

SESSION 6

Auditing mining- Estonian experiences

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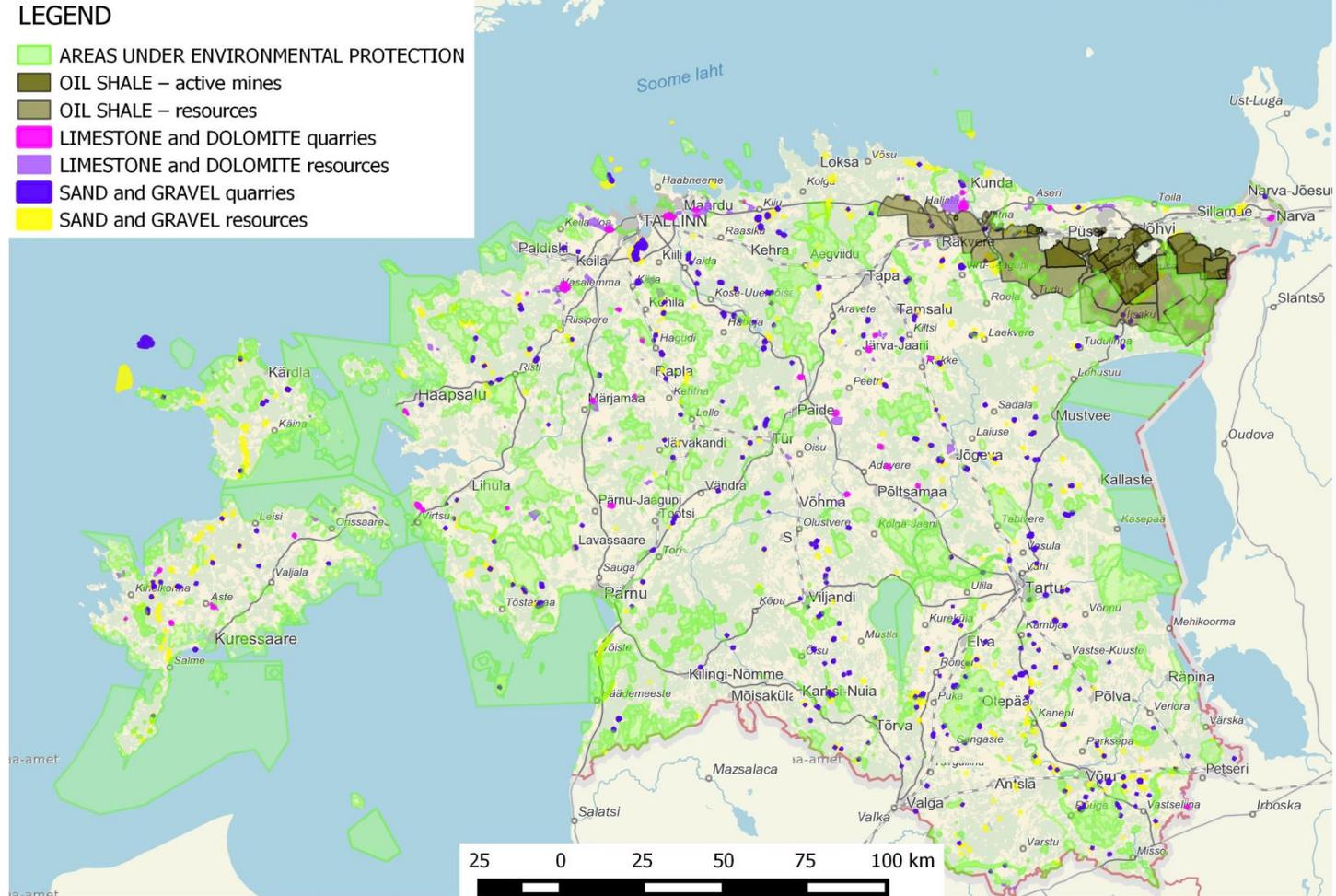
Overview

