

# THE CABLE INDUSTRY OF RUSSIA AND OTHER CIS COUNTRIES: THE 2006 RESULTS

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For most cable companies and for the cable industry as a whole the year of 2006 was a successful one. The volume of cable and wire output in comparison to that of 2005 increased as estimated by the indicator «cable products by weight of copper» by 10.9 %; by the indicator «cable products by weight of metal» – by 8.7 %. At the beginning of the year the cable and wire manufacturers were extremely worried by a drastic rise in prices of metals, especially of copper, that could lead to a sales slowdown and loss of orders. However it soon became clear that the potential of cable and wire consumers was high enough, and the cable production output at the Electrocable Association plants was increasing further, though the profitability of cable manufacturing remained low.

The main reason for the advanced rate of cable production growth is the stable increase of economic indexes of Russia. In 2006 as compared to 2005 the gross domestic product (GDP) increased by 6.8 %, the output of industrial products grew by 4.1 % and the volume of capital investment – by 13.2 %. The main investments were made to the transport and communication sectors (26 %), mining operations (19.1%), manufacturing activities (17.5 %).

In the GDP structure the volumes of trade (12.8 %) and construction (14.2 %) have been increasing at a rapid rate. The high growth rate of the processing industries production should be also noted, it is mainly attributed to the growth of the metal manufacture output. At the same time, according to the Russian Statistic Agency data the increase in the electric machines and equipment production reached

114.2 %, the output of ac motors (with 63–355mm high rotational axis) increasing by 22.4 %, large electric machines – by 10.1 %, power transformers – by 27.8 %. The production of caterpillar and wheeled tractors increased by 23.9 % and 30.1 % respectively, of passenger cars – by 9.9 % and auto trucks – by 19.5 %. The production of rotary deep-well pumps grew by 16.7 %. In 2006 a rise in cable and wire production was observed in all CIS countries (Table 1) with the Russian cable companies setting the pace, their share in the total output reaching almost 82 %. The lowest increment of output was recorded in the Ukrainian cable industry (1.5 %), however the leading cable companies Yuzhkabel and Odeskabel strengthened their key position in the Ukraine. The Belarusian cable plants exhibited the highest rate of growth.

Due to the growth of copper prices for the two years running a predominant increase in the use of aluminium is observed in the cable industry (117.7 %) in comparison to copper consumption (104.4 %). Last year the Electrocable Association companies altogether processed 291.7 thousand tons of copper (increment 12.4 thousand tons during the year) and 152.8 thousand tons of aluminium (increment 23.2 thousand tons). The seven major Association plants are listed in Table 2 in order of decreasing volumes of cable production and copper and aluminium processing in 2006. The extended Sevkabel-Holding occupies the third place in the Association companies rating. The Kamkabel, Elektrokabel and Rybinskkabel plants retained their

Table 1

## Changes in volumes of cable production by the companies of the CIS countries in 2006

	Production volume in 2006, thous. tons	Growth rate versus 2005, %	Share in the total production volume, %	
			2006	2005
Cable products by weight of copper – total output	597.3	110.9	100	100
<b>Produced by the companies of</b>				
Russia	489.0	111.3	81.9	81.6
Ukraine	54.8	101.5	9.2	10.0
Belarus	30.2	118.2	5.0	4.7
Uzbekistan	14.2	108.5	2.4	2.2
Armenia	1.13	106.9	0.2	0.2
Kazakhstan	8.0	117.5	1.3	1.3
Kirgizia	0	0	0	0.05

**The seven major Electrocable Association companies by volumes of cable and wire production and copper and aluminium processing in 2006**

By volume of cable production		By volume of copper processing		By volume of aluminium processing	
Place	Company	Place	Company	Place	Company
1 (2)*	Kamkabel (Perm)	1 (1)	Kamkabel (Perm)	1 (1)	Group of companies Kirskabel, Irkutskkabel
2 (1)	Group of companies Kirskabel, Irkutskkabel	2 (2)	Elektrokabel (Kolchugino)	2 (2)	Kamkabel (Perm)
3 (6)	Sevkabel-Holding (Saint-Petersburg)	3 (3)	Rybinskabel, Volmag (Rybinsk)	3 (3)	Saranskabel (Saransk)
4 (3)	Elektrokabel (Kolchugino)	4 (6)	Sevkabel-Holding (Saint-Petersburg)	4 (6)	Sevkabel-Holding (Saint-Petersburg)
5 (5)	Saranskabel (Saransk)	5 (7)	Podolskabel (Podolsk)	5 (4)	Yuzhkabel (Kharkov)
6 (4)	Moskabelmet (Moscow)	6 (4)	Sibkabel (Tomsk)	6 (5)	Moskabelmet (Moscow)
7 (7)	Yuzhkabel (Kharkov)	7 (5)	Moskabelmet (Moscow)	7 (7)	Elektrokabel (Kolchugino)

