ASPECTS OF FERROUS METALLURGY DEVELOPMENT IN KAZAKHSTAN AT THE EXAMPLE OF ARCELORMITTAL TEMIRTAU JSC

Victoria LEZHNEVA, Sergey LEZHNEV

Karaganda state industrial university, 101400, Republic avenue 30, Temirtau, Republic of Kazakhstan, kgiu@mail.ru

Abstract
Metallurgical industry of Kazakhstan is the large sector of domestic economy. Basic mining and metallurgical companies of Kazakhstan, first of all Euroasian industrial association, ArcelorMittal Temirtau JSC, Kazakhmys Corporation JSC, Kazzink JSC, represent uniform production & economic complex incorporating plants of mining, enrichment and metallurgical processing, as well as power and the heat producing enterprises, well developed infrastructure, providing the financial, marketing, selling, external economic and scientific research works.

Keywords: metallurgical industry, domestic economy, infrastructure, mining and metallurgical companies.

1. INTRODUCTION
Stabilization and growth of production volume in the branch confirm the proof of government actions for the transfer of this branch to market system and transfer of property to the private management including investments and management. Thus, large exclusive companies under foreign management for which there is no alternative, were created in the country. Generally they are legislators in the carrying out of innovative and external economic policy in the branch. So, one of leading companies at the steelmaking market, not only in Kazakhstan, but also in the world, is ArcelorMittal Temirtau joint-stock company. This company has big advantage for the foreign steelmaking companies that are the availability of captive mineral raw material base and quite cheap electric power, as well as availability of qualified technical staff.

But in conditions of China coming to the global market of steel products and metallurgical technologies and equipment puts in front of ArcelorMittal Temirtau JSC the task of innovative activity strengthening and construction of last generation plants with the use of latest technological improvements. Only in this case ArcelorMittal Temirtau JSC will be able to hold its positions at the steelmaking market and to become more competitive enterprise at the world steel market in the future. And the company understands it.

2. MAIN TEXT

2.1 Methodological bases
So over the last 10 years (from 2003 till 2012) product mix at ArcelorMittal Temirtau JSC was considerably extended. Production of rolled and sheet product with galvanized and polymeric coating of thin product mix and long product is introduced, production of hot-rolled, cold rolled product and coated rolled product as per dozens of foreign standards (ASTM, JIS, EN/DIN, GB, etc.), as well as by-products of metallurgical production is mastered. Granulated slag and rubble are made of blast furnace slag for using in construction of highways, cement, construction concrete and mineral wool. But at the same time the dynamics of steel products import to the Republic of Kazakhstan demonstrates available distortions between the product mix at ArcelorMittal Temirtau JSC and steel production, necessary for internal consumption.
Fig. 1 Steel consumption dynamics in Kazakhstan

With the increase of high-quality flat plates (slabs) and thin sheets, at the expense of Continuous casting machines and new flat coated product manufacturing shops start-up by ArcelorMittal Temirtau JSC, amount of ferrous metals import as per this product mix already decreased in pre-crisis years. The significant import share of expensive types of steel products in Kazakhstan is the share generally taken by long products (large section profiles, seamless pipes, rails, stainless rolled product) made of the high-carbonaceous and high-alloyed grades of steel.

Fig. 2 Share of steel products import to Kazakhstan

2.2 Results and discussion

Commissioned bar rolling mill at ArcelorMittal Temirtau JSC and mastering of the production technology for such products as rebar, angle and round is still not able to remove import production completely from the market of Kazakhstan.

Thus we would like to point out that at the expense of the State program of the forced industrial and
innovative development realization in Kazakhstan the demand of rolled steel products will only grow year by
year, at least during next 10 years. So in the nearest future the railway transport of the Republic can become
the main consumer of rolled steel products in Kazakhstan. After all, the construction of new highways with a
total length of over 3 thousand km, continuous repair and replacement of railway lines at existing highways,
commissioning of car-building plants is the most metal-consuming domestic market after the construction
industry.

The important partner of ferrous metallurgy is now the oil and gas industry and municipal services which are
the biggest consumers of oil/gas and water pipes of big and medium diameters during the construction of
pipelines, and with their startup – for repair and replacement of corroded pipes. Except for pipes oil and gas
complex and municipal services need various shutoff cast valves (valves, gate taps and so on) not produced
in the Republic. The total demand of pipes during separate periods can exceed 500 kt/year.

ArcelorMittal Temirtau JSC is capable to melt steel grades containing niobium, vanadium for pipes of big
diameter for oil and gas appointment with the ultralow content of sulfur at the mastering of desulfurization
and dephosphorization technology of hot iron. In conditions of billet casting machine startup for Bar mill and
rail and structural mill with a thermo-tempering section (its purchase is provided in long-term plans of plant
development) ArcelorMittal Temirtau JSC is also capable to organize at its base rail and large section rolling
production. Thus the increase in outputs of steel and modernization of the plant for production of high value
added products will be the least cost-consuming one only on condition of the modern equipment
involvement.

The important part in the solution of these matters ArcelorMittal Temirtau JSC is assigned to carrying out the
large-scale works by the research center available at the plant together with scientists of the Karaganda
State Industrial University in such directions, as development of deep denitration technologies, decarbonizing by means of VOD and combined purge by argon, desulfurization, dephosphorization, modifying,
controlled rolling.

CONCLUSION

If we carry out the assessment of further development of mining and metallurgical industry branch in
Kazakhstan as a whole, the most perspective directions of this branch development in the next decades will
be as follows:

- increase of complex processing of raw materials with getting of new types of export products, at the
  expense of introduction and development of new innovative technologies and development of scientific and
technical development;
- involvement of new deposits, off-balance ores and technogenic mineral formations in the process that will
  expand a raw materials base and will increase the production at the expense of introduction of new
technologies and increase of research works level;
- creation of plants for increase of final streams number directed on production of steel products and
  products made of them for needs of domestic market with the subsequent orientation to foreign markets;
- introduction of effective innovative technologies for the organization of production on deep and complex
  processing of the sub-standard raw materials, allowing to receive products having high consumer cost;
- preservation of metal fund of the state by means of absolute prohibition of scrap export;
- satisfaction of internal demand with the development of metal-consuming industry branches in Kazakhstan.

Realization of abovementioned directions of mining and metallurgical industry branch development in
Kazakhstan will allow the saving of the leading position of the metallurgical industry in the economy of Kazakhstan within centuries.

LITERATURE