- Mining in Estonia
- Problems in Estonian mining sector
- Governance methods of mining sector
- Short introduction of audits of National Audit Office of Estonia in the field of mining

Mining in Estonia

- Approximately 15 million tons of commercial **oil shale** is excavated yearly, loss from excavation is approximately 4 million tons yearly. Used for production of electricity, heat, shale oil and other chemical products. 90% of electricity in Estonia is produced from oil shale.
- The excavation rate of **peat** is 1 million tons of peat per year while the total excavation area is 20 000 ha in Estonia. Peat is mainly used as growing surface in horticulture or as an energy source. Estonia is among the top peat producers globally.
- 1,5 millions m³ of **limestone** and 0,5 millions m³ of **dolomite** was excavated in 2010. 1,8 millions m³ **sand** and 1,4 millions m³ of **gravel** was excavated in 2010. Used mainly in construction including road construction.

Existing mines and quarries and active stocks of oil shale, limestone, gravel and sand



Main problems and environmental impacts of Estonian mining sector

- Deterioration of quality of surface water and ground water;
- decline of groundwater levels (dry wells);
- large quantities of oil-shale waste;
- dust emissions;
- noise;
- degradation of quality of local roads;
- visual pollution if the quarries are not fixed up after mining;
- depletion of natural resources;
- impact to human health;
- disturbance to natural environment;
- reduction of biodiversity.

Main governance methods for mining in Estonia

- Legislation,
- Development plans for excavation of oil shale, peat and minerals for construction materials
- Permits for geological survey, mining, water extraction, waste generation or IPPC permits (integrated environmental permit)
- Environmental Impact Assessment (EIA) and Strategic Impact Assessment (SEA)
- Resource and pollution charges
- Supervision

Role of National Audit Office

- Analyze whether the state's governance methods for mining ensure that the actions of the mining companies take into account:
 - welfare of local inhabitants,
 - environmental protection principles,
 - principles of sustainable use of mineral materials.
- Analyze whether the state receives correct amount of revenues from the mining and use of mineral materials.

Audit: Exploitation of peat resources, 2005

The aim - to assess whether the state had ensured sustainable use of peat resources.

The scope - state activities in planning the use and managing the extraction of peat resource:

- planning the use of reserves,
- charging for peat extraction,
- arrangement of EIA,
- reclamation of harvested areas.



Main conclusions of the audit - peat is not used in a sustainable way in Estonia

- The State has to decide whether peat is renewable (lasts for ever) or non-renewable (lasts for as long as decision maker decides).
- The requirement for conducting EIA has to be expanded to involve also the areas smaller than 150 ha.
- There is a need to develop principles for calculating the taxation base for peat extraction.
- The State has to fix up the abandoned harvesting areas and ensure that companies carry out the reclamation projects after harvesting.

National arrangement of mining mineral resources used in construction (2009)

- The aim was to assess whether the state activities will ensure mining mineral materials in sustainable way.
- The scope - state activities in planning the use and managing the extraction of mineral resources and supervision:
 - planning the use of resources
 - charging for mineral materials
 - arrangement of EIA
 - reclamation of mining sites
 - arrangement of supervision



Main conclusions of the audit

- The state had not arranged the use of mineral resources in a sustainable way:
 - No annual rates of use for mining limestone, dolomite, sand and gravel
 - Opening new quarries is guided by the interests of the mining companies
 - Supervision is inadequate
- Mining was not organized in environmental friendly way and did not take into account the interests of local inhabitants. Old quarries were not fixed up. Many companies had mined resources more than their permits allowed.