\* In brackets – the place of the company in 2005.

leading positions by volumes of copper processing, the Sevkabel-Holding left its sixth place and came fourth.

The major cable companies ZAO UK UNKOMTEX (Irkutskkabel – Kirskabel group of plants), Kamkabel and Saranskabel hold the lead by volumes of aluminium processing. The Sevkabel-Holding changed the 6-th place for the 4-th by both copper and aluminium processing volumes.

In 2006 practically the total increment of cable product output resulted from the increase in production volumes of energy cables and wires, as well as OEM cable products.

Table 3 shows the changes in volumes of energy cable and wire production at the plants of Electrocable Association companies in 2006 as compared to 2005. In this group of products there was a significant (2.2 times) growth in the production of self-supporting insulated wires. Due to high rate of construction development a substantial increase was recorded in the production of copper power cables for voltages up to 1 kV – by 27 %, for the whole group an increment of 15 % was recorded,

Table 3

**Changes in volumes of energy cable and wire production at the plants of the Electrocable Association companies in 2006 versus 2005**

Product groups	%
Non-insulated wires for overhead power transmission lines	97
Self-supporting insulated wires for overhead power transmission lines	221
Fixed installation power cables rated for voltages up to 1kV	115
with aluminium conductor	100
Fixed installation power cables rated for voltages of 1kV and above	115
with aluminium conductor	111
Electric installation wires	99
with aluminium conductor	103
Household electric appliance wires	99
Lighting wires and cords	97
with aluminium conductor	105
Control cables	98
with aluminium conductor	95

and the production of copper and aluminium cables for voltages of

1 kV and above increased by 18 % and 11 % respectively. The production of bare conductors for overhead power transmission lines experiences stagnation. The production volumes of these conductors versus 2005 decreased by 3 %, though early in 2006 this drop was as low as 16 %. It is worth noting that the decline in output has a persistent character: for example, in 2005 versus 2004 it was 13 %. The cause is quite obvious: the rate of construction of power transmission lines with bare conductors in the Russian power grid is constantly decreasing.

Table 4 shows the dynamics of changes in the production of communication cables, wires and cords, with fiber optic cables included, by cable companies on the territory of the former USSR in 2006 as compared to 2005. In this group of cable products a stable growth (132 %) is noted in the output of cables for structured communication systems (LAN cables) and fiber optic cables. The output of optical cables at the 16 plants increased by 27 %, and in single fiber terms – by 31 %. In 2006 the total production output of these cables in fiber terms was 2.36 mln km. During the four years

Table 4

**Changes in volumes of communication cord, wire and cable production at the plants of the Electrocable Association companies in 2006 versus 2005**

Product groups	%
Long distance cables	89
Telephone communication cables	81
Area exchange cables	148
Office and distribution communication cables	72
Telephone distribution and broadcasting cables	90
Field communication cables and wires	84
Low-current cords	90
Cables for structured networks (LAN-cables)	132
Optical cables (in cable terms)	127
(in fiber terms)	131
Radio-frequency cables	74

since 2002 the production of fiber optic cables has increased 3.3 times. At the same time the number of fibers in a cable has increased from 15.5 (in 2002) to 20.2 (in 2006).

In the group of transport cables and wires (Table 5) the cable makers failed to eliminate completely the lag in the production of signal-block cables observed in the recent years (a 10 % decline versus the previous year volumes). The growth in the production of passenger cars, auto trucks and farm machinery in Russia resulted in the increase of auto truck wire output by 14 % (the total increment at the Association companies was 12 %). At the same time the production of contact wires decreased by 24 % and that of rolling stock wires – by 10 %.

