

POTENTIAL OF BIOMASS FUELS TO SUBSTITUTE FOR OIL SHALE IN ENERGY BALANCE IN ESTONIAN ENERGY SECTOR

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Oil shale gained its leading role in the energy balance of Estonia already before the Second World War – in 1934 the share of oil shale in total industrial consumption was 56.8%. Though the total energy consumption has grown since that time remarkably, the share of oil shale has remained the same – in 2003 it was 60%. In the modern world environmental protection issues substantially influence the energy sector. Estonia has also ratified several international conventions – United Nations Framework Convention on Climate Change in 1994, Kyoto Protocol to the United Nations Framework Convention on Climate Change in 2002 and Convention on Long-range Transboundary Air Pollution and the Protocol to the Convention in 2000. In accordance with these agreements Estonia has declared the commitment to increase the share of renewables in electricity production up to 5.1% by the year 2012. More extensive utilization of biofuels for energy production has been pointed out also by the Long-term Development Plan for the Estonian Fuel and Energy Sector and the Estonian Forestry Development Programme 2001–2010. Successful implementation of these programmes will decrease the consumption of oil shale and the level of pollution. Based on the presented data it was concluded that though there is the huge unutilized potential of biofuels and peat, these resources are limited and can cover probably less than 20% of the energy need which is today covered by oil shale based fuels. It means that for the coming decades oil shale will remain the main fuel for electricity production, and the renewable biofuels only will support the decentralization of electricity production in rural areas.

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