

8

STEELY TIMES

How the commodities cycle is destroying the Ukrainian economy

12

A SECOND CHANCE

Modernization of NLMK's Danish plant

14

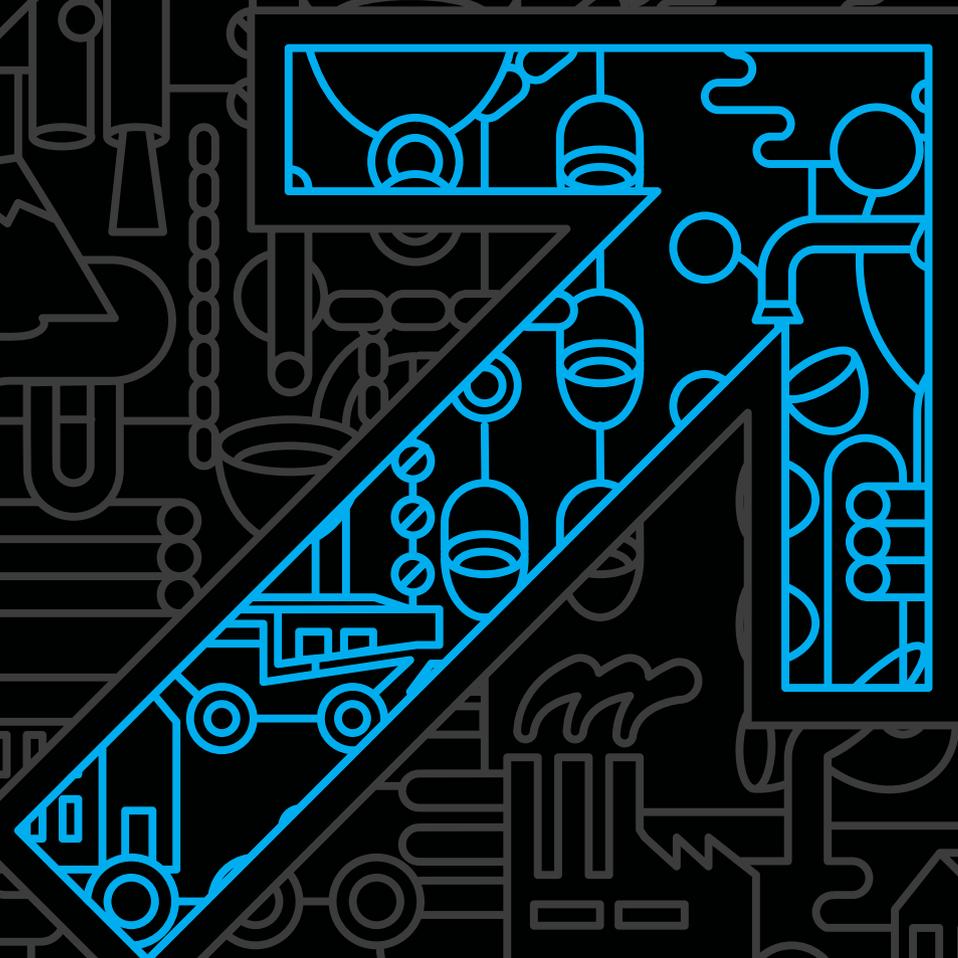
EFFICIENCY, JAPANESE STYLE

The Toyota Production System in Russian steelmaking

NLMK Group

NLMK Group Corporate Magazine

#2 (45) April 2014



**The Energy
of Efficiency**

2 NEWS Company Chronicles



4 FEATURE Strategically Important *NLMK's battle for the rational use of resources*



8 GLOBAL MELTDOWN Steely Times How the commodities cycle is destroying the Ukrainian economy



12 OUR PLACE IN THE WORLD A Second Chance Modernization of NLMK's Danish plant



14 LEAN MANUFACTURING Efficiency, Japanese Style NLMK is the first Russian steelmaker to implement the Toyota Production System



18 OUR HISTORY The Russian Nobility's Favorite Spa How a steel manufacturing center used to be a fashionable spa

NLMK GROUP
Corporate Magazine
No. 2, April 2014

Founder and Publisher: NLMK
Address: 2, Ploshchad Metallurgov, Lipetsk 398040
E-mail: magazine@nlmk.com

Editor-in-Chief: Yulia Taranova
Corporate Media Editor: Alexander Sutormin
Contributors: Natalia Sviridenko, Alexander Zotin, Maria Prikhodina, Alexander Alekseev
Contributing Photographers: Shutterstock, GettyImages, RIAN, Robert Kolykhalov
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



NLMK obtains international certificates for high-strength steel slabs

NLMK Group has successfully passed certification audits extending the scope of application for high-strength steel slabs

Certification audits were conducted in accordance with the rules of the International Association of Classification Societies. Following these, it was confirmed that NLMK's production of slabs is compliant with the requirements set forth by such certifying agencies as Det Norske Veritas (Norway), Lloyd's Register (Great Britain), and the Russian Maritime Register of Shipping (Russia).

