NLMK Group

NLMK Group Corporate Magazine

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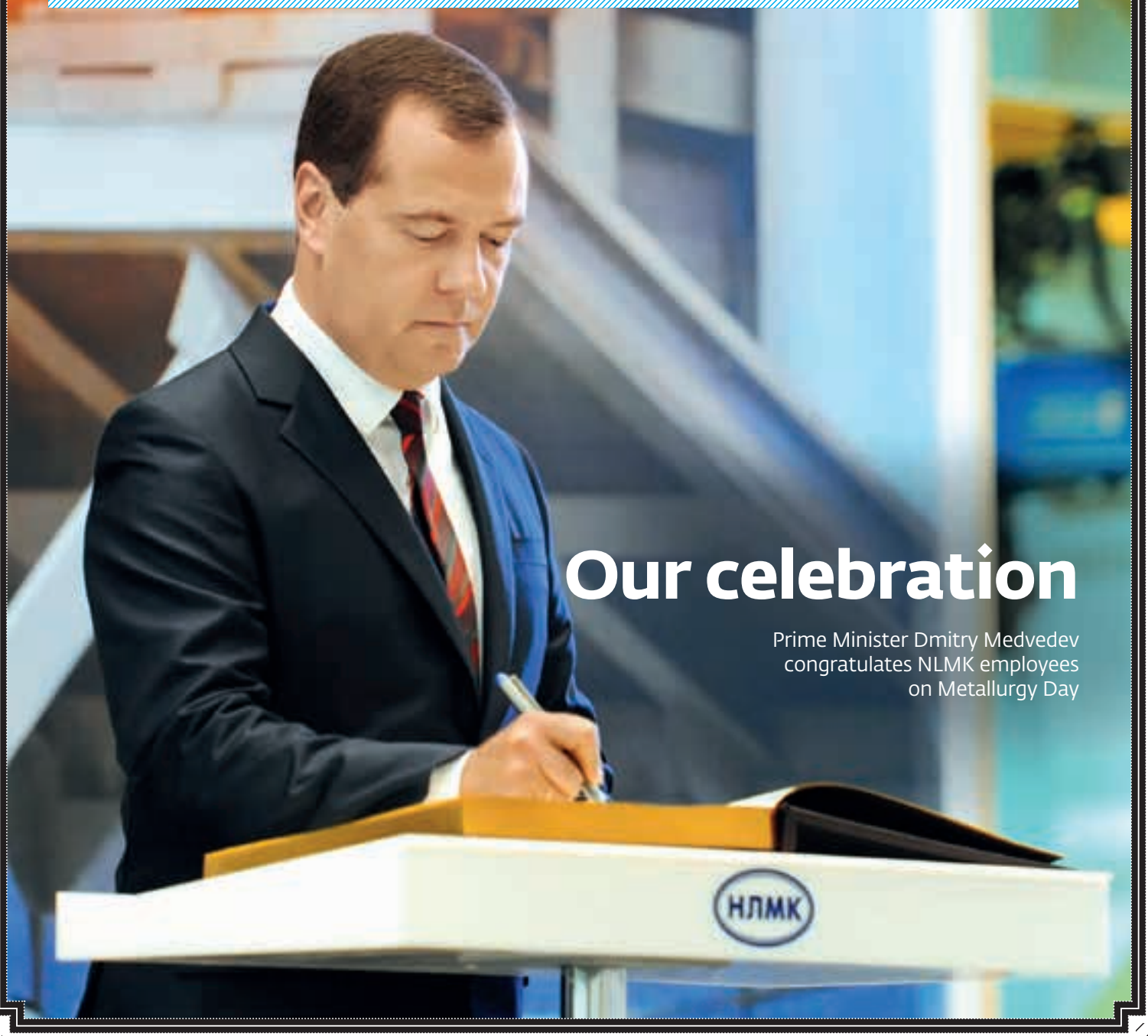

Our celebration

Prime Minister Dmitry Medvedev congratulates NLMK employees on Metallurgy Day

World Number One

NLMK Group has become the most efficient steel manufacturer in the world

Dear colleagues,

I wish you all the very best on this day dedicated to your profession – Metallurgy Day!

This year, the holiday will be a special one for NLMK Group. Our main production site – Novolipetsk – will be celebrating 80 years since the first iron was cast here.

The story of one of the world's most efficient and profitable iron and steel companies began in November 1934, when the first blast furnace was launched in Lipetsk. Over the past 80 years, that single plant has grown into the international NLMK Group.

NLMK has always led the way, adopting innovations and advanced concepts, and serving as an example of professionalism and responsibility. Today, NLMK Group is the leading producer of steel in Russia and the most efficient steel manufacturer in the world. This has been achieved thanks to the selfless work of many generations of NLMK employees and major investments in modern equipment.

The global steel industry today faces new challenges that must be met with decisive measures aimed at improving production efficiency and increasing the long-term competitiveness and sustainability of the business. NLMK's traditions of leadership and our innovative approach to solving the challenges before us will guarantee our success.

But most importantly, today's NLMK Group is opening up enormous possibilities for anyone who wishes to develop alongside our company and be an initiator of change.

I wish you all success in your professional lives, and hope that you enjoy personal and career growth!

Oleg Bagrin
President of NLMK Group

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Founder and Publisher: NLMK
Address: 2, Ploshchad Metallurgov, Lipetsk 398040
E-mail: magazine@nlmk.com
Editor-in-Chief: Yulia Taranova
Topic Editor: Natalia Sviridenko
Corporate Media Editor: Alexander Sutormin
Contributors: Alexander Ziborov
Contributing Photographers: Robert Kolykhalov, Dmitry Surkov
English Edition Prepared By: Alexander Tseitline, Polina Minor, Eclectic Translations

nlmkpeople

Office 18, Stroenie 1, 21, Zvyozdny Bulvar, Moscow, 129085
E-mail: ask@vashagazeta.com | vashagazeta.com

Director General: Vladimir Zmeyushchenko | Editor-in-Chief: Alexey Serditov
Executive Editor: Vilorika Ivanova
Art Director: Maksim Gelik
Designers: Yulia Ilyina, Natalia Tikhonkova, Andrey Skvortsov, Veronika Babakova
Photo Editor: Valery Degtyarev
Colour Corrector: Aleksandr Kiselev
Production Director: Oleg Merochkin

Dmitry Medvedev visits NLMK

On July 18, the day before Metallurgy Day, Russian Prime Minister Dmitry Medvedev visited the Novolipetsk site.

