

## The list of modern mining and ore-processing complexes, designed by ZAO “Mekhanobr Engineering”

Areas of activity	Main customers			Accomplished results
	Managing company	Facility	Capacity, million tons/year	
1	2	3	4	5
<b>1. Base metals ores</b>				
1.1. Copper-nickel ores	«MMC Norilsk Nickel» PLC	Talnakh Concentrating Plant	10.0	The Talnakh Concentrating Plant upgrading and retooling with capacity increase to 16 million tons/year by total ore. The I <sup>st</sup> stage start-up facilities (7.5 million tons/year) – constructed and commissioned in 2015, the II <sup>d</sup> stage start-up facilities (up to 10 million tons/year) – constructed and planned to be commissioned in 2016.
		“Pechenganickel MMC” PLC	7.4	The Mine-and-Mill Complex Concentrating Plant modification and upgrade. The Concentrating Plant is presently equipped with up-to-date highly automated equipment. Roasted briquettes production sector was constructed and commissioned in 2011.
1.2. Copper-zinc ores	«Ural Mining & Metallurgical Company – Holding» LLC	“Gaiskiy MCC” PLC	8.0	The Concentrating Plant expansion with capacity increase to 8 million tons/year. This expansion project was accomplished with application of ore semi-autogenous grinding and rational flotation technology and with up-to-date equipment. The expansion project construction was completed and brought into pilot production in 2014.
		“Russian Copper company” Ltd.	0.6	The Concentrating Plant processing current production slag is integrated in the “Karabash” copper-smelting plant. The Concentrating Plant was constructed and commissioned with reaching design target values in 2008.
	“Aleksandrinskaya Mining Company” PLC	0.8	The Concentrating Plant upgrading with capacity increase to 800 thousand tons/year. The crushing section was upgraded with addition of bulk flotation circuit and production capacity was increased with installation of new equipment. The upgraded facilities were commissioned in 2012.	
1.3. Copper-molybdenum ores	“GeoProMining Ltd.”	“Agaraksky Copper and Molybdenum Combine” Ltd.	2.0	The Concentrating Plant upgrading with construction and commissioning of the new flotation building. The upgrading project provided for increase of metals recovery from ore, as well as reduction in consumption of materials at production site. The upgraded facilities were commissioned in 2012.
1.4. Porphyry copper ores	“Russian Copper company” Ltd.	“Mikheevsky MCC” Ltd.	18.0	The Concentrating Plant with capacity of 18 million tons/year was constructed, including tailings disposal and return water system. High-unit-capacity equipment was applied. Concentrate filtering technology was applied, eliminating concentrate drying circuit. Advanced layout and arrangement solutions were introduced. The start-up and commissioning works are currently in progress.
		“Tominsky MCC” JSC	28.0	The Basic Design of Concentrating Plant with capacity of 28 million tons/year has been developed, including tailings disposal and return water system. The Concentrating Plant construction is planned to be accomplished in two Phases, each with capacity of 14 million tons/year. The Basic Design documentation is currently undergoing the state expert review.
1.5. Copper ores	The government of Uzbekistan Republic	“Almalyk MMC” JSC (Republic of Uzbekistan)	12.0	The Concentrating Plant flotation section upgrading and retooling with a view to increase flotation capacity and improve metallurgical results, also decreasing operating costs. The upgraded facilities were constructed and commissioned in 2006.
	“Baikal Mining Company” LLC	“Udokan” Deposit	-	The Pilot plant integrated in the Udokan Mining & Metallurgical Company operation. The Pilot plant equipment and instrumentation, as well as the applied design-layout solutions provide for implementation of practically any processing technology, including different alternatives of ore preparation, flotation and gravity concentration, and also hydrometallurgical processing stage. The Pilot plant was constructed and commissioned in 2005.
	The government of Republic of Vietnam	“Shin Kuen” Deposit (Republic of Vietnam)	4.0	Copper Concentrating Plant 2 at the Shin Kuen deposit. The Detail Design documentation has been developed for the Plant process equipments, Automatic Process Control system, slurry pumping station and main slurry pipelines.
1.6. Polymetallic ores	“Almalyk MMC” JSC	“Khandiza MCC” (Republic of Uzbekistan)	0.65	The Detail Design of Concentrating Plant was developed, including tailings disposal and return water system; a number of research works were performed. The new Concentrating Plant was constructed and commissioned in 2012.