These international certificates extend the scope of application for high-strength steel slabs. NLMK supplies them to Russian manufacturers of large-diameter pipes, and also to NLMK Europe for the manufacture of thick plates used for offshore windmills and drilling platforms, shipbuilding, and other industrial applications where steel structures have to be particularly strong and corrosion-resistant.

"An analysis of the market which takes Northern Europe into account indicates that there is stable demand for premium steel products, such as high-strength and unique-dimension thick plates," - said Ilya Guschin, NLMK Group Vice President for Sales, - "We believe that these international certificates will help further enhance the trust held for NLMK Group products, and ultimately to consolidate our position in this segment."



Sergei Likharev appointed to Acting Vice President for Logistics

Deputy Vice President for Logistics Sergei Likharev has been appointed to Acting Vice President for Logistics. Alexander Saprionov who had been Vice President for Logistics since February 2012 will be leaving to join Freight One, NLMK's main transportation company, as its new Managing Director.

Commenting on these changes, NLMK Group President and CEO Oleg Bagrin said:

"On behalf of the Group, I would like to commend Alexander Saprionov on his contribution to streamlining logistics operations at NLMK. Under his leadership, our logistics has become more efficient than ever before. I am confident that Mr Saprionov experience will undoubtedly prove invaluable at Freight One – a major Russian rail freight operator and a core NLMK partner for transport and logistics outsourcing."

Sergei Likharev has many years' experience of successfully managing large-scale transport and logistics projects. Going forward, his foremost priority will be to fine-tune operations and the cost-effectiveness of logistics at NLMK Group.

Sergei Likharev's comments:

About the results

I would like to thank my predecessor, Alexander Saprionov, who has contributed greatly to the Company's impressive results in the field of external logistics. Significant positive changes in relations with the Russian Railways, Independent Transportation Company (NTK)/Freight One, are worth a lot.

About the Company

I really like working for NLMK. The Company's commitment to becoming a global steelmaking leader not only in terms of production volumes or revenue, but also business process efficiency, streamlined HR practices, occupational health and safety, and environmental protection, is very inspiring. I get a boost of energy every day working with such a solid team led by such a president.

About the goals

First and foremost, I'll need to maintain and develop the successes achieved in the field of external logistics. But it is also time to seriously improve the operating efficiency and to cut the cost of internal logistics, both railway and automotive.

Biography

Born in Moscow in 1964

Ph.D. in Physics and Mathematics from Moscow State University, Master of Business Administration (Cornell University,CJIA). From 1990 to 1993, he worked as a researcher at Moscow State University

In 2005-2007 – CEO of Aviacor Aviation Plant in Samara

In 2008-2012 – CEO of the Basel Aero airport group

In 2012-2013 – Aviation Business Director at Russian Machines and Chairman of the Board of the Aviacor aviation plant



Growing Together

NLMK Group expands funding for social programmes in 2013

In 2013, NLMK Group increased funding for social programmes by 6% to RUB 2.3 billion. According to Alexander Sokolov, NLMK Group Vice President for Social Issues, social responsibility is a key priority for the Company. "NLMK Group's strategy is based on socially responsible business principles and partner relations

with the state and the community to promote active participation in improving the quality of life and ensuring stable social and economic development in the regions where we operate," he noted.

Priority areas of NLMK Group's 2013 Social Policy are: creating comfortable and safe working conditions; professional development and career growth; improved healthcare for NLMK employees and members of their families; organization of sporting and cultural events; and co-financing of additional non-state pension programmes.



All the Most Beautiful Girls Work at NLMK

Zhanna Trifalova, Quality Engineer at the NLMK Centre for Quality Certification and Inspection was declared Miss Lipetsk 2014 in the "Young Workers" category. She won the "NLMK Best Young Specialist 2011" prize, and in 2012, Zhanna was awarded a class II Diploma at the 42nd EVRAZ Scientific and Technological Conference for Young Specialists, Engineers, and Technicians. Her engineering project, "Improving Monitoring of the Chemical Composition of Steel at NLMK" has been adopted by the company.



Energy efficiency means using a smaller quantity of energy to achieve the same level of production

Strategically Important

In 2012, NLMK became the first steel company in Russia to receive international energy certification.

Natalya Sviridenko

achievements. It could be described as an average figure, since in 2013 there were no launches of major facilities as part of the development program.

INNOVATION IN ACTION

Modern technology offers many ways to reduce energy consumption at the various stages of industrial production. However, before the full impact of these types of savings can be understood, a great deal of preparatory work must be done.

At the main production site in Lipetsk, which accounts for around 80% of the Group's entire output, specific energy intensity was reduced to 5.67 Gcal per tonne of steel produced in 2013, compared to 5.74 Gcal for the previous year. Although perhaps at first glance it seems that a change of just a few hundredths of a gigacalorie is hardly worthwhile, on an industrial scale this translates into several hundred million rubles.

