Environmental friendly technologies
KEE/ENT

ESF II of the University of West Bohemia in Pilsen

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Lecture 9

Legislative in air protection

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Financial measures for emission reduction in CR

- **Air pollution fees was introduced in the Czech(oslovakian) legislation already in 1967** (Act. 35/1967, on measures against air pollution).
- The fee was designed to be paid mainly from the pollution over a "*maximum admissible emission level*" that was dependent on stack height – "intermediate" between fee and sanction.
- A fee would not be set, if no technical measures for the emission reduction are applicable.
- Fees could not be transferred in the price of a product (in a centrally planned economy).

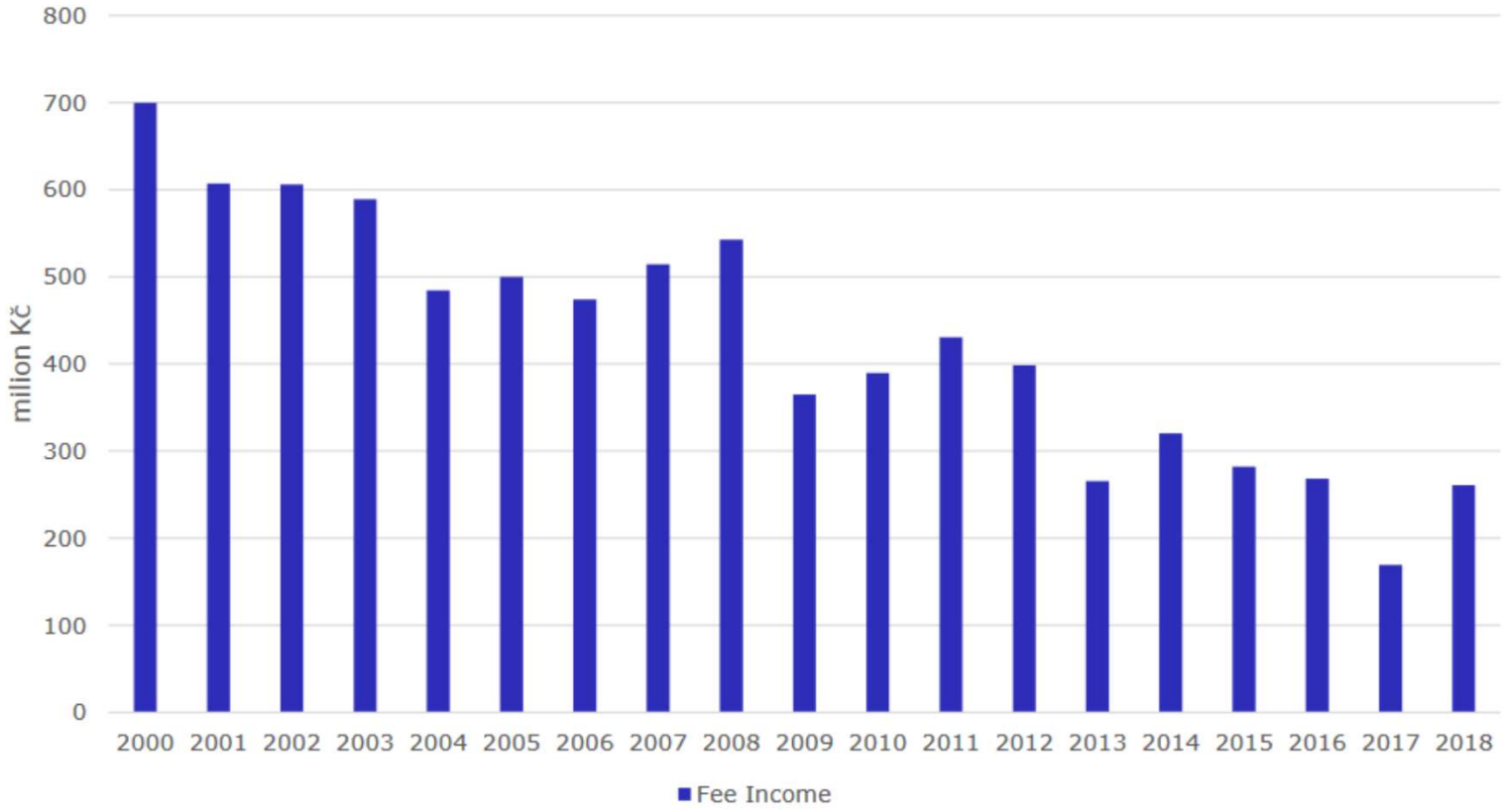
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Financial measures - evolution

