

Compilation of plans to counteract the global warming

- 1. oxidizing kerogen shales (dozens of millions of tons) in the waste piles of the former phosphorite open pit;
- 2. the quarry where limestone rock is extracted and crushed;
- 3. sewage treatment plants of the town and sludge reservoirs;
- 4. disposal area for municipal wastes of the city of Tallinn built at the waste piles of the phosphorite open pit;
- 5. organic waste (poultry manure) of the large poultry plant;
- 6. nearby farms;
- 7. Tallinn – St. Petersburg highway;
- 8. Maardu lake;
- 9. bitumen manufacture;
- 10. road- and railway transport;
- 11. oil products terminals, gas stations and their access ways;
- 12. coal- and fertilizer terminals and terminals for other goods (incl. chemical) in the seaport of Muuga and their road- and railway access ways.



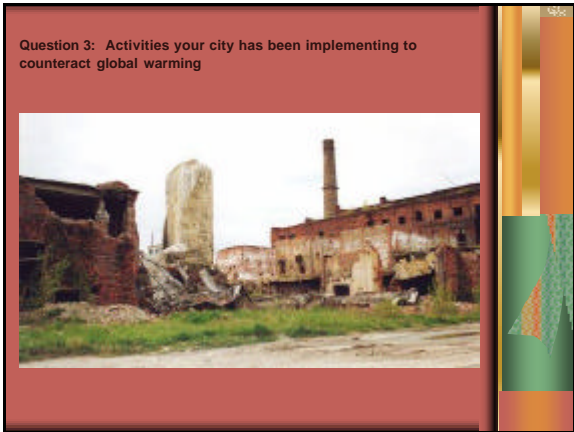
Question 2: Main Basic policy and/or working plan for global warming countermeasures

- 1. The main reasons or factors that have caused the emergence (in the beginning of the 80-ies) of the policy of environmental improvement of the town of Maardu and first of all – of its air pollution control (see 1, 3 below) lie in the fact of massive, complex and long-term contamination of air, water and soil by mining processing and chemical works of the PA Estonsfort industrial complex. Besides of mineral fertilizers, it produced sodium silicofluoride, fine colloidal silica and ion exchange resins for the nuclear industry.
- 2. What concerns the policy of controlling the greenhouse emissions today within the boundaries of the territory of the town of Maardu and its adjacent area, the main line of conduct and the planned measures to prevent the global warming consist in examination and analysis of the existent sources of emissions of greenhouse gases to determine their scale, levels and significance and to assess technological and economic feasibility and capabilities to control them.
- 3. The possibilities of large-scale countermeasures against greenhouse emissions, within the framework of legislative authority of the municipal government on the territory of the town, are rather limited due to economic and strategic value of certain industrial objects and their activities – e.g. large seaport of Muuga, Iru Thermal Power Plant, oil terminals, road- and railway transportation of transit goods. Activities of these objects are of vital importance to the whole country.



Question 3: Activities your city has been implementing to counteract global warming

- 1. In the 80-ies of the last century following requirements of Estonian Government:
- 2. has developed and implemented new, fire-proof technology of mining works at the waste piles of the phosphorite open pit that made possible to stop completely the massive fires (about 10% of the waste pit area was burning) and emission of combustion gases from burning dictyonema shales at the waste piles of the open pit;
- 3. has developed and implemented new technology of sulfuric acid production that have reduced drastically the atmospheric emissions;
- 4. has improved the technology of production of mineral fertilizers.
- 5. From the beginning of the 1990-ies, according to the decision of the Government of Estonia, the productional activity of the mining-, processing- and chemical works of Estonsfort, has been completely terminated at the territory of the town, due to the fact that this industrial complex has polluted the atmosphere with the following emissions:
- 6. CO, CO₂, SO₂, radon gas, methane gas, hydrogen sulphide, certain polycyclic hydrocarbons (PCH), including benzopyrene (waste piles of the phosphorite open pit);
- 7. SO₂, mixed acid (sulfuric and nitric) and high-density metals (sulphuric acid production);
- 8. SO₂, CO₂, benzopyrene, fly ash and high-density metals (Thermal Power Plant of PA Estonsfort);
- 9. fluorous-, chlorous- and sulfuric compounds and mineral dust from mineral fertilizers (chemical production), etc.



Question 3: Activities your city has been implementing to counteract global warming

- 1. At the waste piles of the phosphorite open pit the complete forest engineering recultivation has been carried out, and as a result – the territory of about 10 sq.km is now covered with full-bodied forest.
- 2. At Iru Thermal Power Plant that is situated on the territory of the town of Maardu, but rather near to the dwelling areas of the city of Tallinn, the process of reconstruction has began and it's still going on. This modernization has allowed to reduce drastically the amount of gases and solid aerosols: sulfur dioxide gas (SO₂), carbon soot, ashes, metals, benzopyrene and other cancerogenic substances by means of partial or full transfer from heavy fuel oil to natural gas.
- 3. The programme of the ecologically sustainable development of Maardu – „Maardu Agenda-21” has been elaborated and it shall remain in force till 2015.
- 4. At the disposal area for municipal wastes of the city of Tallinn, near Maardu, the technology of collecting methane and its use as a combustible fuel for heating the nearby dwellings has been implemented.

Question 3: Activities your city has been implementing to counteract global warming



Question 4: Education of citizens about global warming, and collaboration with private businesses and citizens groups

- 1. The education of citizens, specialists, experts and politicians have been carried out since the 1980-ies and is effected today in the form of publishing the correspondent ecological, technological, economic, etc. information in local and central newspapers, academic magazines, collections of scientific papers and public speaking at various international conferences and symposia
- 2. Private businesses either have participated or is participating in utilization of accumulated wastes, like glauconitic sandstone, quartzitic floating sand and rock refuse in civil construction, in reclaiming and cleaning of the territories of Estonfosforit industrial complex, in creating new enterprises, like oil products- and general cargo terminals, etc.

Question 4: Education of citizens about global warming, and collaboration with private businesses and citizens groups



Question 5: Solutions, concerning environmental protection in Maardu

- 1. The major topical issue concerning the environmental protection in the region of the town of Maardu, and in the first place – control of air pollution, is to organize the integrated system of monitoring in order to ensure ecological and physical safety of the population and of the civil and other objects.
- 2. Main sources (or clusters of sources) of environmental and physical risks in the region of the town of Maardu are:
 - 1. Maardu seaport with its system of terminals;
 - 2. railway with flow of tank-cars with oil products;
 - 3. road transport flow on the highway Tallinn – St. Petersburg;
 - 4. Iru Thermal Power Plant;
 - 5. oil terminals, gas stations and production of bitumen;
 - 6. poultry plant;
 - 7. territories of the former PA Estonfosforit industrial complex with their post-technological processes.

Thank
You
for the
attention!

