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*Did You know that
oil shale and jelly lollies both share
a common origin in algae?*

Estonia's oil shale or kukersite was created 450 to 460 million years ago by algae deposited at the bottom of a shallow sea.

Tiesitkö, että öljyliusketta ja marmeladimakeisia yhdistää se, että molemmat ovat saaneet alkunsa levästä?

Viron öljyliuske eli kukersiitti on muodostunut lähes 450–460 miljoonaa vuotta sitten matalaan merenpohjaan kerrostuneista levistä.

Знаете ли вы, что мармелад и сланец происходят из водорослей?

Эстонский сланец или кукерсит образовался 450-460 миллионов лет тому назад из водорослей, осевших на морском мелководье.

Kas teadsid, et põlevkivi ja marmelaadikomme ühendab see, et mõlemad on saanud alguse vetikatest?

Eesti põlevkivi ehk kukersiit on tekkinud ligi 450-460 miljonit aastat tagasi madala mere põhja settinud vetikatest.



Transporting oil shale under various circumstances requires large, robust machinery. So, for instance, Estonian oil shale pits employ dump trucks with average load bearing capacities of 55 tonnes. Pictured is one such BelAZ mining dump truck.



After production, former oil shale production areas are landscaped and planted with forest. These industries may be also assigned a new use: for example, 2015 will see the former Aidu pit area unveiled as a rowing canal – 2.3 kilometres long, 162 metres wide and 3.5 metres deep – that meets international competition requirements.



The Estonian state is the owner of the oil shale deposits and is paid by the company for mining it. Owned by the state, Eesti Energia mines on average 16 to 18 million tonnes of oil shale a year, a contribution of over 700 million euros to the national GDP.



In production, 1 tonne of oil shale yields 850 kWh of electricity or 125 kilograms of shale oil or 35 Nm³ of distilled gas. The output from the Estonia power plant, amounting to approximately 180 million tonnes of oil shale over 40 years, is enough to power a million light bulbs for almost 140 years.



The Eesti and Balti power plants in Narva are the world's most powerful power plants to run on oil shale! From the deep mines (Estonia) and surface mines (Narva) of the world's biggest oil shale processing company, Eesti Energia, oil shale moves on to the oil shale industry and power plants. Pictured is Estonia's largest energy complex, located in Ida-Viru County.



The machinery used for mining oil shale is unique and massive. For instance, two 2000-tonne walking excavators – “Aidu Pääsuke” (“Aidu Swallow”) (pictured) and “Aidu Sookurg” (“Aidu Crane”) – have gone down in the annals of technology, the operations to re-locate them from the Aidu pit to the Narva pit being unique in Europe in terms of their scale.



Oil shale plays a central role in the production of liquid fuels and electricity in Estonia; however, it is also an important raw material for the chemical industry. For example, a tiny drop of shale oil is also included amongst the ingredients of the perfume Chanel No. 5. In Estonia, however, shale oil is mostly used for heating boiler plants or for naval fuel. Pictured is Eesti Energia Oil Industry.



The Viru deep mine, where mining ended in 2013, was the last in Estonia to have used bogies and an underground railway, with miners travelling underground by cable car.



The world's biggest oil shale processing company is located in Estonia; however, the most extensive oil shale deposits are in the United States, China, Russia, Israel, Jordan, Brazil and Morocco. Estonia holds just 0.4% of the world's entire oil shale reserves yet its knowledge and skills are also being applied to oil shale deposits in the United States and Jordan. Pictured are Eesti Energia's oil shale deposits in Utah in the United States.



As a by-product, the oil shale industry generates oil-shale ash, which is mostly used in construction and in the production of ash blocks but also as a mass stabiliser in soil under roads or as a fertiliser in agriculture. Oil-shale ash from Eesti Energia's Balti power plant has been used in construction for over half a century, thereby increasing the value derived from the oil shale industry.



An average of 9 to 13 million tonnes of oil shale annually, that is, an average of 300 to 400 rail car loads daily, are transported to the power plants in Narva. All together, the power plant receives enough oil shale to fill a train 3,500 kilometres long, equal to the travel distance from Tallinn to Barcelona.