The Prime Minister learnt about the workings of Blast Furnace No. 7, spent some time in the foundry yard, and visited the blast furnace control room where he chatted with NLMK students gaining practical production experience at the plant.

Mr. Medvedev also visited the modern color coating plant in the non-grain oriented steel production facility and took part in a ceremony to mark the professional holiday and the 80th anniversary of the plant.

The Prime Minister awarded a certificate of honor from the Russian Government to the team at NLMK for their significant contribution to the development of the steel industry and their many professional accomplishments. Today, the Novolipetsk plant is Russia's leading steel manufacturer by production volume, and is the most technologically advanced and lowest-cost producer of steel in the world.

Mr. Medvedev also presented a further 22 state and government awards to NLMK employees. These included the Order of Friendship; Medal of the Order "For Merit to the Fatherland", 2nd class; and the honorary titles of Distinguished Metallurgist of the Russian Federation, Distinguished Mechanic of the Russian Federation, Distinguished Transport Worker of the Russian Federation, Distinguished Chemist of the Russian Federation, and the gratitude of the Russian Government.

The Prime Minister left the following comment in NLMK's distinguished guest book: "I offer my congratulations to all NLMK employees on Metallurgy Day and on the 80th anniversary of the plant" (see photo on p. 15).

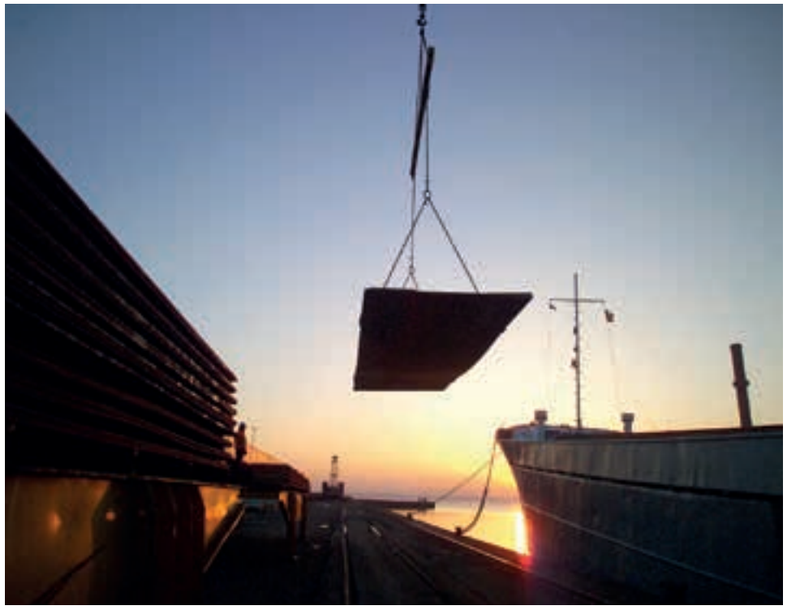
NLMK supplies OMK with 1 million tonnes of slabs for large-diameter pipes

As part of a long-term contract, NLMK Group has supplied OMK Group (Unified Metallurgical Company), a leader in the Russian large-diameter pipe market, with over 1 million ton nes of slabs for the production of large-diameter pipes.

NLMK Group President Oleg Bagrin said: "This partnership between NLMK and OMK is strategically important in the effort to reduce imports by manufacturing high-quality steel domestically. Almost two years of successful collaboration between us have proved the efficiency and viability of an all-Russian high-tech production chain for large-diameter tubes. We have created a solid foundation for further cooperation."

The contract between NLMK and OMK was signed in August 2012. In November 2013, the companies signed a Long-Term Cooperation Agreement. Under the Agreement, in 2014–2016 NLMK will supply Vyksa Steel Works with more than 2 million tonnes of slabs with superior chemical composition and steel structure standards, and in dimensions that are unique for the Russian market.

OMK Group President Vladimir Markin added: "We are able to keep our process chain compact and efficient, from mining to manufacturing tubes. This has allowed us to consistently reduce the amount of imported tube plates while maintaining the consistently high quality with the help of end-to-end monitoring of all production stages. The next step for OMK is to certify our plates rolled from Lipetsk slabs for the second string of the underwater portion of the South Stream. We expect this to allow us to stop importing high-quality plates and generate substantial value for the Russian budget."



World Number One

NLMK has become the most efficient steel manufacturer in the world.

With an EBITDA margin of 21.2%, NLMK Group has regained its rating as the most profitable steel manufacturer in the world. This is the highest margin of any of the 24 biggest global steel manufacturers.

"We intend to make a fundamental improvement to the Group's efficiency and the quality of our business processes, and to increase our self-sufficiency in key raw materials," said President of NLMK Group Oleg Bagrin at the launch of Strategy 2017 in February of this year. "This combination of operational and investment measures will ensure the stable development of the Group, whatever the market conditions."

Expenses in the first half of the year were reduced due to optimization of technology and production processes (responsible for 65% of the savings), procurement (16%), and improved productivity and energy savings (9%). "We will continue to implement a series of programs to increase operational efficiency, focusing on the introduction of NLMK's Production System across the Group's sites," said Grigory Fedorishin, Vice President, Finance. "Cost reductions in the second quarter have brought savings of USD 63 million in comparison with 2013." He added that in the first six months of 2014, NLMK Group had already achieved more than 50% of the target for annual savings which has been set for the period to 2017.

SERGEY FILATOV:

"Novolipetsk upholds its leadership traditions"

Metallurgist Day 2014 will be a special one for staff at Novolipetsk. This year marks the 80th anniversary of the first iron cast on the site, which will be celebrated under the rubric: "NLMK – 80 years of tradition and innovation". This year has also seen the start of a new phase of development for the whole NLMK Group: Strategy 2017 has been adopted, aimed at achieving a leading position in all aspects of the industry. Managing Director Sergey Filatov talks about what the Novolipetsk plant stands for today.

