the most up-to-date oil shale solutions globally, the underground excavation is applied for producing oil shale, which is used when the layer of oil shale is deeper than 30 metres under ground. Only the most up-to-date technologies and the best possible equipment are used in the technological process.

During the cross-put works, from August 2010, the Ojamaa mine started to supply fine oil shale for satisfying the needs of the plant Petroter I. In 2011, the fine oil shale supplied by Ojamaa became the only raw material used at the new plant. The Ojamaa mine can supply raw material to three plants simultaneously using the Petroter technology.

Ojamaa will cover the demand of VKG for the raw material needs for approximately the next 15 years.

DISTRIBUTION OF THE RESOURCE

In the last year, especially critical problem was the issue of distribution of the resource between market players. Our future as well as our present depend on the availability of the resource. Unfortunately, at present the resource is distributed between market players without due consideration of their current actual needs, but based on historic factors and the hypothetic growth in consumption by the national company in the oil shale sector. VKG believes that the current system of resource distribution is not functioning properly. In Estonia, every year five or more millions of tons of oil shale are non value added, in the result of which the state is losing about 100 mln EUR annually through direct and indirect taxes. The total accumulated need for raw material at VKG today is 5 millions tons of oil shale. The maximum excavation volume permitted to VKG together with subsequent excavation opportunity makes up 4.4 mln tons of oil shale. In order to implement the maximum production capacities, we are short of about 0.8 mln of tons of oil shale per year.

VKG has been speaking and drawing the attention of the government a lot to the fact that the current resource policy lacks long-term strategic vision, and it does not create equal competitive environment or provide a chance to private companies to work to the fullest extent.

For the group, it is important, from strategic perspective, to ensure the availability of oil shale resource for more distant future, too. To achieve that goal, it has been planned to build a common mine on extracting permit areas of Sonda oil shale mines, which have a common opening spot, technology, and transportation system. The Ministry of the Environment has approved of the programme of assessment of environmental effect. The group is planning to develop this project together with Kiviõli Keemiatööstus.

GOOD THINGS COME INTO BEING THROUGH COOPERATION



12.5 KM – LENGTH OF THE GROUND CONVEYOR THAT TRANSPORTS RAW MATERIAL FROM OJAMAA MINE TO PETROTER AND KIVITER SHALE OIL PLANTS.

After the mine was built, the issue of delivery of oil shale was out on the agenda. In the beginning, the raw material was delivered in large trucks, which in no way were environmentally-friendly and caused inconveniences to the people living next to the road. This is why we decided to move on to a smarter method of delivery - in the end of 2010, we started to build an land-based conveyor 12.5 km long. In order for the raw material transported by means of the conveyor would reach from Ojamaa mine to the Petroter and Kiviter oil shale plants, it must be laid through the territory of the rural municipality. Wider audience, environmentalists, and hunters have been involved into the discussion since the project planning stage. The representatives of VKG have been meeting with different interest groups in order to familiarize them with the project under construction and get feedback. In the result of close cooperation between different working groups and interest groups, the best possible solution was found, which turned out to be suitable both for the community and for the company.

The people, whose houses are located near the area where the conveyor will be running, were interested in the noise that can be generated by it. The conveyor has been designed in a way that when it is operating, it will not generate any noise due to its closed design and virtually noiseless rollers, on which the conveyor belt will be running. Besides, compared to motor transport, the conveyor system is not going to generate much dust or exhaust fumes, and the load on local roads will be decreased significantly.

Since the largest part of the conveyor will be located in the woods, we had to find a solution as to how not to disturb the ordinary natural habitat of forest animals. It has been ensured in cooperation with the State Forest Management Centre. Along the path of the conveyor, there will be special tunnels for small animals as well as bridges for larger ones, so that all forest inhabitants would be able to cross the conveyor. All of those developments have been the fruits of long-term cooperation and discussions. At present, we can say that the selection of a more environmentally-friendly way to supply raw material has been beneficial for everyone - local community, environment, and the company. The project of the land-based conveyor can be regarded as successful, and it is a good example of cooperation between a large industry and the community.

