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Russian Arctic shelf mineral resource potential

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Geological data suggests that the Arctic Seabed contains up to 25% of the world's oil and natural gas reserves and other mineral resources which are being made more accessible by the receding polar ice caused by global warming [1].

Russian Arctic shelf mineral resource potential is characterized by a wide range of solid minerals. The zones feature large and unique onshore and offshore deposits of both placer and vein types. The major bedrock minerals on islands within the shelf's basins are metallic and include manganese, base metals, gold, minerals of the platinum group and rare metals. Non-metals including coal, barite, precious stones and others are also found here [2].

The major placer minerals near shore are gold and tin. There is also an abundance of placers of which diamonds and amber are economically important (Figure 1).

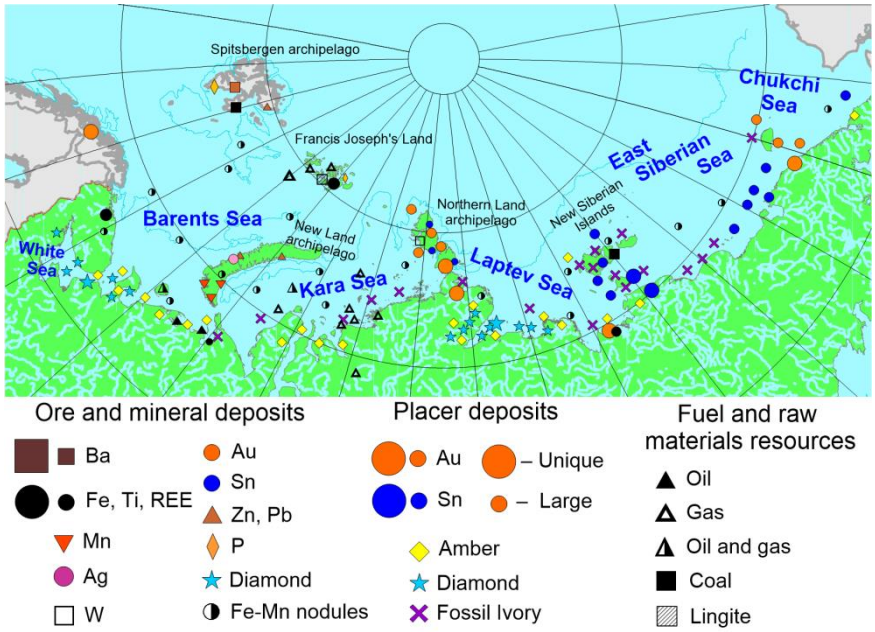

Figure 1: General overview of the solid mineral resources on the Russian Arctic shelf.

At present exploration of mineral deposits and placers on the Arctic shelf is practically nonexistent. Further large scale expansion of the raw mineral potential of the Russian shelf region is only possible with exploration and developing new methods and technologies.

The mineral resources of the Arctic shelf region of Russia are defined by the following:

an extremely wide range of useful minerals;

high yield placers in comparatively small areas;

an abundance of large and unique deposits;

numerous islands with high concentrations of various ores.

All these factors make the Arctic shelf the most important reserve of raw materials in the 21th century.

References:

[1] Kaminsky V et al. (2014) Arctic Ecology and Economy Magazine 3 (15): 52-61
[2] Smirnov A and Babaeva S (2015) In: Nearshore Underwater Mining: Critical Commodities for the Future: Abstracts UMC 2015, 27-30