NOVOLIPETSK HAS ALWAYS BEEN A SITE WHICH HAS INTRODUCED TECHNOLOGIES THAT ARE AHEAD OF THEIR TIME

TRADITION AND INNOVATION

The plant's anniversary gives us cause to look back and take stock. What, in your view, has been special in NLMK's history?

Novolipetsk has always been a site which has introduced technologies that are ahead of their time. Some of them are unequalled even today. As a starting point, take 1964, when NLMK began to operate a sinter plant with the most powerful sintering equipment in the whole of the USSR and a sintering area of 312 m^2. To this day, these facilities still lead the way in terms of technology and productivity. And then just two years later, in 1966, NLMK was the location for the construction of the first basic oxygen furnace shop in the Soviet Union that poured 100% of the steel produced into continuous casting machines. I knew Mr. Wiesinger, the former Managing Director of the Linz metallurgical plant, very well and he used to talk about how Kosygin (Alexei Kosygin, Prime Minister of the USSR in the 1960s – ed.) visited him to study the technology. And then it was introduced at NLMK, in the first BOF shop. But the experimenting did not stop there. In 1973, the most powerful blast furnace in the USSR at that time was built at NLMK to a domestic design, with a capacity of 3,200 m^3 and a round cast house – Blast Furnace No. 5. This was followed by the construction of a series of blast furnaces to the same design, including some abroad. Our own sixth blast furnace is part of that series, the first in the USSR to be equipped with a tray-type bell-less top. This prompted us to adopt and then perfect new, for that time, technologies for loading the blast furnaces. And this is just a tiny fraction of the innovations which were introduced at NLMK in Soviet times alone.

Is it true that NLMK was the first in the USSR to master the production of high-alloy non-grain oriented (NGO) steel, making it possible to do without imported supplies during the Cold War years?

Yes, and the technology to do this was developed by our own specialists and at the Central Scientific Research Institute of Ferrous Metallurgy. It was back in 1986 that the NGO shop was put into production, and at that time it was the biggest in Europe. That was the start of production in Russia of all the different alloys of NGO steel with electrical insulation coatings. Apart from the standard types of product, production techniques were developed and mastered for highly porous NGO steel with improved magnetic induction and for semi-finished steel. Overall, NLMK has always been a leader in the manufacture of electrical grades of steel.

And is this tradition of technological leadership continuing?

Naturally. For example, our Blast Furnace No. 7 has achieved the highest productivity in the country among furnaces with a capacity of more than 4,000 m^3. In 2011, the first hot galvanizing unit in Russia was commissioned, capable of producing hot galvanized rolled stock up to 0.21mm

The Board of Directors has set the management team an ambitious task – to become world leaders in efficiency

thick, which is in high demand for the production of domestic goods.

And here is another example. Not long ago, using our own equipment as much as possible and based on an existing cutting unit, our workforce constructed a unique laser treatment facility. We developed a technique for laser scribing grain-oriented steel which guarantees a reduction of 10% in specific magnetic loss without reducing magnetic induction or damaging the electrical insulation coating.

Undoubtedly, new technologies are having a positive effect on the environmental footprint of our processes. Today, Lipetsk is one of the cleanest steel-producing cities in Russia. It has always been the case that at NLMK, environmental issues have been given greater weight as a matter of course. Thanks to our many years of conservation work and the investment of RUB 23 billion (~USD 623 million) in technology and ecological measures since 2000, the plant has achieved outstanding reductions in its impact on the environment. Discharge into bodies of water and landfill dumping has been completely discontinued and emissions have been halved, as a result of which the air in Lipetsk has become five times cleaner. This is reflected in official inspection results. We are gradually working toward achieving the best global results, so far as environmental impact is concerned.

And while on the subject of traditions, I would particularly like to point out how extremely competent our staff are. Some families have worked here for generations: there are a great number of "dynasties" in steelmaking in Lipetsk. This has laid a solid foundation for the plant's future development and for knowledge retention.

What place does Novolipetsk hold within the Group?

Today, Novolipetsk forms the nucleus of the Group, and our initiatives are scaled up and rolled out to all of the other sites. Novolipetsk became the first site to introduce the Business Process Improvement Program as part of NLMK Production System, which was then expanded to encompass all of the Group's businesses. Results for 2013 show that this led to savings of over USD 200 million. It was then, too, that the Group's structure was reworked: that was when the Russia Flat division, which I lead, was first set up, along with the Electrical Steel subdivision, which includes VIZ-Steel in Yekaterinburg.

A STRATEGY FOR EFFICIENCY

In this, NLMK's jubilee year, a new strategy for the whole NLMK Group has been announced – Strategy 2017. What does this strategy mean for your plant, and what targets does it set?

Confirmed by the Board of Directors, Strategy 2017 envisages a qualitatively new level of development. Over the past 10 years, a massive upgrade program has seen the company invest around USD 11 billion in modernizing and expanding production capacity. This has been a period of extensive growth. This new phase sets out a route to improve efficiency for our extended range of products and to optimize business processes, improving the coherence of the company's work as a unified whole. The Board of Directors has set the management team an ambitious task – to become world leaders in efficiency. I believe that we have what it takes to do that. For example, today, deliveries of iron ore from Stoilensky to Novolipetsk are among the most cost-effective in the world. The cost price for steel at the Lipetsk site is at least one third lower than the industry average. And by 2017, under the agreed strategy, once the pelletizing plant comes online at Stoilensky, we will have reached 100% self-sufficiency in sourcing prepared iron ore. That is just one of the many projects contained in the Strategy.

Which of the Strategy's projects are planned for this plant?

Projects for this plant can be provisionally divided into two types. The first are investment projects, which are a logical extension of the technical upgrades which have been carried out over the past few years, but are now aimed not at creating additional capacity, but at improving the productivity and environmental efficiency of existing capacity, and modernizing it. These would include projects to construct a briquetting plant, which would mean we could recycle NLMK's ferruginous waste using ecologically clean technology. Further optimization of the production facilities is envisaged through the reconstruction of blast furnaces 4, 5, and 6, and the second and third converters in BOF-2 with the construction of gas exhaust ducts. These are large-scale investment projects which will enable us to make substantial savings on the cost of materials and to reduce our environmental impact. With these measures we will be able to increase the efficiency of our primary steelmaking, which is where 80% of the cost price is tied up.

