

## 16.2 **Reuse of spent oil shale: A critical review**

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The beneficial reuse of waste streams from oil shale mining and processing has been a topic of interest for as long as these kinds of operations have existed. In Estonia during the 1980's, oil shale combustion ash was primarily used to make concrete-like blocks. The impact of ash reuse on the environment was not considered, since at the time the country was a command economy and shortages of traditional building materials were all too common. Today we proudly announce that most of the waste generated by the solid heat carrier shale oil extraction process is "reused" to pre-heat raw oil shale making the process more energy efficient. Unfortunately, because spent oil shale and oil shale combustion ash are classified as hazardous waste by the European Union, only the heat present in spent shale can be reused and the waste heaps of the actual material residue continue to accumulate. The rationales for classifying these wastes as hazardous are completely different, but the result is the same – there are severe restrictions regarding their disposal and reuse. So, are there any technologies that allow for effective recycling of retort and combustion process residues? What are the products and where are the markets? We have assessed the ash-like residue generated by the solid heat carrier retort process to determine if it has greater potential for reuse relative to oil shale residues generated by other processes, which are generally higher in semicoke. We have also analyzed the attempts to reuse spent oil shale in Estonia and will present a summary of this analysis.