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EDITOR'S PAGE

AN OUTSIDE ESTONIAN'S VIEW OF ESTONIA'S OIL SHALE

Estonian oil shale is our Country's largest mineral resource. It can provide a stable economic foundation to its largest natural resource - its people. That is why I volunteer my time and effort to contribute to this industry. I hope that in some small way, the resources I contribute will keep this industry working and available for the people of Estonia.

Even though I had never set foot in Estonia until three years ago, my parents gave me birth as an Estonian and taught me how to be an Estonian. I never had the chance to attend Estonian school. What I know about my Country, my parents taught me. They taught me some language, some culture and a lot of work ethic. I have lived my life working to help Estonia and to keep alive its culture outside of Estonia. With its newly won independence, I searched for ways in which to help my native Country become more independent and economically stable. Having a technical background in energy resources, and having had experience in developing oil shale resources in the U.S., it was certainly fate that I should make my contribution by helping in the oil shale industry.

Currently I am contributing time to editing technical articles written in English for the Journal ***Oil Shale****. This will help to establish international credibility for the Estonian oil shale industry. I am also interested in getting more directly involved in the planning and development of additional facilities for oil shale utilization in Estonia. One of the new ideas I have is explained later in this article. Unfortunately, there are always more ideas than time to implement them. At least this work allows me to be an Estonian and use all of my acquired skills to help Estonia.*

My efforts are made in memory of my parents, Ervin Sööt and Salme (Teller) Sööt. My father was a civil/structural engineer, not a chemical engineer as I am. But I remember him telling me a little about the Estonian oil shale when I was a child. One story I remember was that he claimed that during World War II the Germans were interested in obtaining lubricating oils from the Estonian oil shale for their submarines. This interest was sparked by the fact that this oil, unlike petroleum-based oils, was more dense than water. The lubricating oil from oil shale would not come to the surface of the ocean if there were any leaks from the submarine. Listening to my father's stories, little did I know that I would become so directly involved in this resource. And little did I know how that story would provide the subtle basis for future Estonian oil shale development.

Estonia's current oil shale industry must use innovative thinking in developing the oil shale, considering its special properties - like its density or its special chemical characteristics. New and unique applications for this resource will make it much more valuable. Power generation is the largest and most important use, but other uses must be developed in order to utilize this resource most effectively. A variety of specialty chemicals can be made from this raw material. Fuel gases produced from oil shale might be used by other industries and commercial facilities. Maybe even production of some fuels for automobiles should be considered.

The size of the oil shale resource is important because it can provide the underpinnings for the economy if it is used correctly. If it is misused, it can hurt the economy and the environment. Oil shale is of such vital interest, it is imperative that this resource be used, and that it be used wisely.

The basic use for the oil shale is power generation. That should continue since it provides a large asset and cash flow potential for the economy. With the power plant capacity in place (over 3,400 megawatts) these plants are generating over 17 billion kilowatt-hours of electricity[1]. They have the potential to generate almost 50 % more than this level. If one were to value this generation at prices which now exist in other countries, this electricity would be worth 4 to 10 billion kroons per year. That makes this resource worth 4,000 to 12,000 kroons per year for each and every Estonian who now lives in Estonia*[2]. That does not mean that you can convert this into cash for everybody, but it provides a glimpse of the enormity of this resource.*

An energy resource such as oil shale does not only provide economic freedoms, it can help with political freedoms as well. Energy is the largest component of many economies around the world. The largest imported commodity in the U.S. and Japan is energy. Payments for this commodity are what create the trade deficit that Americans are continually concerned with. It was undoubtedly the main reason for the U.S. military action in Kuwait - - trying to keep America's access to foreign oil undisturbed. Any country, such as Estonia, that can develop an indigenous energy resource and can be energy independent, also builds for itself the foundation for independence from outside political influences.

One way of striving for more energy independence is to try to develop a fuel which would displace gasoline in cars. That way Estonians would not have to import this fuel resource. The car fuel I would propose is not necessarily gasoline, but compressed fuel gas. It is unlikely that gasoline from oil shale can be produced economically. There is considerable interest world-wide in converting cars to run on compressed gaseous fuels. New Zealand has large numbers of cars running on compressed natural gas. If an acceptable fuel gas could be produced from oil shale, then this could be compressed and used to fuel cars and trucks. In other countries, this approach has provided car fuel which is cheaper than gasoline. It is also better for the environment, with much less hydrocarbon emissions than gasoline. Existing cars can be

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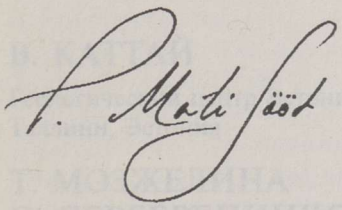
[1] Estonian Oil Shale. Informare Ltd., 1991. P. 9.

[2] European industrial electricity prices in April, 1994 varied from $0.0388/kWh in Sweden to $0.101/kWh in Germany. The U.S.A. price was $0.079/kWh. - Ursino, John. Free Wheeling in a Deregulated Market. Chemical Engineering. January, 1995. P. 31.

converted to compressed gas fuels. New cars could have the conversion put on before it is put into use. The cars could even be dual-fuel: gasoline and compressed gas. Although converting old cars to compressed gas costs money, the engines would last longer with this cleaner fuel and be cheaper to operate. In a small country the size of Estonia, it should not be extremely difficult to provide the fueling stations for the compressed gas. There is no guarantee that the right gaseous fuel can be made from oil shale, but this is the type of unique ideas which need to considered, and some research should be performed. It may provide a new way towards energy independence for Estonia.

Estonians must appreciate this resource and what it can do for them. From what little I know, oil shale is in a difficult geographic area. But Estonians should never abandon this location, if not for ethnic reasons, then for the large economic value that it represents.

As an individual, my efforts are not very large. Hopefully, they can complement the efforts of others inside of Estonia already at work in this field. And they can be used as a model for Estonians outside their homeland to make a contribution to this and other industries within Estonia. We all need to work together in building a strong economic foundation for a free and independent Estonia.



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February 21, 1995

Dr. Peet Mati Sööt lives and works in the U.S.A. A year ago he volunteered the journal *Oil Shale* help for editing papers written in English. This letter presents his ideas about the present and future of Estonian oil shale.

We express our deep gratitude to **Dr. P. M. Sööt** for his great help.

Oil Shale