The second large group of projects, unlike the first, does not require investment, but it is no less important for long-term returns. This group is aimed at optimizing business processes. We have, for example, introduced new approaches and techniques for manufacturing and quality management at every stage of our process, bringing them together into a single NLMK Production System. This allows us to run the process within narrow prescribed limits, tracing and eliminating any deviation, even those which at first glance do not appear to be critical and, in so doing, to stabilize the output parameters. This, in turn, has already enabled us to raise our output quality to a new level and to reduce production costs. Our President has mapped out a course for us to further develop and increase the efficiency of NLMK Production System.

We have been set the target of raising the productivity of the existing plant units from 12.4 to 13 million tonnes per year. To do this, we will develop and improve the working practices recently adopted by the plants within a single manufacturing network.

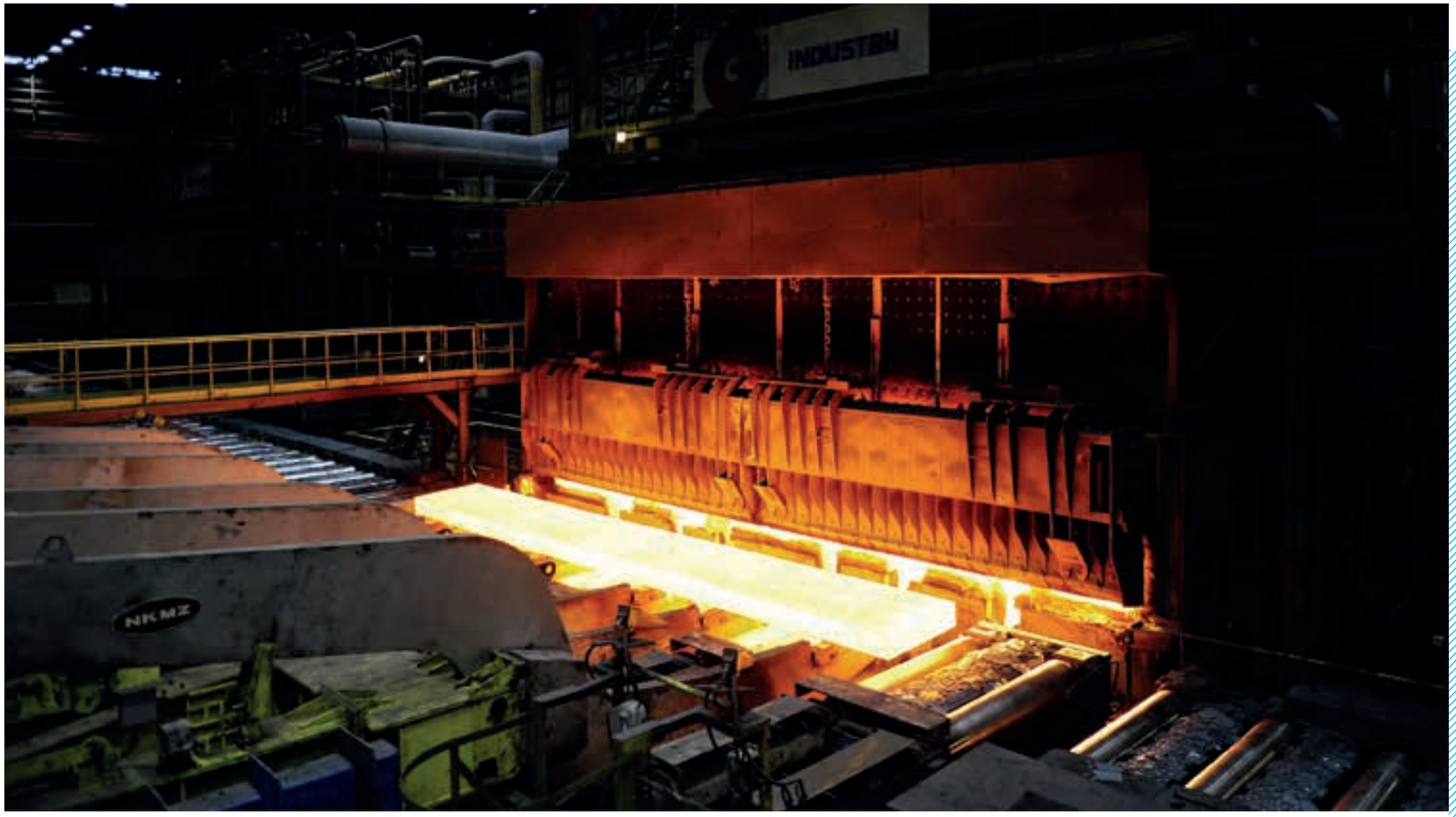
What do you mean by a "single manufacturing network"? Is it some sort of general work plan applicable to one enterprise?

Quite the opposite, in fact. This is an approach which brings together several of the Group's businesses into one coordinated structure, even if they are thousands of kilometers apart, through the use of a single planning, inventory and monitoring system. Here is a simple example: since January 1 last year, a single manufacturing network has been in place between Novolipetsk and Altai-Koks. We have managed, organizationally, to link nine coke batteries at the two businesses and to move over to unified planning, adjusting the inputs. As a result of this, we have been able to obtain the best coke in Russia, by any standard, within the shortest possible timeframe. Regardless of the fact that Lipetsk and Altai are 4,000 km apart, we have a complete view of, and are able to adjust, all of each other's processes in real time.

Has the single manufacturing network idea been rolled out throughout the Group?

It has indeed. NLMK's President has decreed that we should scale this approach up and apply it to our work with other companies in the Group. First we included Stagdok and Dolomit, and then Stoilensky, into our single manufacturing network. The work is being built up in the same way: through unified planning, with a regular exchange of information, constant quality control and adjustments to the technology, resulting in synergy. In addition, we are creating a single manufacturing network with our foreign assets, NLMK USA and NLMK Europe, where we are also setting up a single production cycle

IN THIS, NLMK'S JUBILEE YEAR, A NEW STRATEGY FOR THE WHOLE NLMK GROUP HAS BEEN ANNOUNCED – STRATEGY 2017



in order to use our advantages to maximum effect, including in the development of new grades of steel.