- **Air Protection legislation from 1991** (Acts. No. 309/1991, 389/1991) revised the system substantially.
- fees have been assessed by the total amount of pollutants emitted and a rate. **From 1992 to 1997 the calculated fee was reduced by decreasing factor (70 % to 0 %),**
- rates were set for **TSP, SO_2, NO_x, CO, hydrocarbons and 3 groups of pollutants** (that included about 50 organic compounds and heavy metals),
- 50 % surcharge in case the Emission Limit Values (ELVs) were exceeded (not replacing sanction),
- if an operator starts investments in emission reduction measures, 40 % of the fee is conditionally remitted.

Air pollution fees in CR



Financial measures – principle of fees

- In the period 1991 – 2012 the system of the fees have mostly been unchanged.
- The cumulative inflation from 1991 to 2012 was 300 %, so the fee rates had only 1/3 of the original value.
- The motivational character was lost (investments needed for emission reductions were much higher than the fees).
- Transaction costs were disproportionate due to a very large number of installations where the fees were applied (ca. 39 000).
- Basic pollutants (TSP, SO_2, NO_x and CO) represented 97 % of the collected fee.

2012 Air protection act

- Fee rates have been **proposed in 6 different forms** on the basis of **marginal costs of emission reduction** included in the GAINS model.
- **Other economic incentives were analyzed** (e.g. shorter investments depreciation for investments leading to emission reduction) but proved ineffective.
- **Rates based on the external costs** ("ExternE" model) would **not be acceptable.**
- Continuous increase of rates was proposed up to 2021.

Air Pollution Fees in the approved 2012 Air Protection Act (no. 201), compared to 1991 – 2012 rates.

€/t	1991 - 2012	2013 - 16	2017	2018	2019	2020	from 2021
TSP	117	164	246	327	409	491	573
SO_2	39	53	82	109	136	164	191
NO_x	31	43	66	86	109	129	152
VOC	78	105	164	218	273	327	382

Rates re-calculated to EUR in 2019 with an exchange rate of 25,65 Kč/EUR.

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- As discussions about air pollution fees was very difficult, the following number of flexibilities were proposed to achieve rate increases:

i. minimal fee was set to 2000 EUR (if calculated lower, the fee is not to be paid),

ii. since 2017 an additional factor is added corresponding to achieved emission concentrations [i.e. percentage of ELV or Best Available Techniques (BAT) – Associated Emission Level (AEL)]

iii. the fee is not assessed in cases:

due to modernization or reconstruction of the installation, there is a total emission reduction compared to 2010 over 70 % for TSP and VOC and 45 % for SO_2 and NO_x, or

the emission concentration during the whole year is below 50 % of ELVs or BAT-AEL

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Additional factor corresponding to the emission concentrations over the whole year (as a percentage of ELV of BAT-AEL)

Emission concentration	50 - 60 %	> 60 - 70 %	> 70 - 80 %	> 80 - 90 %	> 90 %
Factor	0,2	0,4	0,6	0,8	1

The concentration level is assessed as a maximum valid half-hourly concentration corresponding to the wording in the legislation.

The flexibilities based on the emission concentrations are applicable only in cases, where emissions are **measured continuously**.

= potential incentive to use continuous measurements even in cases not required by the legislation.

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Changes in the number of subjects obliged to pay the fee and the sum of fees collected in the 3 most recent years.

	2015	2016	2017
Total fees collected (EUR)	9 053 776	8 904 112	7 038 194
Number of installations	290	296	297

Around 70 installations have changed in the three years (some fell below the 2000 EUR limit, some got above it).

Number of installations using one of the flexibilities is low.

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Effect of new regulations

Effects of the air pollution fees can not be distinguished from the effects of lowering ELV, and the general modernization (e.g. shift to more efficient technologies) of the energy and industry sectors.

