

Title:**Shale Products – Production, Quality and Market Challenges**

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Different grades of shale oil products have been produced in Estonia since 1924. The type and quality of the products have been dictated by need and during 83 years there have been significant changes in need. Accordingly, the type and quality of the shale products has changed.

Before the Second World War, most of the crude shale oil was upgraded to motor fuels, including gasoline, which was widely used in Estonia and exported. After the war, inexpensive Russian gas and crude became available and more than half of produced shale oil was not upgraded into motor fuels but used as wood impregnation oil for railroad beams. Part of the oil was used as raw material for chemical intermediates, pure chemicals and industrial resins.

Today the majority of the shale products are sold on international markets as liquid fuels - mainly marine fuels and heating oils. Part of the crude shale oil is used for production of high grade electrode coke and chemicals. Although shale fuel oils are already well positioned on certain fuel markets, there are enough challenges for development. Shale fuels differ from conventional oils and a solid market strategy is needed for competing in the market. The right market sector selection enables one to take advantage of unique properties of shale oil.

As shale fuels produced from different sources of shale differ widely, quality unification and standardization is needed for shale products. Such a system will help new producers entrance to the market. It is recognized that every crude shale oil requires different ways of upgrading. Based on real experience from shale products marketing, the paper gives an overview of shale fuels quality, comparison with crude oil products, reviews upgrading options and finally gives suggestions for shale fuels standardization.

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