Are you talking here about the new Quard and Quend grades which have recently appeared on the Russian market?
Those and others. As a result of the work with our Belgian facility, we have set up production of a low alloy, abrasion-resistant steel grade, Quard, and a structural, high-strength grade, Quend. But I'm not just talking about them. Today, we can produce steel with over 50,000 variations in composition, including a whole block of premium steels with unique qualities. Take, for example, our work with the United Metallurgical Company (OMK). We have worked together on high-quality grades of steel for gas pipelines, including Nord Stream. Pipes intended for use in extreme conditions have very specific requirements. We faced the task of making slabs 355 mm thick, 2,200 mm wide and weighing up to 60 tonnes, with a very specific composition. Only NLMK, among Russian firms, was able to meet such high quality requirements, and in a record time, too – within six months, our engineers managed to achieve what it took our European colleagues twice as long to accomplish. As a result, we were able to create a highly effective production chain for large diameter pipes which had previously been made from imported steel. This is an excellent example of import substitution for a strategically important product.

Was the effort put in to developing such complex grades of steel worthwhile? Wouldn't it have been simpler to work with proven technology?
Not nowadays. With the surplus steel there is in the market today, whoever offers the best quality product at the most competitive price will survive, and that means that there is no escaping investment in new technologies. That is why we have taken up the challenge of developing complex grades of steel. Since we are able to economize on our primary steelmaking, we can spend more on advancing our production of premium segment goods, while remaining highly efficient and competitive. This means we can react quickly to any enquiry. Furthermore, we are working with specialists from all over the world, telling our consumers about the entire spectrum of useful qualities that our steel offers. As a result, our plant's products are used the world over in the most varied of industries, including wind energy, shipbuilding, the automotive industry and more. Our clients include world famous brands such as Volvo, BMW, Daimler, Caterpillar, Vestas, Siemens, General Electric and many others.

What, in your opinion, gives your plant its main competitive edge?
I think that, above all, it is the professionalism of the workforce here at NLMK. It has a remarkable continuity, retaining traditions and yet always seeking creative solutions; striving not only to perfect manufacturing processes, but also to develop new ones. These include the systems and improvements in production efficiency such as, for example, the single manufacturing network or NLMK Production System.

> The new phase sets out a route to improve efficiency for our extended range of products and to optimize business processes

Our competitive edge also comes from the fact that all of the NLMK Group businesses, including the Novolipetsk plant, form a single coordinated mechanism which is developing rapidly and constantly improving itself. As a result of our efficient technologies, production costs are minimized while quality is continuously improved. We are thus helping our clients to win the competitive battle in their own markets.

Metallurgy Day

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Metallurgy Day was widely celebrated at all of NLMK Group's Russian businesses. Steelmakers at the Lipetsk site were congratulated by the Russian Prime Minister, Dmitry Medvedev, on their professional holiday and on the 80th anniversary of their plant. He also awarded the team at Novolipetsk a certificate of honor from the government, and state and government decorations were presented to 22 NLMK employees.
All of our Russian sites marked Metallurgy Day with celebratory concerts and shows, sports competitions, and awards for the top employees.
Here is a selection of photos showing how Metallurgy Day was celebrated across NLMK.

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1. A "Generation to generation" evening celebration was organized for NLMK veterans.
2. Dmitry Medvedev awarded NLMK with a certificate of honor from the Russian government.
3. The Prime Minister personally awarded government decorations to NLMK employees.
4. Participants in a parade in Lipetsk, dressed in costumes dating from the key periods in NLMK's history: the 1930s and the 1950s.
5. A pre-war Soviet ZiS-5 truck was driven around the center of Lipetsk.

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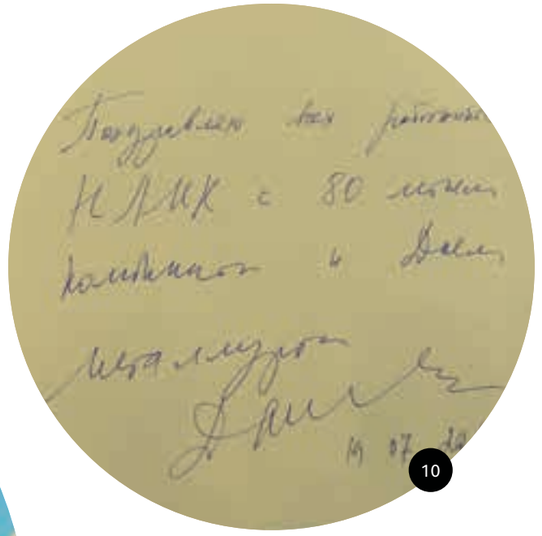

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6. The highlight of the proceedings was a tour of the EAF and rolling workshop for relatives of employees at NLMK Kaluga.
7. NLMK employees carrying a six-meter dirigible.
8. A gala concert was held at NSMMZ.
9. The ceremonial parade included future steelmakers – students at Lipetsk Technical University.
10. Dmitry Medvedev's message in the distinguished guest book at NLMK: "I offer my congratulations to all NLMK employees on Metallurgy Day and on the 80th anniversary of the plant."
11. Stoilensky employees during the celebrations.
12. Children of employees at NLMK Kaluga enjoyed an extensive program of entertainment: master classes, sweet treats and numerous contests with prizes.

The Factory of the Future

The construction of a pelletizing plant at Stoilensky is one of the most important Strategy 2017 projects for NLMK Group. The current focus is on building those key components of this “critical” facility which will take the longest to complete and which will determine the final date of the plant’s commissioning. The plant is set to be one of the largest of its kind in Europe.

Alexander Ziborov

The pelletizing plant is being built to a plan which, from the outset, has envisaged the use of the most complex pellet production equipment, taking into account both production requirements and high environmental standards. Once construction is completed, a conveyor-type machine will be used at the site, with an output of around 6 million tonnes of pellets a year. The main suppliers of equipment for the plant will be the leaders in the field of pelletization – Outotec and SVAI.

TIGHT DEADLINES

There are around 500 people working on the site today. Currently there is single-shift system in operation, but with a second shift soon to be introduced, the number of construction workers is set to double.