We believe that while developing every single new project, people should think both about the environment and about other people who can be affected by the implementation of the relevant project. For sure, the implementation of every project requires a lot of groundwork and speculation. However, our experience has shown that the honest approach, willingness for negotiations, and being ready to approach challenges in an unconventional manner can ensure satisfactory results to all parties



ESTONIA IS ONE OF THE LARGEST SHALE OIL MANUFACTURERS IN THE WORLD. VKG IS THE LARGEST IN ESTONIA AND THE SECOND LARGEST OIL MANUFACTURER IN THE WORLD.



IN 2016, THE COMPANY PROCESSED 3.4 MILLION OF TONS OF OIL SHALE, OUT OF WHICH 451,300 TONS OF OIL PRODUCTS WERE PRODUCED. MORE THAN 90% OF PRODUCE WAS EXPORTED.

The advantages of shale oil as compared to oil mazut is its small viscosity, low chill point, and small sulphur content. VKG Oil is responsible for processing oil shale in the group, which consists of the three highly efficient plants operating on the Petroter technology and four Kiviter factories, only two of which are operating at the moment. Unfortunately, due to the shortage of oil shale resource, the group is not capable of implementing its full production capacity at the moment. Kiviter factories are operating on the basis of oil shale rock fragments, and Petroter plants are using fine oil shale.

The sign of efficiency and sustainability of every production unit is the energy efficiency of the production process, which shows the amount of the energy entered together with the raw material that has been transformed into useful products. For example, the energy efficiency of Petroter III is 82%, which is a very good result. Such a high indicator has

been achieved due to the fact that, in addition to shale oil, steam, hot water, and char gas with high calorific value are produced, out of which VKG Energia is, in its turn, producing electrical energy, steam and water for district heating.

The last year was a very difficult year for oil manufacturers. The year started with a significant recession, Brent crude oil achieved the lowest point of 27 USD/bbl in February, which was followed by a rise, but then the third quarter also started with a drop. Still, the year ended in a positive way, and in December Brent finally achieved the level of 56 USD/bbl. Summing up the results of the year, we can be astonished at the average Brent price of 44 USD/bbl, which was 10 USD lower than the average in 2015. The last time oil price was on a level as low as that in 2004.

THERE ARE REASONS TO BE PROUD



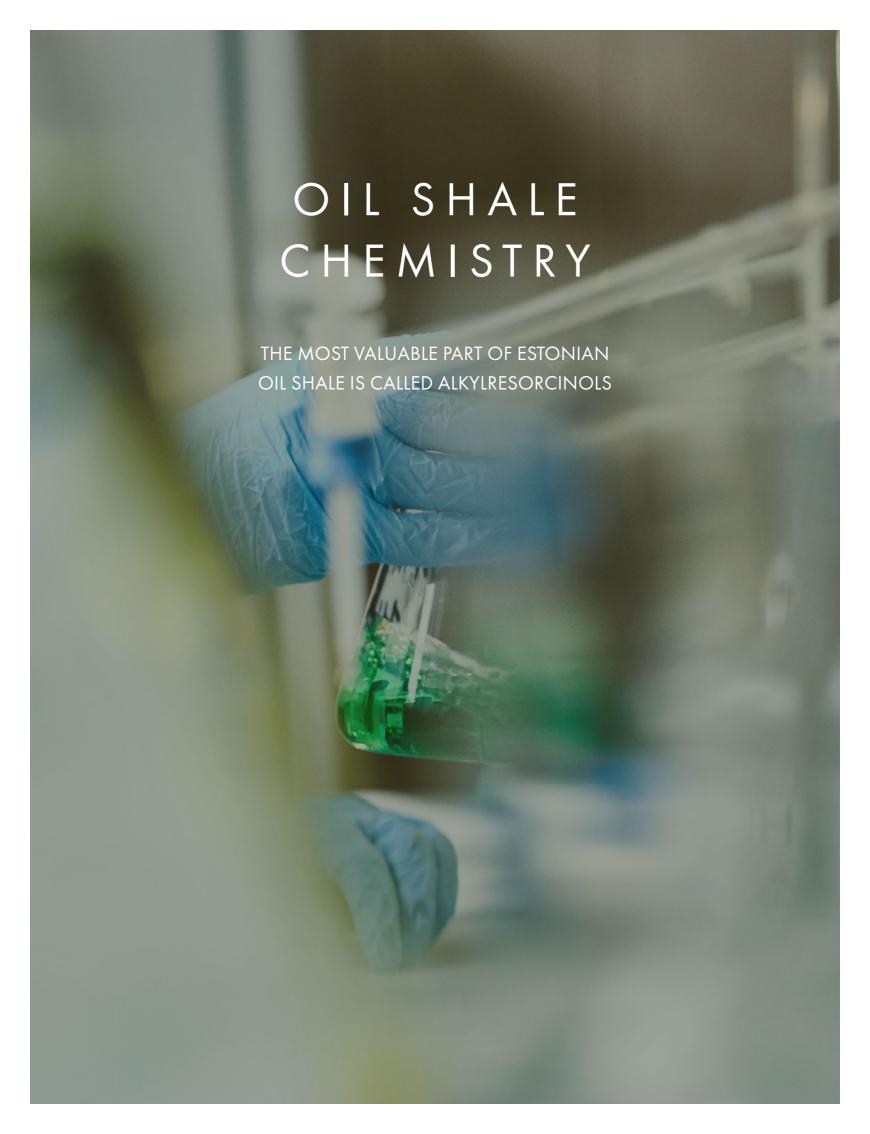
ONE OF THE LARGEST PRIVATE
SECTOR INVESTMENTS: IN EIGHT
YEARS, THE GROUP MANAGED TO
BUILD THREE HIGHLY EFFECTIVE
PETROTER FACTORIES; 220
MILLION EUROS WERE INVESTED
IN THIS PROJECT.

