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DIOXIN EMISSION FROM TWO OIL SHALE FIRED POWER PLANTS IN ESTONIA

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It should be noted that the European Dioxin Inventory did not include any measurements of air emission from sources in Estonia. As real dioxin emissions measurements in Estonia were highly needed, dioxin emissions from four oil shale-fired boilers at two power plants (Balti PP and Eesti PP) located in North-East Estonia were measured on March 3–8, 2003. Danish Cooperation for Environment in Eastern Europe (DANCEE) sponsored the project: "Dioxin Emission from Oil Shale Fired Power Plants in Estonia", and dk-TEKNIK ENERGY & ENVIRONMENT (now FORCE Technology) was responsible for the measurements, which where conducted in cooperation with the Estonian Environmental Research Centre (EERC) in Tallinn.

All the measured concentrations of dioxins emitted from the two power plants are very low owing to highly efficient combustion of oil shale in the furnaces at very high temperature, effective turbulence and long retention time. The total annual emission of dioxins from oil shale-fired power plants to the air is estimated to be 160 to 300 mg I-TEQ, which is more than ten times below the previous estimations. The total annual emission of dioxins with ashes is considered to be very close to zero, however, due to the periods of unstable combustion conditions, it would be higher, though estimated to be less than 1 g.

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