This reduction in specific energy intensity at NLMK has been made possible through a number of measures. Firstly, there was the commissioning of the recovery cogeneration plant at the Blast Furnace No. 7 complex, thanks to which the proportion of energy generated on-site increased to 53%. Secondly, the consumption of heat energy used in the steelmaking and rolling facilities, and in the energy production units, was reduced. In addition, pulverized coal injection technology was introduced for Blast Furnace No. 5, which led to reduced coke consumption in the production of pig iron. No less important was the increased productivity at NLMK's second blast furnace unit, which, in turn, led to an increase in available BF gas.

"One of the biggest projects in 2013 to improve efficiency in the use of energy resources at NLMK was a comprehensive effort to increase the amount of BF gas used," said Sergey Chebotaryov, Director for Energy Efficiency and Energy Markets at

Our aim was and remains to maximize the use of secondary energy sources

NLMK. "As part of this project, work was carried out by heat generation, heat recovery, energy production, and energy efficiency experts to improve and fine-tune the burners, and change the operating schedules and the way the burners functioned. As a result of these upgrades, the proportion of electricity produced at the cogeneration and recovery cogeneration plants from secondary (BF) gas increased from 71% in 2012 to 78% in 2013. Additionally, arranging for the condensate traps to be heated on the BF gas pipelines means that it is now possible during the heating period to supply the spare BF gas to another end user: Lipetsk Cogeneration Plant No. 2."



This achievement is the result of many years' work to rationalize energy usage and is a significant step toward future development. In 2013, thanks to the measures taken to improve energy efficiency at the Group's sites, NLMK saved more than RUB 850 million. Such an outcome is certainly striking; however, specialists believe that this is just the start of the company's

“It is no secret that in order to obtain noticeable results in energy efficiency all services must work closely together,” comments Deputy Head of Energy Management at Stoilensky Yevgeny Parshin. “We are one of the biggest energy consumers in the region and therefore energy efficiency at the plant is strictly monitored.”

In 2014, Stoilensky’s specific energy intensity should be no higher than 0.0803 Gcal per tonne of finished goods, which is one of the best in NLMK Group.

In order to sustain this rate of improvement, over the past five years 223 different measures have been drawn up and implemented as part of the energy efficiency program.

“In every department where investment in technology or equipment is planned we build in targeted and organizational measures,” explained

223 different measures have been drawn up and implemented as part of the energy efficiency program

Yevgeny Parshin. “The results of this type of work are reflected in the figures. Over the past five years, it has brought economies of around RUB 90 million.”

In 2013, VIZ-Steel saved more than RUB 24 million through its energy saving program. This is more than twice the amount achieved in the previous year. These economies were realized by optimizing the operating schedules of production equipment, the lighting, ventilation, and water supply systems, by carrying out insulation work, and so on.

The main projects in 2013 were the construction of a steam reformer and the replacement of the first air separation unit.

WE CONTINUE TO IMPROVE OUR ENERGY EFFICIENCY

All NLMK Group facilities will continue their efforts to implement energy efficient projects as part of the company’s program to improve operational efficiency.

In 2014, we are planning to commission a new turbine generator for the cogeneration plant at the Lipetsk site and to complete the construction of a compressorless gas recovery turbine. This will allow electricity to be produced using the excess pressure of BF gas at the second blast furnace unit.

At VIZ-Steel, we are planning to commission a new air separation unit and steam reformer, which will mean the decommissioning of inefficient electrolysis equipment and will significantly reduce the energy used to produce hydrogen. Additionally, work will begin to replace the second air



RUB 850
million of savings for the company is just the start

separation unit. The energy management systems are currently being prepared for certification as compliant with the requirements of ISO 50001:2011, which must take place in the fourth quarter of this year.

The upgrade of the lighting system at Stoilensky, which will take place this year, should also be mentioned. Although the cost of lighting the plant is no more than 2% of the total energy cost, upgrading the lighting system will enable a saving of around RUB 30 million a year.

“The Group will achieve further reductions in the energy intensity of steel production through the phased implementation of measures aimed at maximizing the effective use of secondary energy resources, streamlining operational processes, and upgrading facilities,” announced Alexander Starchenko, Vice President for Energy at NLMK. “The Company success in introducing the best technologies for optimizing energy consumption will increase efficiency across the Group’s entire production chain, and is viewed by the Company as being of strategic importance.”

Given the share of production costs that energy consumption represents at steel companies, stiff competition in the market, and the fact that prices for energy in Russia are reaching those of developed countries, increasing energy efficiency is a general trend in the sector. Implementing energy efficiency improvement programs at NLMK Group companies will undoubtedly strengthen the Group’s position on the steel products market. ☺

Steely Times

How the commodities cycle is destroying the Ukrainian economy

Alexandr Zotin

One of the reasons behind the economic and political crisis in Ukraine is the latest swing in the raw materials super-cycle. Until the country overcomes corruption and the inadequacy of the state authorities, it is doomed to be a victim of the “scissors” effect: high-price energy and low-cost metals. “Price scissors” was the term used by Leon Trotsky to describe the price imbalance between industrial and agricultural goods which occurred during the second year of the Soviet New Economic Policy period. The industrial base, destroyed by war and revolution, needed money. This could be earned through sales of grain abroad. Therefore, the government set high prices for industrial goods and low prices

for grain. By October 1923, prices for industrial goods stood at 276% of their 1913 level, while those for agricultural produce were at 89%.