The Petroter technology has been proving its efficiency since 2010, showing high environmental and investment efficiency. Today the energy efficiency of all three Petroter plants exceeds 82%, and their workload also exceeds the designed nominal capacity. One oil plant that operates on the basis of the Petroter technology processes about 1 mln tons of oil shale per year, out of which secondary products are also obtained, in addition to shale oil products, for example, electricity and thermal energy for supplying the neighbouring towns with heating.

Within eight years, the group has managed to build three highly efficient Petroter plants, and the total project investment has made 220 mln EUR. Without any doubt, we are dealing here with one of the largest investments in the private sector.

Petroter plants operate at full capacity 300-320 days per year on the average.

By means of cost-effective Petroter technology, we are making our own contribution into achieving the objectives set by Paris climate agreement, because the co-production of oil, energy, and heat allows to reduce the amount of special emissions of carbon dioxide by 80% than in the process of direct burning.

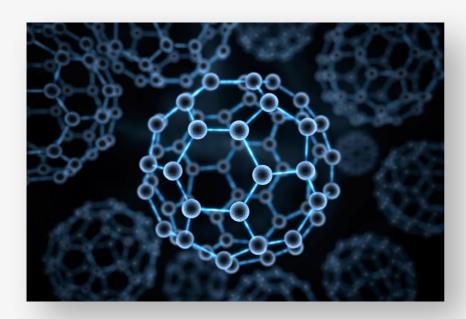


The most valuable part of Estonian oil shale is called alkylresorcinols: 5-Methylresorcinol, 2-Methylresorcinol, 5-Methylresorcinol Monohydrate and 2,4-Dimethylresorcinol, all fine chemicals with high reactivity and of high purity.

Oil shale chemicals can be used in a variety of products. Chemicals from Estonian oil shale can be found in dyed textiles, tanned furs, also hair dyes by L'Oréal, Wella ja Schwarzkopf, skincare and sunscreens. They are also used in the manufacturing of Samsung TV screens, also Lexus and Toyota car parts.

Honeyol and rezol, oil shale phenols fractions, are used as adhesive resins in tire, plywood and petroleum industry and as a base in manufacturing dyes and varnishes. The product from the new resin production unit that was opened in 2012 is called "red resin" and it is used in the manufacturing of tires by the best tire manufacturers in the world - Lexus, Goodyear, Pirelli and Bridgestone.