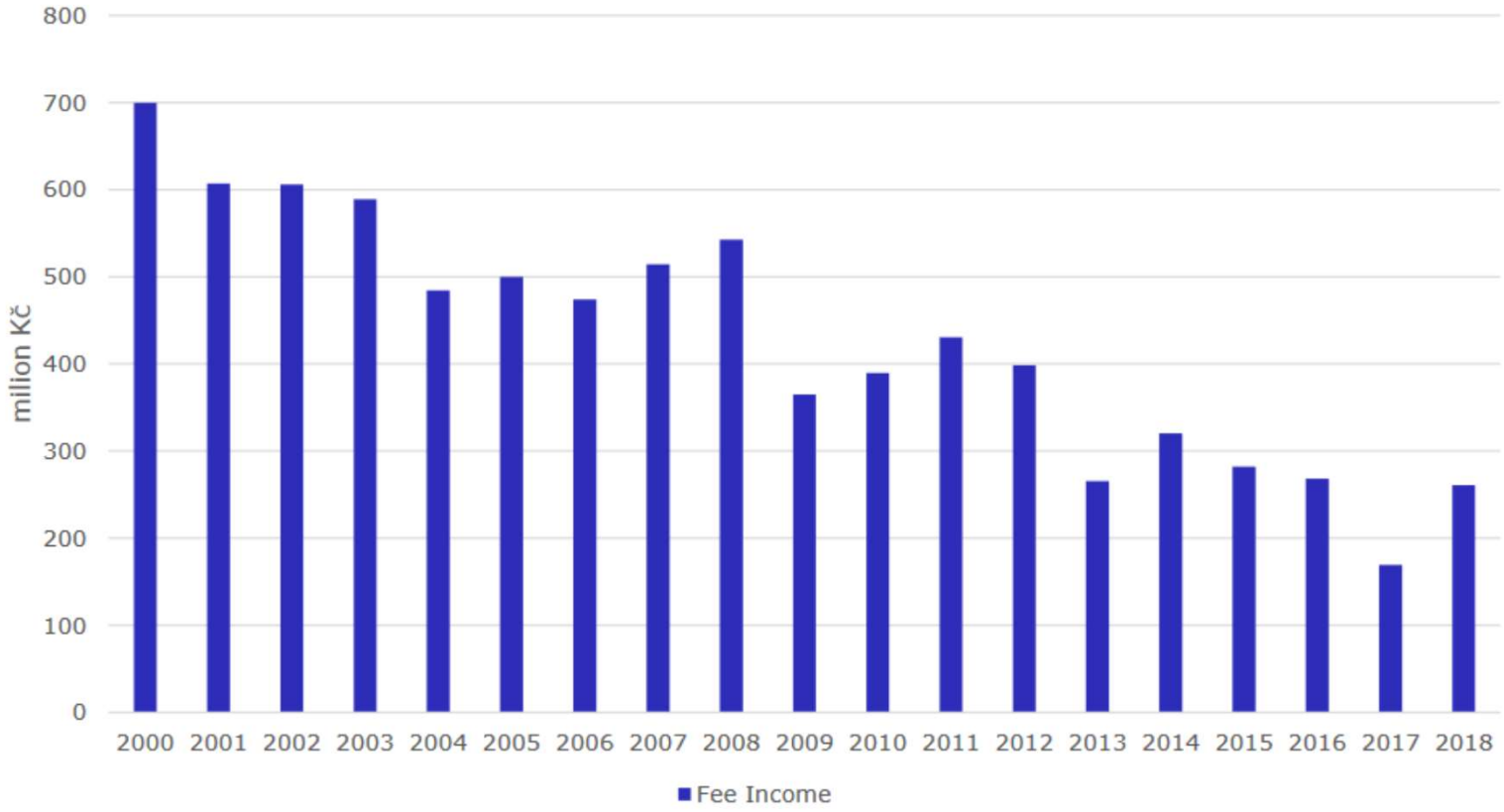
Air pollution fees continue to play an important role in financing the State Environmental Fund, which enables financing of various projects and activities.

The pragmatic approach to collect fees from certain polluters only further increase the different conditions of small and bigger polluters. (Together with e.g. carbon pricing in the EU Emissions Trading System (EU-ETS), environment impact assessment – EIA and other systems, these different requirements incentivize operation of smaller units, which may lead to disconnection from central heating plants).

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New air pollution fees in CR



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