A SUPER-CYCLE IN DECLINE

Ukraine now finds itself in the jaws of similar “scissors”. Ferrous metals are central to the country’s economy. The output is intended primarily for export. A drop in the price of metals and an increase in the cost of imported energy have forced the country into an economic trap.

Metals form the raw materials for construction and engineering. They are in demand when the economy is booming, with the construction of skyscrapers, ships, bridges, cars, excavators, construction cranes, and railroads. However, once the boom is over, both the demand and the price for metals

A drop in the price of metals and an increase in the cost of imported energy have forced the country into an economic trap



No one wanted to miss out on the Chinese boom which ate up enormous quantities of raw materials

collapse. The energy market cycle does not operate on the same scale: energy is needed even during a recession to support everyday activities (transport and heating, for example). World demand for oil during the crisis in 2009 only fell by 10%, while demand for metals dropped by 40%.

The ten-year commodities super-cycle which began at the start of the millennium, as described by Goldman Sachs, looked like this. Total investment in the mining sector worldwide grew

from USD 20 billion a year in 2003 to USD 120 billion in 2012, a six-fold increase. No one wanted to miss out on the Chinese boom which ate up enormous quantities of raw materials. Now the Chinese economy is cooling off, and the metals industry is suffering.

CAUGHT IN THE “SCISSORS”

Ukraine has fallen hostage to this commodities super-cycle. According to OECD research on the vulnerability of countries with transitional economies



to the effects of external conditions, Ukraine is hypersensitive to external shocks. Comparatively small changes in external conditions can bring about a sharp change in the economic conditions within the country. The correlation between Ukraine’s GDP growth rates and those of the world economy, the EU, and Russia is one of the closest of all the developing countries: 0.5, 0.7, and 0.9 respectively (Russia is also heavily dependent on external factors: 0.5 for the world and 0.6 for the EU). Broadly speaking, half of any growth or decline in the Ukrainian economy is due to external factors. This, in turn, is generally due to the cycle of demand for metals.

But currently the picture, alas, is a sorry one. Results for 2013 show that the country’s exports of ferrous metals dropped by 6.4% in comparison with 2012, to USD 14.3 billion (around 8% of GDP), making up about a quarter of the country’s exports. In better times, for example in 2008, Ukraine exported ferrous metals to the value of USD 25 billion, comprising 40% of all exports.

At USD 14.3 billion, 2013’s figure is almost as low as that seen during 2009 (USD 12 billion), when Ukraine’s GDP fell by 15% because of the global financial crisis and a sharp drop in demand and prices for metals (only Latvia suffered more). External trade fell at that time by 40% (exports by 38% and imports by 45%). Trade picked up in 2010, but metal prices bounced back only briefly to peak at the start of 2011:

A trap for the Ukrainian economy: the "scissors" between falling prices for metals and rising energy costs

Energy imports:



2008 – USD 15.4 billion
2013 – USD 18.6 billion

Volume of gas bought:



2008 – 52.6 billion cubic meters
2013 – 27.3 billion cubic meters

since then they have slowly but surely declined.

In addition to this decrease in export earnings, production volumes have also declined: both price and demand are volatile. Steel production reached its peak – 42.8 million tonnes – in 2007 and fell to 29.5 million in 2009. Since then, it has not really recovered, having regained less than half of the drop to reach 33.3 million tonnes in 2013. Exports fell from 28.2 million tonnes in 2007 to 22.5 million in 2009, and have also only recovered to 24 million tonnes. Capacity utilization in the steel sector has fallen from the very acceptable 93% (standard utilization is around 85%) in 2007 to 70% now. Factories are standing idle.

The cost of importing energy (mainly natural gas from Russia), by contrast, increased at the peak of metal exports. In 2008, Ukraine imported energy at a cost of USD 15.4 billion, while in 2013 this had grown to USD 18.6 billion. At the same time, according to figures from the Ministry of Energy and the Coal Industry of Ukraine, the volume of gas bought dropped from 52.6 billion cubic meters in 2008 to 27.3 billion in 2013.

This really is a trap for the Ukrainian economy: the "scissors" between falling prices for metals and rising energy costs. And it is thanks to the Soviet factories which Ukraine inherited. The vast majority of these are obsolete and in a poor state of repair, with 26.2% capacity and supremely inefficient open-hearth furnaces built in the 1950s–1970s. Only 4.5% of steel production is taking place using modern electro-smelting furnaces. By comparison, in neighboring Turkey there are no open-hearth furnaces at all; the plants are relatively modern and 74% of steel is produced by electro-smelting. Production is similar in other competitor countries: the USA, India, China, and South Korea (Deloitte, 2011 data).