VALUABLE CHEMICALS



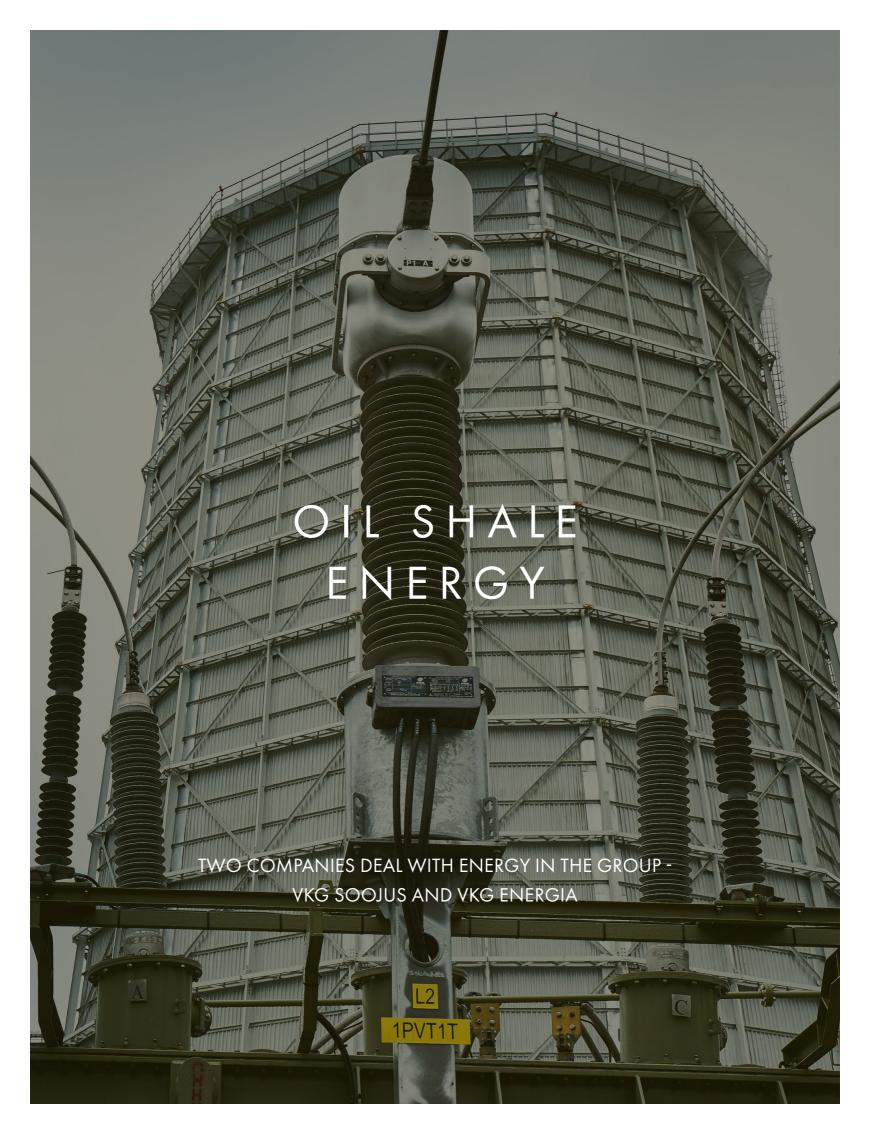
VKG IS CURRENTLY THE ONLY COMPANY IN ESTONIA TO EXTRACT VALUABLE FINE CHEMICALS FROM SHALE OIL.

The company is capable of producing hundreds of tons of fine chemicals of high purity (over 99%) per year. Price of the fine chemicals can go up to hundreds of euros per kilogram.

In connection with low oil prices Kiviter oil factories were suspended for 8 months. It had its effect on the production of phenol products, which decreased by about 2.5 times. In 2016, VKG sold about 400 tons of fine chemicals and phenol products. The production of fine chemicals was restored by re-commissioning Kiviter factories in the third quarter last year.

The largest consumers of Estonian shale oil chemicals are well-known businesses from the EU, Japan and India. Fine chemicals produced in Kohtla-Järve have also been used in Iran and Latin America.

New web page for fine chemicals is located at www.finechem.eu



VKG SOOJUS

VKG Soojus offers heat distribution and sales services. Residual heat generated in the process of processing oil shale is used for heating the service areas. The areas of Kohtla-Järve and Jõhvi are heated through a main heating system which is over 18.5 kilometres long. It was built in 2012. The heating main starts at the VKG Energia production area in Kohtla-Järve and runs through several rural municipalities up to the point of connection to the distribution network at VKG Soojus.

