

Nuclear applications for the treatment of flue gases

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ATOMS IN INDUSTRY

Radiation Technology for Development

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Why the atmosphere is important ?



Mars
-53°C



Venus
450°C



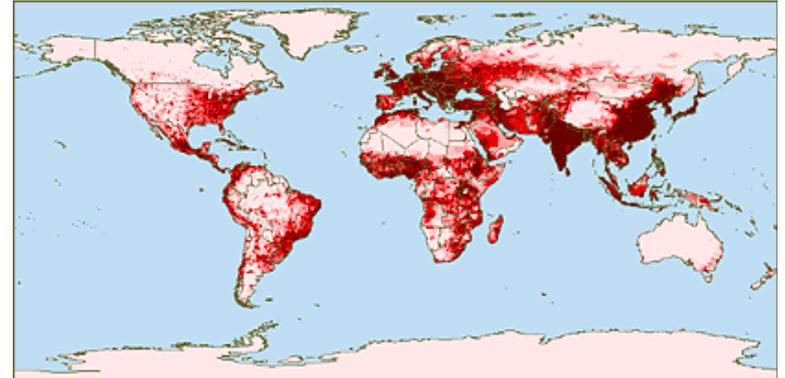
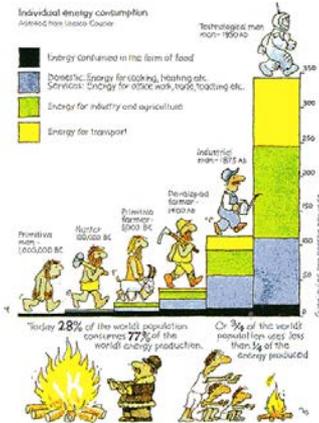
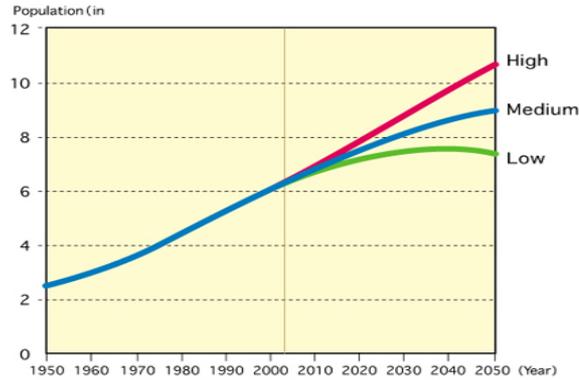
Earth
13°C



Big cities ! Big nations !

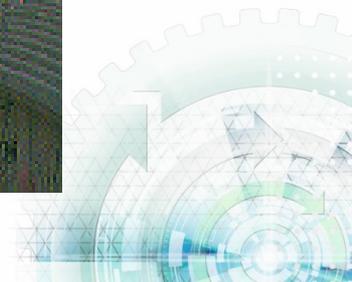
Needs for electricity!

Figure 1 United Nations World Population Projections, 1950-2050
Source: World Population Prospects