Ukraine is among the top ten steel producing countries, but lags far behind

its competitors in production efficiency. In terms of energy expended per unit of GDP, Ukraine is in second place after Uzbekistan (0.46 kg of oil equivalent (kgoe) per dollar of GDP, as against 0.34 kgoe on average in the CIS, 0.33 kgoe in Russia, and 0.18 kgoe on average worldwide in 2012). Furthermore, although energy usage per unit of GDP has shrunk compared with its peak in 1996 (0.81 kgoe), this reduction stalled after the 2009 financial crisis (0.42 kgoe).

Ukrainian steel producers are concentrated in four regions of Eastern Ukraine: Donetsk (42.4% of output volumes, according to worldsteel figures), Dnepropetrovsk (30.6%), Zaporozhskaya (12.5%), and Lugansk (9.3%).

Western Ukraine, by contrast, is sustained mainly by small and medium-sized enterprises in sectors such as services, construction, and agriculture. Per capita gross regional product for the steel industry in Dnepropetrovsk, the Donetsk region, and Kiev is on average 5.5 times higher than the average of the four poorest regions of the country: Chernovitskaya, Zakarpatskaya, Ternopolskaya, and Rovnenskaya.

In addition, OECD research shows that the distribution of resources to develop the Ukrainian regions does not reflect a strategy of seeking to equalize their economies. Inter-budget transfers



The National Bank of Ukraine

make up around 16% of the state budget, but the richer regions receive more support than the rest. For example, the Donetsk region was second to Lvov in the 2010–2012 period, in terms of absolute amount of subsidies. It is true that, per capita, the poorer regions receive rather more: around UAH 2,000 as against UAH 1,000 in the richer areas.

NOT QUITE A DEAD END

But where commercial investments are justifiable they are held back due to the enterprise having insufficient

funds. Investment in the metals sector for the first nine months of 2013 amounted to around UAH 3.7 billion, 27.5% less than in the same period in 2012. The reason for this is that credit is not available.

The "scissors" problem may even be less important than errors on the part of the National Bank of Ukraine, according to Pavlo Ilyashenko, analyst with the Kiev company Astrum Investment Management. "The crucial blow we suffered was down to mistakes in monetary policy: a sharp increase in real interest rates as a result of the desire to keep the exchange rate fixed," he says. "Resistance to the market since

the second half of 2011 has been the main reason the economy has fallen into a recession."

The high value of the hryvnia has cost the economy dearly. The policy of the National Bank of Ukraine was aimed at holding the exchange rate steady (in the popular view, economic stability is associated with a stable exchange rate for the hryvnia), and reducing interest rates would have run counter to this goal. High interest rates in the name of maintaining a steady exchange rate killed inflation off in the early part of this century, demand was not fed by loans, and inflation was replaced by deflation (-0.3% in 2013). Real interest rates (the nominal rate, less inflation) exceeded 20% in 2012 and since then have remained above 15%. In order to take out a loan at that rate, any business, including those in the steel industry, must be extremely profitable and there are none such in the Ukraine (or anywhere else, for that matter).

One way to deal with the "scissors" issue is to develop agricultural production, starting with grain. The process has begun in places; crops are of growing significance for Ukrainian exports. High food prices are helping: the FAO index price for grain has increased from 85.5 in 2000 to 219.2 in 2013. Furthermore, Ukraine has a lot of potential to increase production. According to the head of the Ukrainian Agrarian Confederation, Leonid Kozachenko, grain harvests, for example, could almost double. All of this would, however, once again require a multi-billion dollar investment; Kozachenko estimates that USD 5–6 billion would be needed per year instead of the present USD 1.5 billion. And investment will only come to a country with an adequate economic policy and favorable business climate. ☺

Source:
Kommersant-Dengi

The distribution of resources to develop the Ukrainian regions does not reflect a strategy of seeking to equalize their economies

A Second Chance

How NLMK breathed new life into a factory in Denmark.

Maria Prikhodina



Yuriy Bokachev,
Managing Director of
DanSteel:

"We installed and commissioned the new rolling mill in less than two months"

The Danish town of Frederiksværk first grew up around a munitions factory in the nineteenth century. "From the date it was founded right up to the 1930s, the factory supplied armaments to the entire Danish fleet," explains Director of the local Industrial Museum, Frank Rasmussen. Later, Denmark turned into a world center for shipbuilding, and the local shipyards generated demand for high quality steel. This was bought in from France, Belgium, Italy, Germany, and Great Britain. It was then decided to start producing steel domestically at the Frederiksværk factory, DanSteel.

The factory's output was used not only for shipbuilding, but also in the construction of bridges and residential accommodation. By the 1950s, DanSteel had become the biggest manufacturer in Denmark, competing in both

NLMK invested EUR 120 million in the Danish plant



quantity and quality with Norwegian and Swedish firms. But at the turn of the twenty-first century, the steel market collapsed because much of the shipbuilding had been moved to South-East Asia. The significant difference between high production costs and low prices for the end product meant that DanSteel had become unsustainable. Production ceased in 2002.