In 2016, VKG Soojus made advances to tens of apartment associations by deferring the dates of payment of overdue amounts (debts) for the

heating period of 2015-2016 and started supplying all customers with heating energy before it got really cold.

Last year, the volume of thermal energy produce in the group made up 506 GWh. Owing to the fact that thermal energy is produced from the gas that forms in the process of processing oil shale, the fluctuation of prices on global markets affects the end consumers of heat to a smaller extent. During the reporting period, VKG Soojus was selling thermal energy at the price of 55.22 euros + VAT for a megawatt-hour, which is still on of the lowest prices in Estonia.

VKG ENERGIA

VKG Energia is an industrial power energy company, the main aim of which is to provide heat supply in the area and produce electricity both for VKG itself and for neighbouring companies, using the entire volume of oil shale gas produced at VKG Oil. VKG Energia has got two thermal power stations: Southern thermal power station and Northern thermal power station. The thermal energy output capacity of the company is 320 MW, and the electrical power generation capacity is 95 MW. The output capacity is accumulated at the Northern thermal power station, and the Southern thermal power station has been on standby since January 2016. In the end of 2016, the construction of the new gas boiler with the nominal capacity of 100 MW started, which will be ready in October 2017. The completion of the new boiler is going to boost the thermal energy output capacity of the company to 420 MW and significantly improve the reliability of boilers. VKG Energia OÜ pays special attention to environmental protection. The aim of the activities in the field of environmental protection is to ensure the adherence to all of the valid environmental requirements established by environmental permits, continuous decrease in the environmental impact of the company, and minimization of environmental risks arising from the activities of the company.

In October 2016, the third machine for cleaning flue gases from sulphur dioxide based on the SDA (Spray Drying Absorption process) technology was completed. When cleaning flue gases from sulphur dioxide, quick lime is used that is produced at the company's own lime plant. In connection with the launch of the new cleaning machine, the Northern thermal power plant was taken over to a new operation mode, where the entire volume of flue gas is distributed between cleaning machines by means of the common flue gas collector, and after that the purified flue gas is headed to a large smoke flue (150 m). This system allows to use a flexible approach to cleaning flue gases - through a common flue gas collector it is possible to distribute flue gases between all cleaning machines, which ensures cleaning the entire amount of flue gas in the atmosphere.

The transfer to the new common cleaning system has noticeably decreased the amount of environmental emissions of the Northern thermal power station. In 2016, with the help of sulphur-trapping devices, about 11,000 tons of sulphur dioxide was trapped from flue gases exiting boilers, which is about 45% more than in 2015.

In addition to shale oil produced at VKG oil plants, the company also produces char gas, steam, and warm water, which is headed to the power station, and power energy is produced as well as heat for surrounding towns and steam for industrial consumers. This solution allows to use the energy obtained from oil shale to the maximum and avoid using additional fossil fuels. The method of production of energy and heat used at VKG is, compared with direct burning of oil shale, several times more efficient and leaves a much smaller environmental footprint.

- → The following standards are valid at the company: ISO 9001:2008, ISO 14001:2004, ISO 50001:2011, OHSAS 18001:2007
- → The turnover of the company in 2016 was **42.3 million euros**.
- \rightarrow In 2016, **126 people** were working in the company on the average.

FOCUSES OF THE COMPANY FOR THE NEXT PERIODS

- → Improving the Efficiency
- → Adhering to Environmental Requirements
- → Improving Reliability and the Quality of Services
- → Expanding Customer Database

