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THE ARCTIC DEVELOPMENT IS NOT ONLY EXTRACTION OF MINERALS

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Russia was one of the first countries in the world which started the development of natural resources in the Arctic region. For over half of the century there has been a realization of mineral resource projects in Murmansk, Norilsk, Timan-Pechora, and Chukotka. Since the 1970's almost every month we have heard news about the Yamal Peninsula, which supplies more than 200 million tons of oil equivalents per year to the world markets.

However, access to the resources of the North requires huge efforts from the government planned for the long term perspective taking into account a wide range of issues - from financial and economic to social ones.

In addition to natural resources, ice and snow of the North still hide a lot of wealth, about which are known to few people. This region remains important for many Northern countries, including Russia. Russia has long been engaged in the study of this region. Russian coast-dwellers and explorers of the middle of the 16th century; the great Northern expedition of 1733-1742; Semyon Chelyuskin, Ferdinand Wrangel, Fyodor Matyushkin, Fyodor Litke, Stepan Makarov, and many other Russian researchers and explorers dedicated their entire life to the study of the Northern regions of the Russian land. Later, at the Soviet times, the study continued: the development of the Northern sea route started, the first polar station was established. The 1990's was notable for the reversal development in the Soviet experience. A lot seemed to be unnecessary, a lot was forgotten. Only in the 2000's there was a return of Russia to the Arctic zone.

But not only Russia is interested in expanding its influence in the Arctic. There are a lot of competitors of our country, and the Northern region becomes a new arena of confrontation between Russia and the West. Arctic treasure has become "a fortune cookie" for many hunters. Russia is developing a military infrastructure and Arctic group of forces to protect its territory in the Northern region. Improvement of the armed forces and the establishment of military bases, are regularly reported, but the Russian leadership does not want to make a testing weapon ground in the Arctic region.

The Arctic still hides huge undiscovered reserves of minerals. The Arctic attracts not only geologists, but also researchers of other scientific fields. The challenge faced by our country consists in research work in the Arctic zone. One could also mention the transport issue of the Arctic region. At Soviet times our country had a powerful icebreaker fleet and polar aviation, its Northern sea route was intensively used.

There is a strong believe that everything will be restored. The polar stations will be reconstructed; a great number of polar expeditions will be arranged and equipped. The Russian troops will provide protection for our sphere of influence. Our country should defend its rightful Arctic space. The Arctic is the area presenting a part of Russia's national interests and refusal from it would be regarded as a betrayal. The development and strengthening of Russian position in the Arctic is a priority program of our country.

СЕКЦИЯ 12. АРКТИКА И ЕЕ ОСВОЕНИЕ
(доклады на английском и немецком языках)

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GLOBAL WARMING AND THE ARCTIC
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Since the Arctic region is most sensitive environment to global warming, Arctic climatic changes often are considered as the indicator of this process.

Climate changes of the Arctic include temperature rise, reduction of the sea ice area and thickness, melting of the Greenland ice sheet. It is expected that the Arctic Ocean will begin to clear completely from ice cover from the summer to 2100. It is for the first time when ice cover reduction forecasts vary significantly and the following dates are specified: 2060-2080, 2030 and even 2016. Experts also warn about a danger of release of large methane volumes, due to permafrost thaw consisting of methane hydrate. The Arctic climate changes are regularly observed and generalized by IPCC Fourth Assessment Report and Arctic Climate Impact Assessment. U.S. National Oceanic and Atmospheric Administration update regularly Arctic Report Card. Specifically, reduction of the polar ice area is fixed. This indicator minimum was recorded in September, 2012 [1].

Table

*Annual Arctic ice minimum within the period of monitoring since 2000
(fixed annually in the middle of September)*

| Years | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Yearly ice minimum/ mln. Sq. km. | 6.0 | 6.6 | 5.6 | 6.0 | 5.8 | 5.3 | 5.8 | 4.2 | 4.6 | 5.1 | 4.6 | 4.3 | 3.4 | 5.1 | 5.0 | 4.4 |

Scientists are studying possible causative factors of Arctic global warming, such as direct changes related to greenhouse effect as well as indirect changes: unusual winds, temperature rise or water circulation change (for example, increase of warm fresh water inflow into the Arctic Ocean from the rivers). According to the Intergovernmental Panel