In 2006, the plant became part of NLMK Group. The Lipetsk steelmakers had been looking abroad for businesses manufacturing higher value added products while at the same time being located nearer to potential clients. The thick plate production facility at Frederiksværk suited these aims very well. The local authorities made no objections. "When NLMK bought this plant, new investment came to the town; we couldn't help but notice the positive effect," says Susanne Hydelund, Director of Invest in Denmark,

part of the Ministry of Foreign Affairs of Denmark. "We are trying to create a level playing field for Danish and foreign companies. I know things are a little different in Russia, but we treat everyone alike."

During the 2008 crisis, the business once again stood on the brink of the abyss. To survive, it had to find a new niche for itself.

In 2012, NLMK invested EUR 120 million in the plant, completely transforming the production chain. By that point, the old rolling mill had been in operation for 60 years. "We installed and commissioned the new one in less than two months," Yuriy Bokachev, Managing Director of DanSteel, explains. The upgraded equipment enables the production of steel sheets from 5 to 200 mm thick and up to four meters wide. As a consequence, DanSteel has expanded its sales from shipbuilders to wind turbine manufacturers.



Frank Rasmussen,
Director of the Industrial
Museum at Frederiksværk:

"From the date it was founded right up to the 1930s, the factory supplied armaments to the entire Danish naval fleet"

The company's main market focus is now offshore wind energy. This sector has recently undergone development in Germany, the UK, France, and other European countries. In Denmark alone, explosive growth is anticipated in the near future. "We already generate 29% of all our electricity from wind turbines and want to bring this up to 50% by 2020," notes Susanne Hydelund.

With every passing year the number of operator companies in this sector is growing. Additionally, even more steel will be needed to build wind generators in the future. Windmills are being sited further and further offshore, and in order to withstand the harsher weather, the construction must be more substantial and solid. "Currently, the weight of the steel base for a wind turbine is around 900 to 1,000 tonnes, and the average diameter starts at 7.5 meters. But the size and weight of the structure will grow: the diameter of the base may be as big as 9.5 meters. As a consequence, the weight of the structure will also grow to at least 1,500 tonnes," says DanSteel Sales Director Christian Willumsen. Both tendencies – the wider geographical use of windmills and their increased size – will lead to greater demand for steel and, consequently, for the output of NLMK's Danish plant. And that means the future is bright for the one-industry town of Frederiksværk. ☺

Source: RBK magazine



Specialists from Toyota have been training NLMK employees in efficient working practices

Efficiency, Japanese Style

Toyota Engineering specialists ran a series of seminars on the company's Total Management System for NLMK staff in Lipetsk.

Natalya Sviridenko

TURNING PROBLEMS INTO TASKS

The Toyota Production System is held up as a paragon among production management systems the world over. Its methods and approaches have been adopted by businesses in China, the USA, Austria, South Korea, and other countries. Recently, a number of businesses in Russia have begun to introduce the Japanese production system. NLMK has become the first Russian steel company to do so.

"This isn't our first visit to NLMK. This is the fourth set of seminars that we have run for managers at your company," says Toji Sakota, Vice President of Toyota Engineering. "I hope that the main thing which Russian companies will take on board is the need to establish a universal system for staff development. After all, a company's employees are its best assets. The more knowledge and motivation they have, the more successfully these employees will seek out any problems which may come up during their work, transform them into tasks, and take action to overcome them."

According to Yuri Larin, Vice President, Technology Development & Operational Efficiency, this seminar is noteworthy because, while the first group had to be brought together under a certain amount of administrative pressure, by the fourth session, it was not possible to accommodate all

Transforming problems into tasks

Five questions for Toji Sakota, Vice President of Toyota Engineering



by your experience in other countries?

I think that the main direction in which Russian companies will move is to establish a comprehensive system of staff development because, after all, a company's employees are its best assets. Because, whatever the knowledge and motivation of your employees, if there is an ongoing system in place for staff development, it will enable your employees to succeed in identifying any challenges which arise in their work; transforming them into tasks; and taking the right measures to improve and facilitate increased labor productivity, raise production efficiency, and improve the effectiveness of management decisions. This is of the utmost importance because the basic principles of Toyota's Total Production System are also employed in the management process.

1. Is NLMK the first Russian steel company where you have held Total Management System seminars, or have you already worked with other steel producers?

NLMK is indeed the first steel company with which we have done training consultancy work. This is not our first visit to the company, however; it is the fourth time that we have worked with your company's management to run the seminars.

2. Training and seminars from the Toyota Management Institute have taken place in various Russian cities for various different companies. How developed do you think management systems are in Russian industry today?

Taking into account our experience with many businesses and different industrial sectors in Russia, I can say that so far, only a few companies can boast of world-class management systems which are competitive on an international level. I would have to say that overall, it is lower than average. I think that this is because there is no real competition between companies within the country. Many companies are very fortunate here, they are dominant in their region, or in the country as a whole, and are not bothered by international competition.

3. How might management systems in Russia develop and what will be the trend in the near future, judging

4. How do you assess what is happening in Russia at the moment?

I can't speak for the whole of Russian industry, but I do know that there are many companies, including those we have worked with, where they are undertaking systematic and long-term steps to adapt their production processes to the Toyota way. These companies have achieved a great deal.