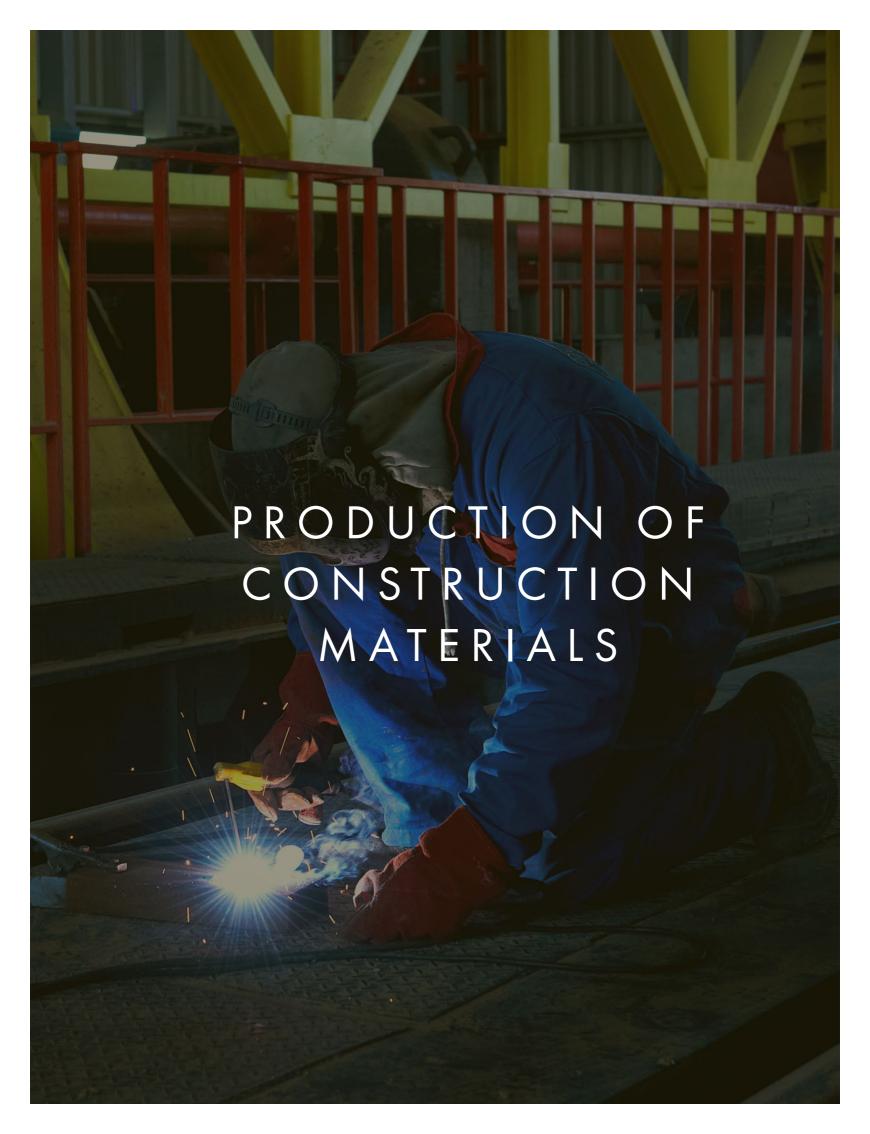
VKG ELEKTRIVÕRGUD

In terms of sales volumes, VKG Elektrivõrgud is the third largest electric distribution company in Estonia.

The main fields of activity of the electric distribution company operating in the north-east of Estonia is the provision of power energy network services and the sale of electrical energy. The area with the population of approximately ninety thousand people is supplied with power energy by means of electric power lines of VKG Elektrivõrgud. The company has 4 substations with the voltage of 110 kV, 8 substations with the voltage of 35 kV, 359 substations with the voltage of 6 kV and 10 kV, 413 km of electric power lines and 501 km of cable connections.

Every year VKG Elektrivõrgud invests considerable amounts of money into the maintenance of lines, substations, and other equipment, which is why the reliability of the network has increased, and the amount of network losses has decreased. In 2016, ca 1 million euros was invested into the development of the network and increasing its reliability. In addition to satisfying the needs of private consumers and small companies, the company plays an important part in supplying large industrial enterprises in Narva and Sillamäe with electricity.

- → Technical and commercial losses of VKG Elektrivõrgud in 2016 (the difference between the amount of energy entering the network and leaving it) has made 6.75%.
- → The average frequency of interruptions caused by malfunctions per a point of consumption per year (System Average Interruption Frequency Index, SAIFI) in 2016 was 0.051.
- → By the end of 2016, 100% of meters installed at the company were remotely read.
- → The management system that corresponds to standards ISO 9001:2008 and OHSAS 18001:2007 is valid at the company.
- → The turnover of the company in 2016 was 12.52 million euros.
- → In 2015, 60 people were working in the company on the average, and VKG Elektrivõrgud was one of the best employers in the region.
- → The company pays a lot of attention to **electrical safety** and holds **regular training sessions for its employees**.



