

OIL SHALE INDUSTRY AND SUSTAINABILITY – GOVERNANCE THROUGH DIALOGUE

Modern society is limited with mineral resources. Practically all the energy consumed by mankind is ultimately used for the destruction of the natural environment and production of waste for the sake of human comfort. On the Rio de Janeiro Earth Summit in 1992, in which I had the honor to participate, an old-time slogan was promoted: “Think globally, act locally”. It foresees the dynamic conception of economic and social development with the changes for a more equal division of resources between the states and their more efficient use within the states. Sustainability is based on the reforms of instruments and institutions, which include technical, administrative, economic and environmental measures. This means that sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are in harmony and enhance both current and future policy, meet human needs and aspirations. However, sometimes the idea of sustainable development has been sarcastically explained as follows: poorer states have to begin to pay from their poverty the disability of rich states to preserve their riches.

Abba Eban (1915–2002), politician of Israel, stated with irony: “History teaches that people and states start to behave reasonably not until they have exhausted other possibilities”. However, the other possibilities will soon be exhausted because the number of inhabitants on our planet increases by 85 million people annually, while at the same time the reserves of clean water and fossil fuels decrease. To increase the amount of food becomes ever more questionable; already at the present time there are some 1225 million people living in absolute poverty. About 10% of land is polluted with waste generated by people, and the amount of waste is increasing due to the use of fuels with low calorific value. In view of this, detailed scientific investigations and technological experiments are needed to take oil shale into use.

During the last fifty years, power production in Estonia has almost fully been based on domestic oil shale. This has resulted in serious environmental pollution. Over 90% of the water consumed in Estonia is used in the oil shale mining and consumption. About 97% of air pollution and 86% of total waste come from the power industry. Sustainable development depends highly on new technologies, which need not only more efficient oil shale utilization and higher thermal efficiencies but result also in much less atmospheric emissions and wastes. During the past years, we have achieved great success in Estonia. Using the circulation fluidized bed combustion technology, two 215 MW energy blocks started to operate in Narva Power Plants, which led

to a significant decrease of SO₂ and CO₂ emissions. Now the other task is to reduce the negative environment impact due to hydraulic transport of ash to the ash fields and release of highly alkaline ash field water into the surroundings.

Oil shales are widely distributed all over the world; more than 600 deposits are known, and their prospective resources are estimated to be over 500 million tonnes. However, there is no unanimously accepted lower limit of organic matter content for oil shales and it is practically impossible to find two analogous oil shales, mainly because of their different formation conditions and postsedimentological alternations. Besides, the composition and quality of oil shale may vary within the limits of one deposit. The bedding and mining conditions of different deposits are also very variable. In view of this, in the coming years the exchange of information obtained through the study of oil shale will rapidly gain in importance, and we hope that our journal „Oil Shale” will greatly contribute to this process.

The journal „Oil Shale” was founded in 1984. I had the luck to be one of the initiators of the idea and implementers of the project. During more than 20 years the journal has seen worse and better days depending on the events and developments related to the oil shale. Now, when it is already difficult to prognosticate the growth of the world oil reserves and decrease of the price of oil, the interest in the investigation and utilization of oil shale will definitely increase. All this calls for cardinal rearrangements of mining technology and environment safe treatment of the obtained raw material. Earlier oil shale as a cheap raw material was primarily used in the power engineering. To date, the production of oil shale oil, which already at the present time can successfully compete with oil products, is obtaining ever-growing significance.

During the last 300 years, economy and population in the world have grown exponentially and, therefore, the illusion of environmental stability should be rejected. Human development at the current rate will continue to increase environmental degradation. According to the immutable laws of the biosphere, the level of pressure on nature must be limited as soon as possible to all levels of our existence: local, regional and global. This means that sustainable development must turn from mere talk to the reality; oil shale mining and processing must be carried out at the highest technological level.

On behalf of the editorial and advisory boards I suggest that the authors and subscribers of the journal should follow in the decision-making processes the best human ethic values in order to create a new lifestyle, which means a better quality of life as well as ecologically secure living environment.

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of the World Innovation Foundation