Oil Shale, 2005, Vol. 22, No. 3
Pp. 259-260
ISSN 0208-189X

https://doi.org/10.3176/oil.2005.3.01

EDITOR'S PAGE

OIL SHALE INDUSTRY IN ESTONIA AT A CROSSROADS

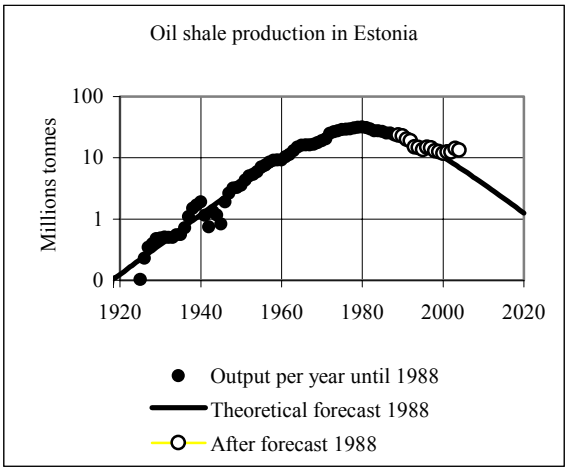
Mining and utilization of Estonian oil shale has lasted for about 90 years. In 2005 the billionth tonne of oil shale was extracted. About 800 million tonnes have remained in remnants of the mined-out land. It means that 1.8 billion tonnes of Estonian deposit have been utilized. Almost 5 billion tonnes of the resources have been entered into the register of state mineral resources, including 1.1 billion tonnes of mineable reserve. A half of the mineable reserve lies in mines where oil shale is extracted to be utilized for producing electricity. Oil shale mineability is evaluated basing on the economy of power production (oil shale *vs*. hard coal). Energy rating of bed – the criterion of bed mineability – must exceed 35 GJ/m^2.

In 1988 I forecasted a decrease in production of oil shale for firing power plants as it really happened till 2000*. A forecast made in 2000 about closing shale oil industry was not right. Oil industry still consumes up to 20% of oil shale. Therefore, the capacity of oil shale mining has not decreased since 2000.

According to out newest calculations, production of shale oil is economically justified up to crude oil price 30USD bbl. Crude oil has cost more for a long time already, and manufacturers have started to present mine claims to develop new mining areas in the western part of the deposit.

Old adits excavated by researchers of Sillamäe uranium deposit half a century ago were discovered recently. E. Reinsalu has arrived to study whether uranium would be the next mineral resource in Estonian power industry

* *Reinsalu, E.* Mathematical models for predicting oil shale production. Oil Shale, 1988. Vol. 5, No. 2. P. 122–128.



This action is justified from the economical point of view as, according to our statement, a bed is mineable when its energy yield exceeds 30 GJ/m^2. Therefore, the scenario according to which, after reduction of oil shale utilization in power industry, oil production as a more specific application of oil shale will be restored is likely to become true.

However, there are some obstacles in this way.

First, nature protection. 1.3 billion tonnes of oil shale resources lie underneath nature reservations. Large reservations are located just in this part of the deposit which are of interest to oil industry. Besides, 0.2 billion tonnes lie under or near to densely populated areas.

Second, oil manufacturers have not made large-scale tests on units designed for processing run-off-mine oil shale yet. Production of oil from oil shale concentrate is not economically profitable. Besides, there are no factual data about environmental riskiness of solid wastes of processing run-off-mine oil shale.

Third, the capacity of Estonian oil industry could not be large, not over 25 thousand bbl/d, a number not attracting oil companies to invest in an area of high environmental riskiness.

Exhausted area of oil shale deposit makes up about 1% of Estonia's area from which mined-out area occupies about 300 km^2 and surface-mine area about 120 km^2. Nature of the mined-out land has been restored and forested. A new landscape has been formed – water bodies, hills, roads – they all have been taken into use in both everyday life and tourism. 170 million m^3 of water have accumulated in closed mines. In a couple of years this water has become drinkable again, making up a great share of Estonia's water resources. Four papers of this issue deal with the problems of mined-out land in Estonia.

To sum up: while at present a balance between oil shale production and environment has been achieved in Estonia, can the new development scenario prove its accordance to modern requirements of environment protection?

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