

Recalculation NMVOC emissions of NFR 1A4bi

VÝZKUMNÉ ENERGETICKÉ CENTRUM
VŠB – TU OSTRAVA

KONEKO marketing, spol. s r. o.

December 2019

RESEARCH REPORTS (Czech only):

- [NFR 1A4bi EF NMVOC](#)
- [NFR 1A4bi VOC-TOC ratio](#)

Annotation:

[NFR 1A4bi EF NMVOC](#)

[NFR 1A4bi VOC/TOC ratio](#)

NFR_1A4bi_EF_NMVOC

The study ([VEC VŠB-TU Ostrava](#)) aimed in determination of CH₄ contribution to organic gaseous compounds (OGC) from combustion of solid fuels in different types of boilers. Solid fuels were brown coal, wood logs and wood pellets. The tested boilers used in households were automatic, gasification, boiler with down-draft combustion and over-fire boilers at nominal output. There were four tests with biomass fuels and four tests with brown coals. Modern boilers had the methane concentrations and OGC at the limit detections. The highest measured concentration of methane and OGC were measured for the combustion tests of over-fire boiler at the combustion of brown coal (5.9 kg/GJ of carbon in methane and 22.4 kg/GJ of OGC).

VOC / TOC ratio

The correction including methane deduction was followed by another phase of conversion of the emission factor for NMVOC. In cooperation with [KONEKO marketing, spol. s r. o.](#), the ratio between VOC and TOC was determined on the basis of the total weight of VOC. From that was calculated amount of TOC using the ratio between the molar mass of C and the total molar mass of the organic substance.

From the literature research was found, that it is problematic to correctly specify the amount of methane to NMVOC released from local heating plants in households in the Czech Republic. For this reason, it would be appropriate to perform a series of new measurements focusing on the determination of the average value of the VOC / TOC ratio on low-power heating plants.

These results were used to repair a mistake which were implemented in calculation files. Emission factor was recalculated but although this is not the final result.