IIMF PRODUCTION

VKG lime plant operates from summer 2014. The factory uses limestone gravel from Ojamaa mine as raw material, which is excavated with oil shale and used to produce lime necessary for the operation of desulphurization devices. Semi-coke and generator gases deriving from the production processes of shale oil are used to get energy for decarbonisation. A modern mixing unit is constructed for mixing and dosing the gases.

This solution for manufacturing lime is developed by Viru Keemia Grupp and unique in Estonia.

In 2016, the plant manufactured around 13,500 tons for lime, which was fully used in the process of bonding sulphur compounds found in flue gases. The capacity of the lime plant's production fully covers all current and future needs of VKG, and also offers the opportunity to market a certain amount of lime to consumers outside the group.

Some of the by products of desulphurization found use in agriculture. The Agricultural Board confirmed that the product complies with quality requirements set for lime fertilizers in the Fertilizers Act, which is also proven by a certificate issued to the company.

The entire project (desulphurization devices and lime plant) follows VKG's production strategy and the goal to recognize the value of Estonian oil shale's organic and mineral potential and preserve other natural resources, such as limestone.

USE OF OIL SHALE RESIDUES IN ROAD CONSTRUCTION

The considerable amount of limestone gravel which results from the excavation of oil shale is successfully used in road construction, landscaping and as a filling material. In last year, the mine waste generated in the group was fully used.

ROCLITE BUILDING BLOCKS

The subsidiary VKG Plokk is responsible for the production of construction blocks in the group, which sold the products under the Roclite brand in Estonia and abroad for export. In the end of 2016, VKG started preparing for selling the company to the construction materials industry company Aeroc International AS. The sales transaction took place in January 2017.

VKG Plokk was a part of the group since 2011, and from January 2012, it has been producing masonry units of the new generation under the Roclite brand.



VKG TRANSPORT



VKG TRANSPORT AS IS
ONE OF THE LARGEST
TRANSPORTATION
COMPANIES IN ESTONIA, AND
IT PROVIDES INTERNATIONAL
ROAD AND RAILWAY
TRANSPORT LOGISTIC
SERVICES.

THE COMPANY'S MAIN AREAS OF ACTIVITY ARE

- → organisation of international and domestic railway and road transportation of goods;
- → provision of forwarding services;
- → motor transport special services;
- $\,
 ightarrow\,$ railway construction, maintenance and repair services
- → weighing of railway wagons;
- → transportation of hazardous waste
- → VKG Transport has been operating **since 1999**.
- \rightarrow In 2016 **128 employees** worked in the company.
- → In 2016, the turnover amounted to 12.3 million euro, while the profit was 1.1 million euro.
- → About 90% of the turnover of the company is made up of the services within the group, which are related mainly to processing and excavating of oil shale.
- → The volume of investments in 2016 was 372,900 euros. The main investments were related to the project of thorough overhaul of the railway and the acquisition of new special equipment.
- → In connection with changes in the business focus of VKG Transport and the need to concentrate only on the services supporting the main activities of the group, in the end of 2016, we stopped providing the service of transportation of hazardous liquid chemicals (ADR).
- → Since the end of 2016, the company has been concentrated on the provision of efficient and high quality service to the companies within the group, which are mainly VKG Oil, VKG Kaevandused and VKG Energia.
- → The company holds all licences and activity permits required for the provision of the services listed above and it follows all environmental, quality management, occupational health and safety, and management systems, such as ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007.

VIRU RMT

VIRU RMT WAS CREATED FROM
THE FORMER REPAIR AND
ASSEMBLY DEPARTMENT OF THE
OIL SHALE CHEMICAL PLANT,
WHICH MEANS THAT IT HAS
EXTENSIVE EXPERIENCE IN THE
FIELD OF PROVISION OF REPAIR
AND ASSEMBLY SERVICES.