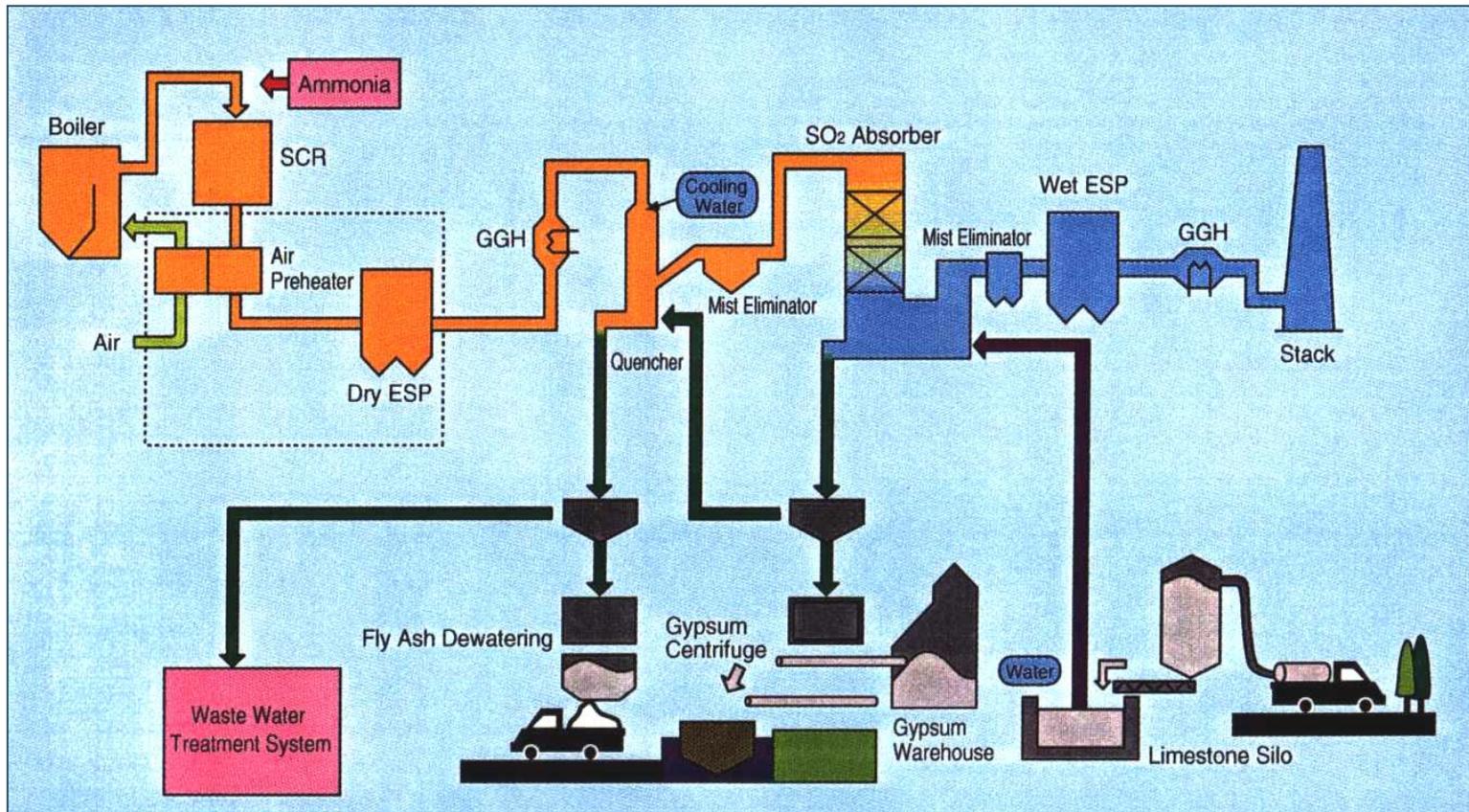
Fossil fuels

- main source of electricity

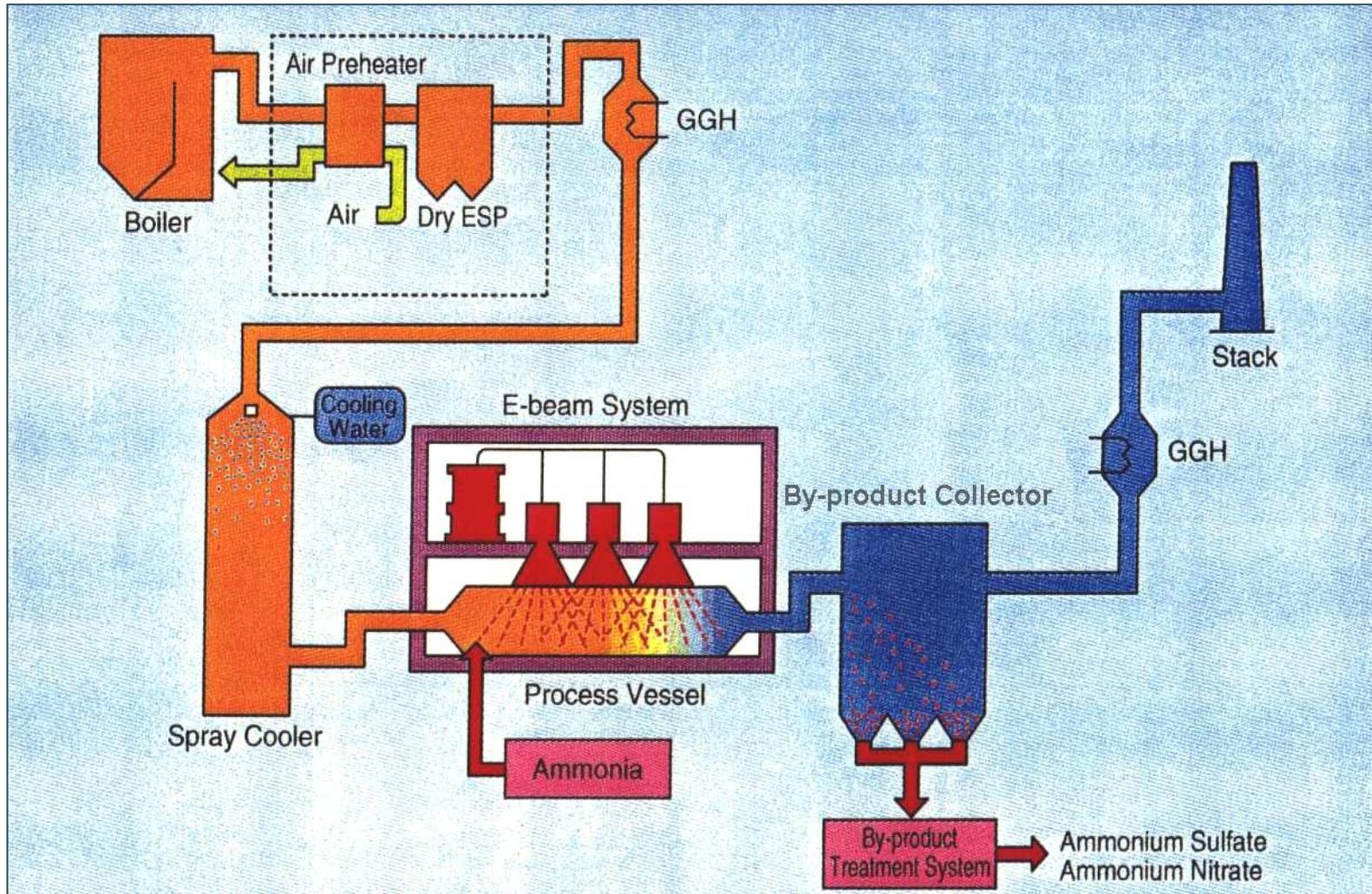


Conventional flue gas treatment process