5. It is often said that the Japanese have a different attitude to work than we do. Perhaps it is not really possible to develop this system in Russia? Or is that simply stereotyping, and there are no real national differences when it comes to this? The Toyota way and the principles on which it is based are not unique and distinctive to Japanese society or Japanese employees. We have production facilities throughout the world.



AFTER ALL, A COMPANY'S EMPLOYEES ARE ITS BEST ASSETS

Toji Sakota,
Vice President of Toyota Engineering

those who wanted to attend, despite an increase in the number of places available.

The Toyota Production System is founded upon the principles of lean manufacturing. These stipulate the creation of a process of continuous improvement. This process entails a constant elimination of waste: actions which consume resources but which

do not create value. The Japanese management system is based on engaging each employee in the improvement process.

YOU DON'T HAVE TO BE JAPANESE

The course of lectures, the practical exercises, and the group discussions have helped seminar participants understand the basis, principles, and methods of the Japanese management system. In one of the practical exercise sessions, the participants played a business game. The teams had to organize the best way to assemble an ordinary lamp, identify the problem points, and then improve on the process. You would think there is nothing difficult in assembling a lamp, and that there would be nothing to improve. However, it is exactly this type of practical task, which seems simple at first glance, that offers an insight into lean production. And, as it turns out, you don't have to be Japanese to learn how to do it.

"The Toyota Production System and the principles on which our system is organized are not specifically for Japan. We have automobile assembly plants throughout the world, including in Russia. The principles of the Toyota Production System have been known since the mid-1980s, when American consultants described one of our plants in the US with the term 'lean production,' which began to spread around the world. Many companies use these principles," the Toyota Engineering executive points out.

Toji Sakota believes that few Russian businesses feel threatened by local competition, and most are in no hurry to compare themselves to international companies. But those who are focused on introducing the best management systems are capable of becoming world leaders in their field. ©

The Japanese management system is based on engaging each employee in the improvement process

What NLMK group employees have to say about the Toyota seminars:



Vladimir Nol,
Technical Director at Stoilensky:

A key word for the Japanese is 'motivation.' Their principle is never to criticize an employee for a mistake at work, or for waste. You must investigate and understand what went wrong, and eliminate the causes. Rational organization of the workflow is one of the most important factors. At Toyota, they believe that if operating practices are correctly applied at every stage, then the result will be guaranteed quality output. Today we are preparing a new control algorithm for sectional productivity and product quality based on this principle.



Mikhail Laptev,
Chief Engineer, Head of Technical Servicing and Repairs at VIZ-Steel:

All the work must be done using our own resources, as far as possible. This is Toyota's main hypothesis. Your own employee, so the Japanese believe, knows the process best.

And since it is he who will have to work with the equipment in the future, he will best understand the company's aims and tasks, and will be the most interested in

improving the processes, refining the work flow and, therefore, the most interested in the 'Kaizen mindset.' The Japanese believe that the more complicated a task is and the more it is wrapped in red tape, the less interested the employee is in completing it. So they suggest simplification. I think this advice is well worth listening to. And also: you must encourage people to constantly improve and motivate them.



Boris Parshakov,
Head of the Cold Rolling Shop at VIZ-Steel:

The difference between our approach and that of the Japanese is that the Japanese have involved all grades of employees in problem-solving; that is, they have established a direct link between all of the employees and the problems and tasks facing the company. Toyota believes that a company's most valuable asset is its workforce. Therefore every effort is put not into the system itself, but into the people in order to create that system. By doing this, a company can single-mindedly establish a specific corporate culture, which means that it can achieve great results in many different areas, such as industrial safety, value, and product quality. Certainly, in order to get your staff to exercise their initiative and make effective suggestions, you must not only change how they are motivated but also train them in the correct working practices and explain the inter-relationship between the processes and their effect on quality and value. Training



Gennady Eremin,
Head of NLMK Technical Center:

Before the seminar I, no doubt like most of my colleagues, knew that the Toyota production management system was held up as a paragon among similar management systems the world over. The well-structured training, including a course of lectures, practical exercises, and group discussions has given me a different way of looking at solving tricky problems which we may encounter in the workplace. The best way to understand something is to 'go and look with your own eyes.' This is really the only way to grasp how a product is made. The main point made was that it is not worth trying to solve all your problems at once or to achieve significant results in a short time. Mr. Toji Sakota pointed out that many companies make the mistake of expecting instant success and increased productivity. At Toyota Motors itself, they still don't believe that TPS has been fully developed yet. Lean production and good management are a process, not a result.



The Russian Nobility's Favorite Spa

How Lipetsk turned from a steel manufacturing center during the times of Peter the Great into a fashionable spa fit for royalty

Alexander Alekseev

By the end of the eighteenth century, Russia had established a firm presence on the northern shores of the Black Sea, where new shipyards had been built. As a result, building warships in the Don basin no longer made any sense. So it was that in 1795 the Lipsky ironworks, thanks to which the town of Lipetsk had come into being, were closed for good, having existed for almost a hundred years. However, life continued in the town independently of the foundries.