1	2	3	4	5
<b>2. Iron-bearing ores</b>				
	“Severstal-group” PLC	“Karelian Okatysh” JSC	22.0	The Crushing-and-Concentrating Plant upgrading project approvals package was accomplished for ore processing capacity up to 33 million tons/year and pellets production capacity up to 11 million tons/year. The Detail Design documentation has been developed for the dry magnetic separation section and deslimation unit construction.
	“MCC “EuroChem” JSC	“Kovdorsky MCC” JSC	4.5	The Complex for beneficiation of man-made baddeleyite-apatite sands formation in TSF was upgraded, including new construction. The upgraded and newly-constructed facilities were commissioned in 2008.
	“Metalloinvest MC” LLC	“Mikhailovsky MCC” PLC	5.0	Pellet indurating machine No. 3 production complex, including slurry thickening section, thickened slurry mixers, filtering section, final concentrate storage, concentrate-flux mixing section, pelletizing, indurating and screening sections was constructed and commissioned in 2015.
	“NLMK” Group	“Novolipetsk Steel Mill” PLC	12.5	Slimes dewatering building upgrade project was implemented through installation of the latest high-efficiency thickening and filtering equipment without stopping the existing process. The upgrade project was completed in 2013.
	Myanmar Economic Corporation	“Pang-Pet” Deposit (Union of Myanmar)	0.5	The iron-making plant ore-preparation section, including crushing, limonite ore washing, sizing and drying operations, turning out 430 thousand tons/year of -8 mm ore of 50.3% iron grade has been constructed and is to be commissioned in 2016.
	Vietnam Steel Corporation	“Thakhe” Deposit (Republic of Vietnam)	10.0	“Thakhe” deposit ores mining and processing Feasibility Study was performed. The Basic Design of ore-preparation section, production process and tailings disposal system was accomplished.
	Mobarake Steel Company	“Sangan Steel & Ore Company” (Islamic Republic of Iran)	5.0	Pelletizing Plant Project for production of 5 million tons of iron ore pellets/annum. At Phase I, the Plant capacity is planned to be 17.5 million tons of iron ore concentrate and 15 million tons of iron ore pellets per year. Commissioning is planned for 2017.
<b>3. Diamond ores</b>				
	“Alrosa” PLC	“Catoca Ltd.”, module 2 (Republic of Angola)	6.0	Diamonds recovery module 2. Economically efficient project of diamond-recovery facility was implemented, construction was completed, the facility was commissioned in 2005. The documentation has been developed for the diamond-recovery module expansion to capacity of 9 million tons/year.
		“Severalmaz” PLC	4.0	Diamond-recovery facility at the deposit named after Lomonosov. The Pilot plant with capacity of 1 million tons/year was constructed in 2005; the facility expansion project to capacity of 4 million tons/year was implemented; the construction works were completed. Commissioning was in 2014.
		“Chiuzu” diamond pipe (Republic of Angola)	4.5	Diamond-recovery facility at the diamond deposit “Chiuzu”. The Detail Design documentation has been developed for construction of the diamond-recovery facility with tailings disposal system for alternative capacities of 3.6 and 4.5 million tons/year.
	“Lukoil” PLC	“Arkhangelskgeoldobycha” JSC	4.5	Diamond-recovery facility at the deposit named after V. Grib. Economically efficient project of diamond-recovery facility with tailings disposal system was implemented, the construction works were completed. Commissioning was in 2014.
<b>4. Industrial minerals</b>				
4.1. Apatite-nepheline ores	“Acron” PLC	“North-Western Phosphorous Company” JSC	6.0	The Feasibility Study for Concentrating Plant with tailings disposal system integrated in a new Mining-and-Concentrating Complex at the “Oleniy Ruchey” deposit was performed. The Project provides for application of lightweight structures and high-unit-capacity equipment, effective use of land topography and production floor space. The positive findings of the Glavgosexpertiza of Russia were obtained in 2008.
	“FosAgro” PLC	“Apatit” JSC	22.0	Apatite-Nepheline Concentrating Plant-2. The flotation operations upgrade project was implemented. Column flotation machines were applied, number of concentrate cleaning operations was reduced. Commissioning was in 2007.

General director

/E. M. Shenderovich/

« \_\_\_ » \_\_\_\_\_ 20 \_\_\_ г.