This is due to the fact that the timeframe for building this type of project is very tight – just two years. The construction team working on the plant, however, are not intimidated.

“The nature of the project requires that we build a huge complex in a very short space of time,” says Ragim Guseinov, the main contractor’s chief engineer. “We are working to a tried and tested method, proven over many years. At the same time, building the pelletizing plant at Stoilensky is a new experience for us. This project, after all, is a first in the processing of ferrous metals. We hope it is not the last. NLMK is a world famous brand, and working with them is always good for a company’s image.”

Just one look at the construction site from a good vantage point and all becomes clear: the work is just buzzing along. You can already see that virtually all the foundations for the various elements of the future plant have been completed.

The processing capacity of Stoilensky should go up by almost 40%

The pelletizing plant will become a model for future plants with regard to service life, efficiency and productivity

Virtually all the foundations for the various elements of the future plant have been completed, and erection of metal frames for the main buildings has begun

Erection of the metal frames for the main buildings has begun – the charge preparation, pelletization and roasting units. Work is also underway on the infrastructure – repair workshops for the roasting trolleys and electrical equipment, active storage, and administration buildings. Deep communications trenches are also being put in. This has to be done so that in future they do not obstruct the heavy lifting equipment needed to erect the roasting machines.

During the planning of the factory, a great deal of attention was paid to environmental safety and protection

A MODEL OF EFFICIENCY

"The pelletizing plant will comply with the latest guidelines from the Federal Supervisory Natural Resources Management Service (Rosprirodnadzor) regarding environmental protection," notes the Deputy Head of Capital Construction and Repairs, Oleg Skobelev. "It will serve as a model for future plants with regard to service life, efficiency and productivity." During the planning of the factory, a great deal of attention was paid to environmental safety and protection. Discharged gases will be scrubbed by electro filters, and modern gas equipment will ensure that harmful substances are reduced to a minimum. At the same time, the gas purification equipment will return the dust collected by the electro filters back into the industrial process. The 90-meter smoke stacks are equipped with sensors. These will measure nitric oxide and sulfur content in real time, together with the dust emitted into the atmosphere from the roasting machines. This will ensure that prompt action can be taken to reduce any negative impact in the event that the permissible concentration of harmful substances is exceeded.

Plans for the facility have been drawn up in such a way as to reduce waste water to a minimum and reuse process water. Drainage water, comprising mainly of water and dust, will be collected from various points in the plant and directed into the dust collection system. "This element is unique, as is the fourth section of the enrichment plant and the condensing unit in the tails treatment facility," Skobelev points out. "Here, on site, you realize that you are involved in a genuinely huge and significant undertaking. The short time-scale is certainly a real challenge for us – one which we intend to meet."

The significance of the pelletizing plant construction project has also been noted by NLMK Group management.

In the words of the Vice President for Investment Projects, Konstantin Lagutin, the development program for Stoilensky planned under Strategy 2017 is unique in scale.

"Over the next few years we must build a pellet production plant, increase the capacity of the ore extraction quarry by half, and rebuild the iron-ore crushing and enrichment plant," he said. "As a result of this, the processing capacity of Stoilensky should go up by almost 40%. This will allow NLMK Group to resolve two important strategic issues at the same time: achieving 100% self-sufficiency in all types of iron ore, and ensuring a low-cost supply."

The main suppliers of equipment for the plant will be the leaders in the field of pelletization – Outotec from Finland, and the German company Siemens VAI

A Personal Example

NLMK Director for Operational Efficiency Yulia Venza talks about how to work within a system of continual improvement, where the money goes, and why management should always be personally involved in the process.

Yulia Taranova

> *WE HAVEN'T SET THE AIM OF INTRODUCING TOOLS JUST FOR THE SAKE OF IT: THE AIM IS TO ACHIEVE RESULTS AND SECURE FINANCIAL BENEFIT*

End-of-year results revealed savings of more than RUB 1 billion (~USD 27 million)

One of the main priorities for NLMK Group this year is to develop the NLMK Production System. Can you explain, very briefly, what is meant by this concept?
Essentially, a production system is an approach to the management of a business which involves increasing profits through more careful use of existing resources. In other words, a production system is created to combat losses and any activities which use up resources without bringing in additional profit.

People saw that the method worked, and really began to believe in the system: that, in my view, was our biggest success

For example?
Let's take an example familiar to everyone: a tap is leaking in an apartment. At the end of the month, the owner of the apartment receives a huge bill for communal services. Obviously he will want to know where his money has gone. It is the same in the production process: there are the same taps and holes through which money drains away. The Production System has been set up precisely so that, with the help of specific practices, these holes can be stopped up and the production process improved.

What practices are in use today at our production sites?
These days, everyone in the Group is familiar with the concepts of control charts and the 6S and A3 methods. Each of these practices involves improving some part of the production process. For example, control charts improve production quality by smoothing out the technological processes. 6S improves workplace ergonomics, which in turn improves production quality, freeing up time for production and reducing the number of unwanted incidents. A3 is a powerful tool to achieve aims when there are multiple negative influences on the production process. What is important is that these methods, as a rule, help to improve the situation permanently. If everything is done correctly, of course.

Is it possible to identify which particular tool has been most effective – for example, at the Lipetsk site?
At Lipetsk, A3 was the most effective. We began to implement it in February of last year, in rolling production; by July we had extended it throughout the whole plant; and by September 60% of the 130 projects were already seeing the effects. The end-of-year results showed that we had saved more than RUB 1 billion (~USD 27 million). Even we did not expect success on that scale. And that was just the beginning: we can see that today, there is potential for improvement on all of our production lines, and at all of the Group's sites.