States role in development the oil shale exploitation (2014)

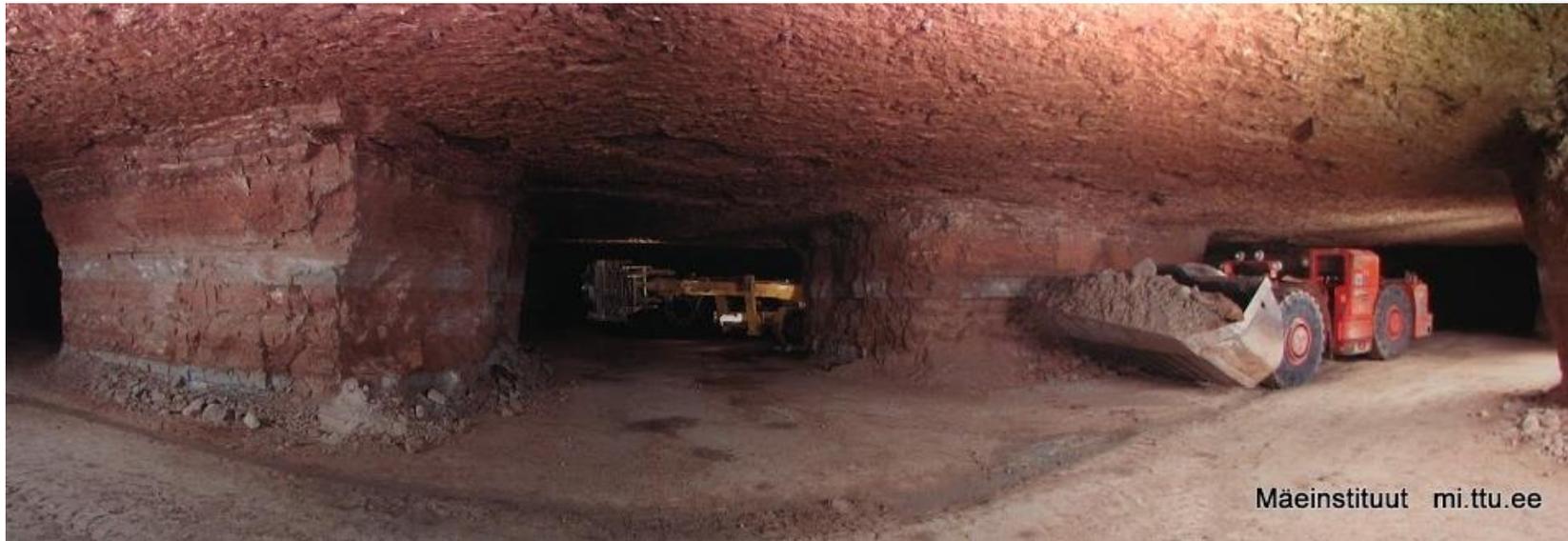
- The aim was to assess weather the state activities will ensure sustainable planning of the use of oil shale, economic excavation and fair charges to the state from the use of oil shale.
- The scope - state activities in planning the use and managing the extraction of oil shale:
 - Fulfillment of the objectives of oil-shale development plan
 - Management of the oil-shale stocks
 - Charging for oil shale excavation
 - Environmental, health and socio-economic impacts of oil shale industry

Main conclusions of the audit

- Environmental impact of mining oil-shale had not declined, efficiency of mining and the use of oil shale had not increased over the last years.
- Environmental, health and socio-economic impacts were not properly evaluated by the state.
- Environmental charges had not motivated companies to pollute less and use more economically the oil-shale resources.



Oil shale mining



Auditing oil shale wastes (ongoing)

- Amounts of oil shale wastes (mining residues, ash, semi-coke, other chemical wastes) are huge.
- Estonia is the biggest waste generator per capita in European Union due to oil shale use.
- Audit evaluates environmental impact of oil-shale wastes; record-keeping of the waste amounts; mechanisms for fixing up the waste facilities in the future; reduce and re-use of the oil-shale wastes, closing down the old waste facilities.

Oil shale waste



Pictures from www.delfi.ee and www.pohjarannik.ee

Thank you for your attention!

Questions?

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