

Estonian oil shale sector undergoing changes

By Janek Parkman

Oil shale, just like coal, is also a sedimentary rock the resources of which in the world are very vast. Still, compared to coal, the energetic value of oil shale is several times lower. Oil shale, just like coal, was used quite extensively in many countries of the world until the middle of last century. When oil and natural gas were widely taken into use the importance of coal in world energy decreased and the importance of oil shale disappeared almost completely. Today, the almost centennial use of oil shale has remained only in two countries of the world. These countries are China and Estonia.

In Estonia where there are no resources of oil, natural gas or coal either, the use of oil shale in the beginning of last century was the only possibility to cover domestic energy needs. During the time when Estonia while being one of the Soviet republics could freely use a part of the oil and natural gas of the whole Soviet Union, the importance of oil shale use decreased. As an independent state Estonia has to pay market price for import fuel and therefore domestic energy resources are increasingly more important. Today, oil shale is the most important energy source of Estonia and its importance increases in line with the worldwide price increase of fuels. In 2007, 19 million tons of oil shale was mined. Oil shale electricity covered more than 95% of Estonia's electric energy. Shale oil received from oil shale treatment covers 100% of Estonian boiler plant needs that operate on liquid fuel. Oil shale is also used as raw material for cement and chemical industries. All these products are also exported to other Baltic Sea countries.

Concern about greenhouse gases is diminishing the solid fossil fuels based energy production. The use of Estonian oil shale for power generation is diminishing for the same reason and by 2015 the production output of oil shale electricity will probably diminish twice. However, as the demand for liquid fuels is constantly high, Estonian manufacturers of shale oil are increasing their production outputs. If, 400 000 tons (2,5 mln bbl) of liquid fuel were manufactured from Estonian oil shale in 2007, then according to certain forecasts this output may reach up to 1,7 million tons (10,5 mln bbl) by 2015. This output would cover the whole Estonian need for liquid fuel, including the need for motor fuel.

The development strategy of oil shale up to year 2015 is currently in the legislative proceeding of the Estonian Parliament. This document contains political agreement on the estimated mining volumes of oil shale and trends of oil shale use. This will first of all set guidelines for the whole Estonian oil shale sector how the Estonian state and industry should reduce in cooperation the environmental effects of oil shale sector and effect on human

environment. Further appraisal of oil shale products is also a priority specified in the development plan that would still provide a bigger surplus value with a smaller volume of resource use. Technological innovations are considered that are necessary to be introduced both in oil shale mining and manufacture of oil shale products. Estonia is probably the only country in the world where the Parliament is devoting such great attention to oil shale as mineral resources and its use. However, this is understandable because oil shale has a unique role in Estonian economy.

Estonian oil shale manufacturers are also active in other countries besides Estonia where there is a wish to develop oil shale industry. Government owned power Company Eesti Energia AS is currently developing an oil shale mine in Jordan. Privately owned Viru Keemia Grupp AS is present in the Ukraine in the Boltysk oil shale deposit. Besides Estonia there are big oil shale resources along the Baltic Sea in Russia in the Leningrad oblast where shale oil production capacities existed up to 2004. Russia plans to revive the oil shale treatment in the Leningrad oblast and Viru Keemia Grupp AS hopes to contribute to it with its skills. In addition to the above mentioned, oil shale resources are being introduced in several countries around the globe, including USA, Australia, Canada and Brazil.

Maintaining the know-how of oil shale production and the existence of corresponding scientists and engineers creates an excellent possibility for Estonia to witness the rebirth of one industrial sector. At the same time the establishment of one heavy industry sector demands considerably more than the scientists and engineers of just one country could offer. With great probability the cooperation that is already taking place between the engineers and scientists of Estonia and other Baltic Sea countries will still reach to a completely new level. Leading mining engineers, chemists and power engineers of the whole world can exchange knowledge and experience so that everyone would benefit from it. At the same time the countries that develop the oil shale industry will ensure their energy security and attract huge investments in their economies.

Janek Parkman

Chairman of the Board

Viru Keemia Grupp AS

Estonia