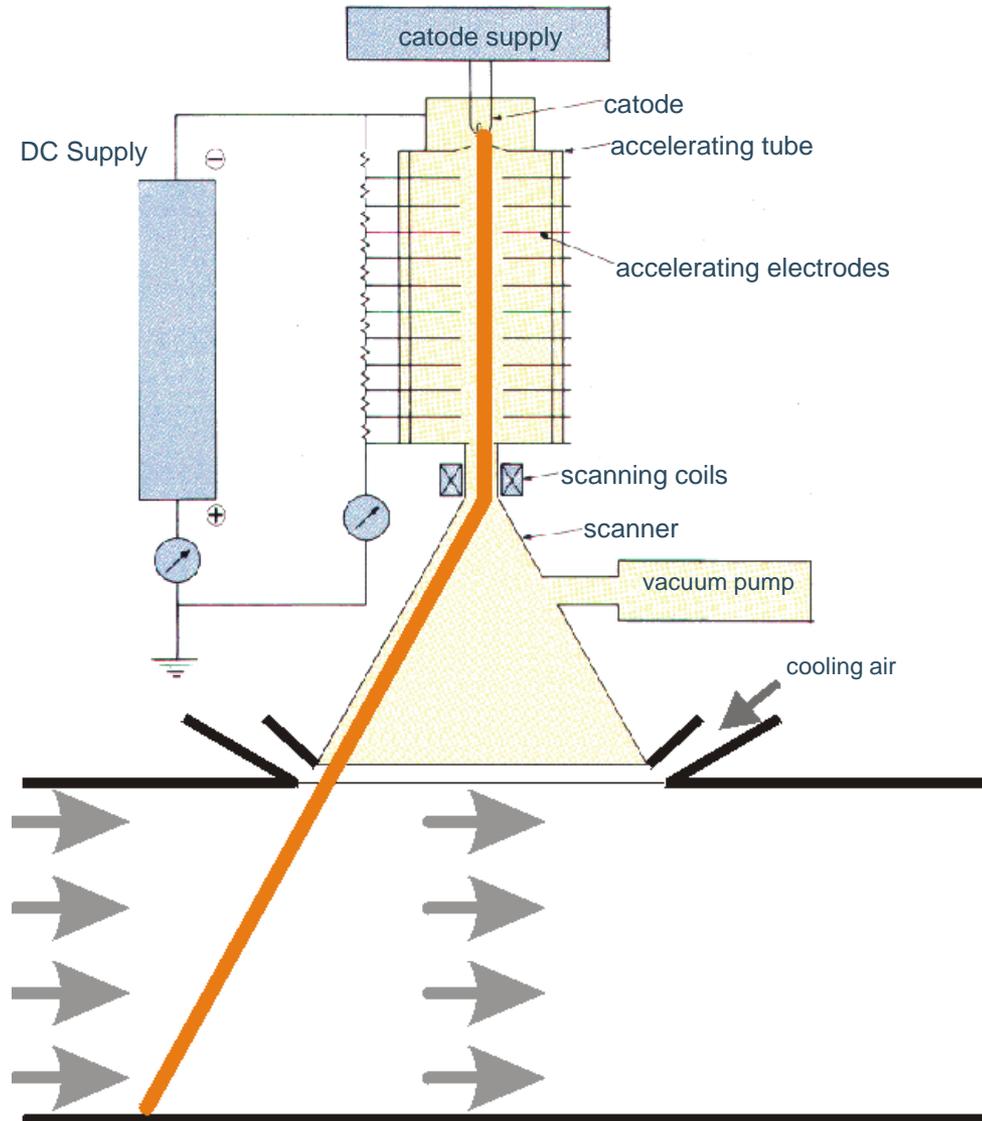
- Limestone-Gypsum Process (SO_2 removal)
- Ammonia Selective Catalytic Reduction Process (NO_x removal)