MARCIAL WATERS

It was mineral water springs that breathed new life into Lipetsk. There is a legend which tells the story of how their healing qualities were first discovered. Not far from the iron foundry, there lived an old woman and her maid. One day, the maid brought in some fresh spring water and put it on to boil. The water in the pot suddenly turned quite black. The old woman was frightened, thinking that the maid wanted to

poison her. The girl was taken away for questioning and who knows what might have happened had the tsar, Peter the Great, not intervened. It is he who is considered to be the founder of the town, by the way. By imperial order, the mysterious water was taken for analysis, and the girl was freed. It soon became clear that the water had healing properties and it was decided to open a spa.

Another version has it that the source was discovered by Peter the Great himself. One day, taking a stroll with General Naum Senyavin near the foundries, he noticed a spring, the surface of which was covered with a rainbow. The tsar was struck by the unusual taste of the water. Since Peter had often been abroad and made many trips to mineral springs at European spas, he immediately understood its value, ordered an investigation into its composition, and had a well built on the spot.

The Lipetsk waters swiftly grew in popularity after chemical analysis showed that they had a similar composition to the waters of the then famous German spas. The metallic taste of the water led to it being described as "marcial", derived from the word Mars and its associations with strength and iron.

However, construction of the spa at Lipetsk did not start until 1805, by order of Tsar Alexander I. The buildings of the former ironworks were razed to the ground and in their place an English garden was laid out – this is now Nizh-

The Lipetsk waters swiftly grew in popularity after chemical analysis

niy Park. Later, a memorial to the Lipsky factories was erected, in the form of three iron cannons that had been cast at the factories, set on a low plinth in Nizhniy Park.

"IN TIME THIS WATER WILL BE NEEDED"

Thanks to the spa, Lipetsk became famous throughout Russia. The Russian aristocracy flocked here in the nineteenth century; until that time they had vacationed at European spas, but it was no longer considered patriotic to visit them after the war with France in 1812.

A nineteenth century guidebook had the following to say about the spa at Lipetsk: "The Lipetsk function room is a magnificent spectacle, when, during a ball, it is decorated with oak garlands, trees, flowers, and so on, glimmering with hundreds of flames, and packed with the best-dressed people."

The spa became so popular that in 1815, Prince Shakhovskiy wrote a

Three facts about the town:

It is traditionally believed that the name of the town comes from the name of the linden trees (lipy) so popular in the town, and depicted on the town's coat of arms. That said, there are hardly any lindens in Lipetsk; there are a lot of Lombardy poplars, however.

Lipetsk water has a similar composition to the waters in the famous German spa towns.

Legend has it that Lipetsk and St. Petersburg were founded in 1703 by one and the same person, Peter the Great.



comedy entitled *A Lesson for Flirts, or the Waters of Lipetsk*, which played to great acclaim in Moscow and St. Petersburg. The literary stir caused by the play was so intense that Pushkin called it the “Lipetsk deluge.” Pushkin himself never visited Lipetsk, but Anna Kern, who was responsible for Pushkin’s “magic moment,” stopped by several times.

In 1820, Tsar Alexander I visited the spa at Lipetsk. The Tambov gentry built a wooden gallery in Nizhny Park in honor of his visit, where a ball was held on July 22. After that, the ball was held annually. Gentry from the surrounding

districts came, and there were illuminations and fireworks. Visiting troupes from Moscow and St. Petersburg staged plays by Russian and foreign playwrights at the spa town.

In 1907, Lipetsk won the top prize at the International Exhibition in Belgium, and six years later took the highest honor at the All-Russia Hygiene Exhibition in St. Petersburg.

The Lipetsk Mineral Waters spa is popular to this day – there is still a sanatorium in the center of the town.

A NEW ERA OF METALLURGY IN LIPETSK

Yet metallurgy did not completely die out in Lipetsk. In the second half of the nineteenth century, a number of metalworking shops were operating, using local iron ore. There was a small metallurgical factory belonging to the Milovanov brothers, with both casting and machine-building facilities, and the Bykhanov factory was being built next door.

At the turn of the century, the pace of industrialization in Lipetsk stepped up a notch. The presence of ore and cheap labor attracted the attention of foreign entrepreneurs, who saw investment opportunities here. In 1898,



some Belgian concessionaires, with the support of the Lipetsk gentry led by Alexander Kozhin, began to build the Sokolsky metallurgical factory with two blast furnaces on the banks of the Voronezh River. It was fitted out in 1902, and on July 15, the factory produced its first cast iron.

It is February 25, 1931, however, which should be seen as the official starting point for the new era of metallurgy in Lipetsk: it was on that date that the order to construct an iron foundry in Lipetsk was issued by the Council of People’s Commissars of the USSR. Today, this is Novolipetsk, the company which was destined to bring Lipetsk international renown as an industrial center. ©

The presence of ore and cheap labor attracted the attention of foreign entrepreneurs

1 : 5 : 0 days

left until NLMK's 80th anniversary





Read us online:
www.nlmk.com/mag



Keep in touch:
magazine@nlmk.com