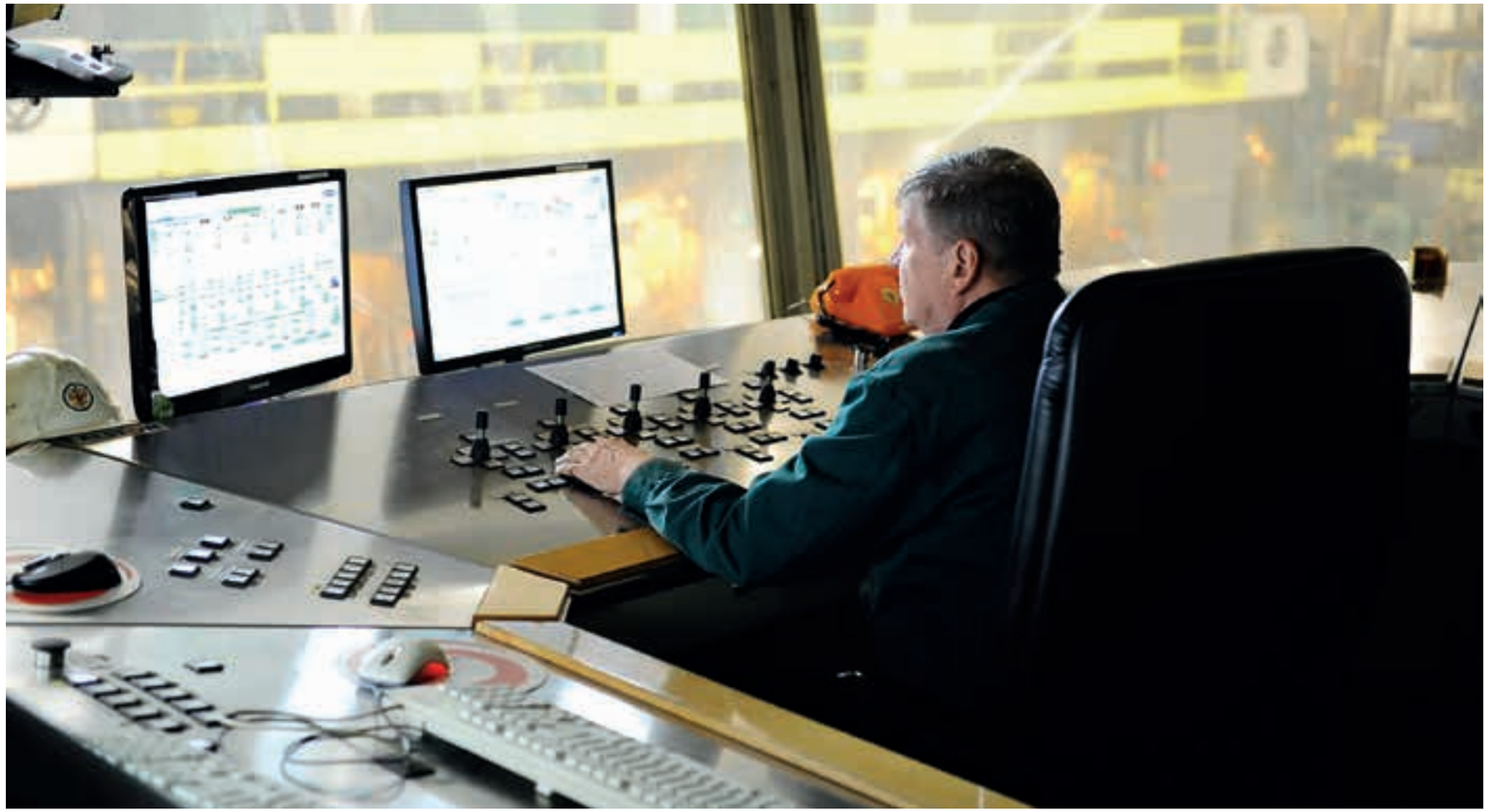
The Production System isn't just about tools for improved production efficiency, however, it also involves collaboration between various sites, and cross-functional projects, isn't that correct?
It is indeed. Those same A3 projects involve the work of cross-functional groups from various departments, since some problems are beyond the scope of a particular department and touch upon other aspects like purchasing, or repair issues, for example. When these groups dedicated to resolving specific problems were being set up, from the outset the idea was that they would be cross-functional, in order to bring in specialists from adjoining departments. The same thing is being done with the formation of the single manufacturing network between Altai-Koks and Stoilensky, so that all problems connected with the supply of raw materials to the plant are resolved in one place and by the same people.

Introducing new tools and reorganizing an established system – surely you have had to overcome some serious resistance? Have you managed that successfully, do you think?
I think so, yes. For me, the main outcome of those A3 projects wasn't so much the economic impact as the fact that staff understood that the method gave reliable results. People saw that the method worked, and really began to believe in the system: and that, in my view, was our biggest success.

And thanks to these new tools, it's now easier for people to hit our targets?
Absolutely.

Tell me, how did you get things started? How did you draw people into the projects?
In the early stages, I took part in every A3 group myself: I talked about the issues, and together with my colleagues we looked for solutions which would quickly obtain the required effect. The first project was in rolling production at Novoliptsk. At our first meeting, I was naturally a little nervous. The director of the mill gave me the floor and I began to talk about this new method, which would lead to improvements and make it easier to hit targets. The reception was mixed: some people remained gloomily silent, others were lively, asking questions. But after literally one or two working group meetings, everyone understood that there was nothing complicated in this approach, that it's not difficult to make use of these tools, and so we got to work. And I went round all of the departments like that.

That must have been a lot of work!
Yes, but it was essential to do it. It is only through personal involvement and setting a personal example that you can truly motivate people, after all. And now, with other projects, we continue to focus on our own personal involvement in the process, setting up pilot projects jointly with Group staff at the various sites.



Comprehensive troubleshooting of the Production System at all of the Group's businesses is an important goal

These days, everyone in the Group is familiar with the concepts of control charts and the 6S and A3 methods

Does taking part in projects to improve efficiency have any effect on bonuses?
If you are talking about initiatives, then yes. We have additional bonuses for people who contribute to these initiatives. An initiative is a technical solution which is set down in a simplified form on just one page. It is then passed to the department's technical committee which meets once a month. At this meeting, specialists will discuss the proposed solution and, if they think that it is likely to be effective, it is put into action and the employee receives RUB 2,000 (~USD 55) just for submitting the idea. Three months after implementation the results are examined, and if the solution has been effective a bonus of up to RUB 10,000 (~USD 270) is paid out, depending on how effective it is. This system helps to inspire creative potential among staff and encourage a desire to find the best solutions.