THE COMPANY'S MAIN AREAS OF ACTIVITY ARE

- → Production and installation of metal structures;
- → design, production and installation of technical equipment;
- → automatic management systems design, software development and installation;
- → installation and repair of control and measuring instruments;
- $\,\, o\,\,$ repairs and calibration of inspection measuring instruments;
- \rightarrow maintenance and repairs of lifting equipment, lifting operations;
- → implementation of turnkey technical solutions.
- \rightarrow In 2016, **200 people** were employed at the company.
- → The company's turnover in 2016 was **8.7 million euros**.
- → The customers of Viru RMT are mostly companies within the VKG group that provide a total of 82% or approximately 7 million euros of the company's sales.
- → The company holds the certificate ISO 9001:2000 (TÜV), EN 1090-1, EN 3834-2 and EVS-EN ISO/IEC 17025:2006 certificate.

VKG ELEKTRIEHITUS

VKG ELEKTRIEHITUS
AS IS THE COMPANY
DEALING WITH DESIGN,
CONSTRUCTION AND
REPAIRS OF ELECTRICITY
MAINS AT VKG GROUP.



The largest share of the turnover of VKG Elektriehitus is still derived from Ida-Virumaa, where the task of the company is to maintain the most eastern mains electricity of Estonia (from Narva to Sillamäe and Vaivara rural municipality) and to support the developments of the VKG group in Kohtla-Järve by providing the know-how. This is why the company has two departments, one in Narva and another one in Kohtla-Järve.

- → The company's biggest customers are the **companies of VKG** and **Eesti Energia**, and also **local governments**.
- → The partners of the company are ABB, Harju Elekter, Onninen, Viru Elektrikaubandus, SLO Eesti.

- → In 2016, the turnover of the company was **1.5 million euros**.
- → In 2016, **34 people** were employed at the company.
- → Since 2002, VKG Elektriehitus has been a member of the Estonian Association of Electrical Enterprises.
- → In its activities, it proceeds from the requirements of the ISO 9001 standards.

CONTACTS

VIRU KEEMIA GRUPP AS

Ahti Asmann, Chairman of the Board **Meelis Eldermann**, Vice Chairman of the Board

Registration number 10490531 Järveküla tee 14, 30328 Kohtla-Järve

Phone: +372 334 2700 Fax: +372 337 5044 E-mail: info@vkg.ee www.vkg.ee

VKG ENERGIA OÜ

Marek Tull, Sergei Kulikov,

Members of the Board

Järveküla tee 14 30328 Kohtla-Järve

Phone: +372 334 2852 Fax: +372 332 7620 E-mail: vkgenergia@vkg.ee

VKG TRANSPORT AS

Anton Nõomaa,

Member of the Board

Järveküla tee 14 30328 Kohtla-Järve

Phone: +372 334 2535 Fax: +372 334 2719 E-mail: transport@vkg.ee VKG OIL AS

Nikolai Petrovitš, Priit Pärn,

Members of the Board

Järveküla tee 14 30328 Kohtla-Järve

Phone: +372 334 2727 Fax: +372 334 2717 E-mail: vkgoil@vkg.ee

VKG SOOJUS AS

Aleksandr Šablinski,

Member of the Board

Ritsika 1

31027 Kohtla-Järve

Phone: +372 715 6444 Fax: +372 715 6400 E-mail: vkgsoojus@vkg.ee www.vkgsoojus.ee

VIRU RMT OÜ

Andry Pärnpuu,

Member of the Board

Järveküla tee 14 30328 Kohtla-Järve

Phone: +372 334 2573 Fax: +372 334 2545 E-mail: viru.rmt@vkg.ee www.virurmt.com VKG KAEVANDUSED OÜ

Margus Kottise, Margus Loko

Members of the Board

Järveküla tee 14 30328 Kohtla-Järve

Phone: +372 334 2782 Fax: +372 337 5044

E-mail: vkgkaevandused@vkg.ee

VKG ELEKTRIVÕRGUD OÜ

Tarmo Tiits,

Member of the Board

Paul Kerese 11 20309 Narva

Phone: +372 716 6601 Fax: +372 716 6600 E-mail: vkgev@vkg.ee www.vkgev.ee

VKG ELEKTRIEHITUS AS

Andry Pärnpuu,

Member of the Board

Paul Kerese 11 20309 Narva

Phone: +372 716 6622 Fax: +372 716 6600

E-mail: elektriehitus@vkg.ee

PHOTOS

Kaupo Kikkas Igor Vishnjakov **GRAPHIC DESIGN**

200d / Oliver Oberg