Table 5

**Changes in volumes of transport wire and cable production at the plants of the Electrocable Association companies in 2006 versus 2005**

Product groups	%
Automotive wires	112
Non-insulated contact wires	76
Cables and wires for rolling stock	90
Cables for signaling and blocking circuits	90
Aircraft cables and wires	112
Shipboard cables	95

In the group of OEM cables and wires (Table 6) a rise in output was observed for the three basic cable products. The volume of production of winding wires with enamel insulation increased by 1 % versus 2005, of winding wires with fibrous insulation – by 4 %, however this was the result of higher rate of electrical equipment and power transformer output growth mentioned above. The production of cables for submersible electric pumps increased by 13 % during the year. On the whole, owing to these cables the output of non-fixed installation power cables rose by 16 %.

Table 6

**Changes in volumes of OEM wires and cables manufactured by the Electrocable Association companies in 2006 versus 2005**

Product groups	%
Winding wires with enamel insulation	101
Winding wires with fibrous and other types of insulation	104
Non-insulated flexible wires	51
Power cables for non-fixed installation	116
including cables for submersible oil electric pumps	113
Wire leads for electric machine winding	96
General purpose power cables	97
Blasting wires	116
Heating cables and wires	122
Control cables	100
Thermocouple cables and wires	115
Hook-up, ribbon wires and cables	96
Logging cables and wires	102

In 2006 a trend towards production consolidation was continuing to develop in the cable industry

of Russia. During the year the cable companies Agrokabel (Okulovka, Russia), Microprovod (Podolsk, Russia) and Donbasskabel (Donetsk, the Ukraine) joined the Sevkabel-Holding.

The basic trends of technical development of the Russian cable industry in 2006 include the following:

1. As is well known, the transition to a wide production of cross-linked polyethylene insulated medium and high voltage power cables instead of obsolescent cables with impregnated paper insulation slowed down sharply during the period of the economic crisis on the former Soviet Union territory. The research-and-development activities in this direction were rather limited. However the commercial production of medium voltage cables (10–35 kV) with cross-linked polyethylene insulation has been introduced within the recent few years and the production of high voltage cables (110 kV) has been started.

2. The extended manufacture and use of cables and wires with improved fire safety becomes more and more important. While their early production was associated with the development and introduction of cables intended for operation at nuclear power plants, a large number of new consumers of these cable products appeared in 2006. It is worth noting that not only earlier manufactured cables and wires with the use of flame retardant PVC compounds having improved fire safety characteristics are meant. The production of similar application cables incorporating halogen-free polyolefin compounds, and fire resistant cables has been started.

3. The production of fiber optic cables was progressing rapidly. While only 2–3 years ago the extension of their annual production to 1.0 mln fiber-km was considered an optimistic development, in 2006 the barrier of 2.0 mln fiber-km was overcome. Higher fiber count of optical cables was used (as it was already mentioned, at the average up to 20.2 fibers in a cable in 2006). In 2007 the average fiber count in a cable is going to increase, which depends largely on the consumers who tend to use more widely advanced multifiber optical cable telecommunication systems. Now the Russian, Ukrainian and Belarusian cable plants equipped with up-to-date processing facilities are able to satisfy practically any requirements of their consumers.

4. The production of cables for structured systems (LAN cables) was developing at a high rate; the category of the cables was increased. While in 2005 mainly 5 and 5e category cables were manufactured, in 2006 a tendency towards expansion of category 6 LAN cable production was observed.

What forecast can be made for the 2007 cable production growth rates? It is quite natural that the increase in the output of cables and wires depends on the total growth of the CIS and first of all Russian economies. However the economical development on the former Soviet Union territory is not always stable and is largely dependent on the variations in global prices of energy carriers, as well as on some political collisions. Nevertheless, reasoning from the dynamics of the national measures of the medium-term Russian economy development program it is safe to assume that in 2007 the growth rate of cable production volumes may reach 8–10 %.

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The dictionary is intended primarily for cable industry and power engineers, telecommunications technicians and specialists in other areas of electrical industry, as well as for all participants of the cable business.

The dictionary was compiled under the supervision of the prominent expert in cable engineering Dr I.B. Peshkov. Professional advice of the leading specialists in specific areas of cable and wire technology was used in the preparation of the dictionary.

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