> The production system is created to combat losses and any activities which use up resources without bringing in additional profit.

Tell me about the plans for this year.
Right now we are working in two main directions. The first is, basically, project execution. We will continue working on our projects to increase production at Stoilensky, and to reduce the volume of goods in process on the railways together with the logistics department. NLMK Kaluga and our American assets in Pennsylvania have also got on board to bring these plans to fruition. The second, no less important, direction is comprehensive troubleshooting of the Production System at all of the Group's businesses, identifying problem areas and eliminating them. Audits of the Production System have already been started at all Group sites.

Will any more new tools be introduced?
If, this year, we can ensure that everything we have already put in place is working properly, that will already be a great achievement. You must understand that it's not enough for the tools to work in themselves: they must also bring financial benefits. We haven't set the aim of introducing tools just for the sake of it: the aim is to achieve results and secure financial benefit.

What else must be done for the system to be fully functional?
We must help people to understand that the Production System cannot

The system helps to inspire creative potential among staff

be looked at separately from the production process as a whole, that these processes are indivisible. Everyone must realize that this is now the way we work and we cannot work in any other way: this is not a temporary measure.

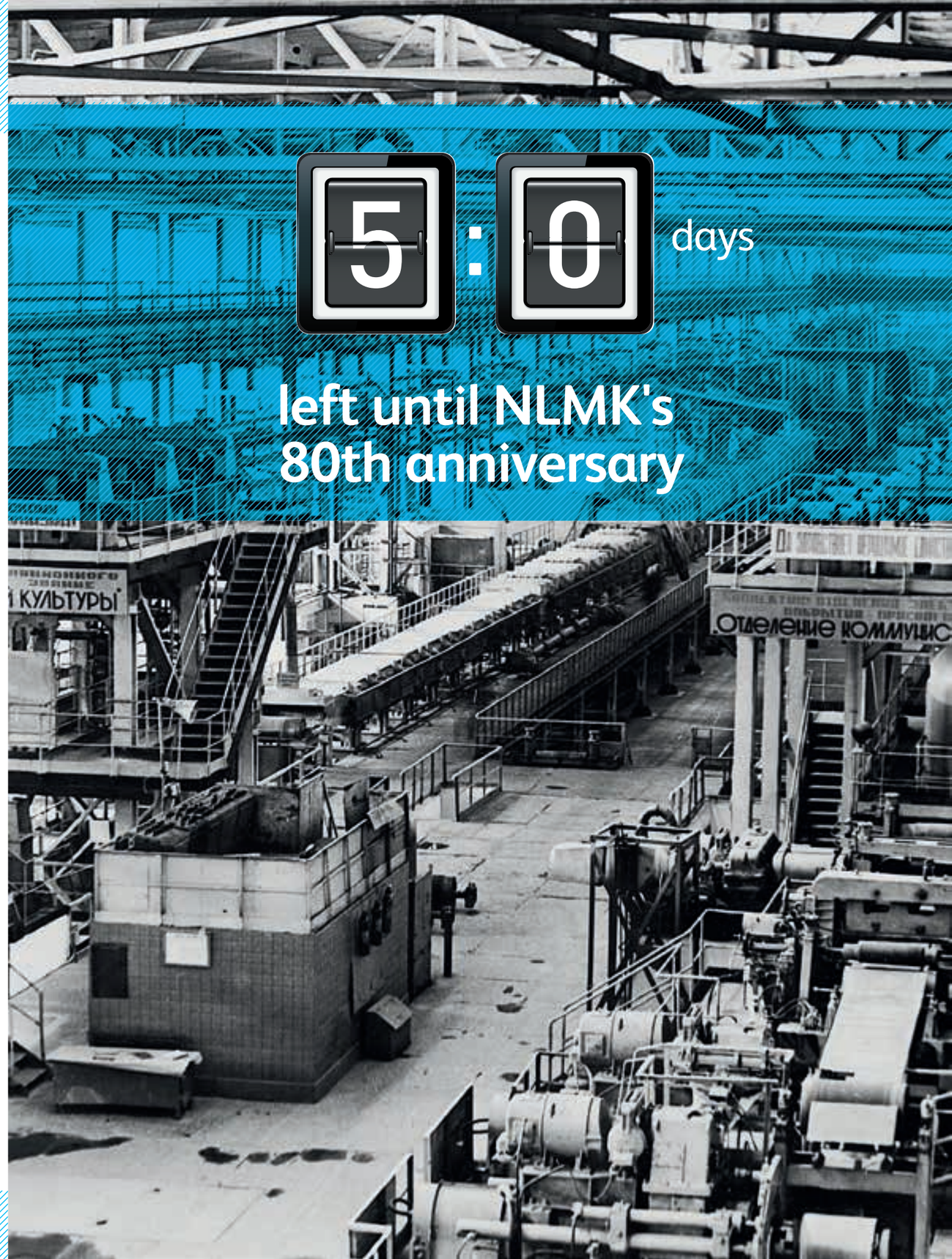
There was a seminar about the Production System earlier this year with the Vice President of Toyota Engineering Corporation, Toji Sakota. What do you think, was that a good idea?

It was indeed. Toyota founded the lean production system. I personally took part in the first group training session, which was carried out by the President of Toyota Engineering Corporation, Toshio Horikiri. I liked the fact that Mr. Horikiri has extensive personal experience in implementing lean production, since he himself has trodden the path from engineer to manager of a production department at Toyota Motors. Back then, there were many skeptical senior managers who did not believe in the new methods straight away. But Toyota has special approaches to creating teams, which inspire people to take the initiative in surprising ways. Toward the end of the training, it was no longer each for himself, but everyone for the team. Using ourselves as examples, we saw how it was possible to activate people's potential, how to inspire them to do something better.

> We will continue working on our projects to increase production at Stoilensky, and to reduce the volume of goods in process on the railways together with the logistics department

Do you use lean management tools in your personal life, too?

Since my work consists of introducing new approaches, I naturally see in advance how to solve a particular problem. I can advise on a solution. At home, I also have ideas on how to use the 6S system to organize my living space. Or, for example, when I go past the electricity meter and hear that typical sound, I know that somewhere a circuit has been broken and I must check the TV. *(laughs).*



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