

EDITOR'S PAGE

OIL SHALE – GLOBAL SOLUTION OR PART OF THE PROBLEM?

Energy is invisible. We rarely notice or see it when we use it in our everyday life. But it is difficult to pay attention to anything else when we do not have the energy that we need. It drives economic growth all over the world, it gives us comfort and security. Energy is important. Energy has quickly become one of the key global challenges in the 21st century. Not only its core purpose but also its actual and potential side effects have achieved a considerable importance in decision-making processes. Envisioning global future we cannot ignore also political, environmental and social issues related to energy supply and consumption. Energy has impacts. Our decisions today will have long-term impact on the environment and society for generations to come. Therefore we have to ensure that our best efforts are made to guarantee a more efficient, more available, more competitive energy supply. We cannot afford energy at any cost. It means that we have to ensure that we take good care of the environment and society as well.



The global situation has changed, especially in energy markets. Local and separate energy markets have globally merged thanks to the advances in technology and facilitation of global trade. Economic development and population growth have driven the global demand for energy resources. It has triggered the growth of energy sources that has been driven by rise of oil price. Today oil prices are above 120 \$/bbl. It is quite a different world as compared with the situation just ten years ago when the oil price was around 20\$/bbl. That makes economically feasible and reasonable to produce energy from sources currently considered economically unattractive. Growth of prices has created global interest in oil shale resources for oil and power production. Until today oil shale has been used only in Estonia on an industrial scale.

Estonia has for a long time considered oil shale its unique and special resource and knowledge. It has been true for a long time. In Estonia, there are the biggest oil shale mines, power plants, shale oil production facilities. However, the situation is rapidly changing.

Not only in Estonia but all over the world there is growing interest to deploy oil shale resources. Oil shales are widely distributed around the world – more than 600 deposits are known, with resources of the associated shale oil totaling almost 500 billion tonnes, or approximately 3.2 trillion barrels. According to the data of the 27th International Geological Congress, the world oil shale resources in 1984 were approximately 11.5 trillion tonnes. That makes oil shale a large yet mostly untapped resource.

Almost all oil shale deposits differ in the composition and properties of organic and mineral parts. For this reason there is a need for specific solution for every type of oil shale. The results of scientific and applied research are somewhat different and not directly transferable to all oil shales. Besides, there are more general challenges ahead that when successfully solved can be applied to other solid fuels as well. Among such problems are questions how to make the solid residue from the process less hazardous for the environment and how to dispose of it in accordance with regulation, those related to CO₂ capture, optimization of boiler design for oil shale, slagging and corrosion of heating surface. The solutions can be applied and transferred to brown and hard coals as well.

For further improvement of oil shale competitiveness, it is also important to work out and to realize in production new methods of shale oil processing (extraction, hydrogenisation etc) to obtain more valuable products (motor fuels, chemicals). Studies and development must be directed to the improvement of production efficiency and protection of the environment in all stages of oil shale utilisation.

There is one more aspect of energy. Energy is infinite. Not in physical terms, but in terms of the power of human mind. Step by step be the advances of our horizon of knowledge and know-how locally and globally. There are big challenges between us today and the wider global use of oil shale resources in the future. It is our duty to develop the technologies that would allow us to use oil shale efficiently, sustainably and in an environment friendly way. Oil shale is a resource only in case we use it. Otherwise it is just a part of the bedrock. I believe that our energy is infinite.

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