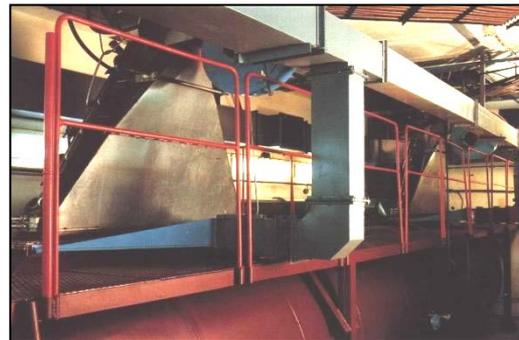
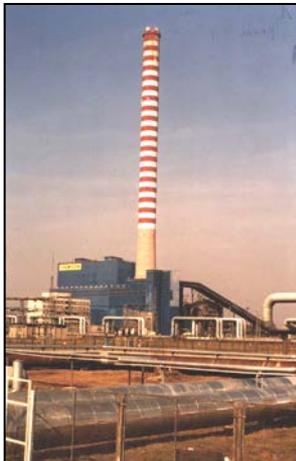
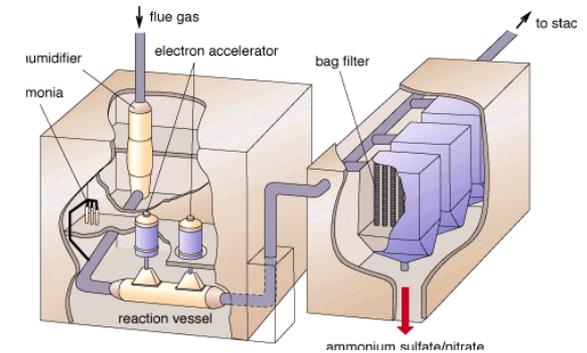
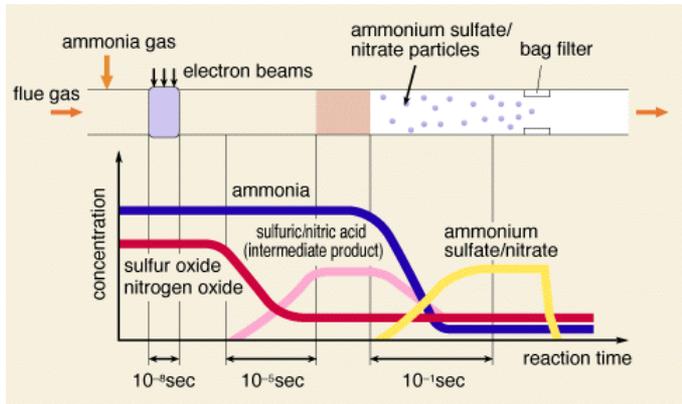
E-beam flue gas treatment process



Accelerator and reaction vessel



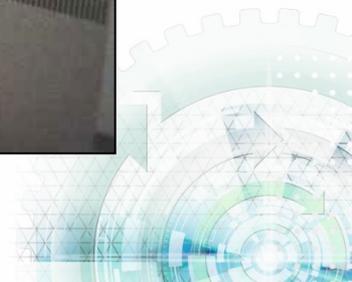
Process and its engineering



Electron Beam Flue Gas Treatment Plant „Pomorzany”



Control room at EPS Pomorzany



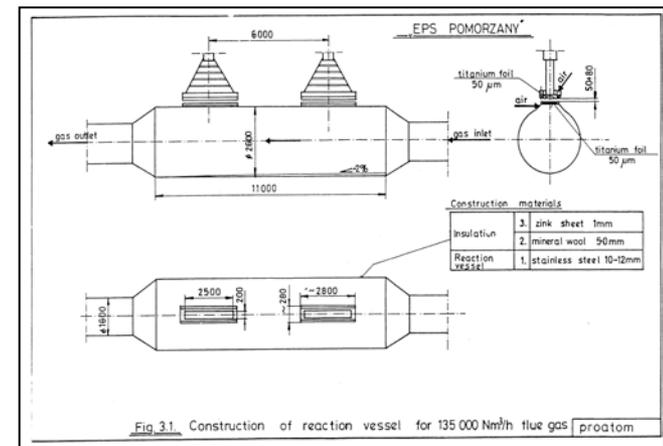


EPS Pomorzany -
accelerator





EPS Pomorzany – process vessel



Spray cooler and electrostatic precipitator of Benson Boilers



By-product warehouse



Final products – Mixed Fertilizer



**Electron accelerators help to keep
environment clean and safe !**



Thank you!

