

## **POP's IN Israeli coal ash**

**Dr. Ruud Meij, 2006**

**KEMA, The Netherlands**

Two samples of furnace bottom ash (FBA) and six samples of pulverized fuel ash (PFA or ESP-ash) were taken from Israeli coal-fired power stations in the last quarter of 2005. It concerns the Orot Rabin and Rutenberg power stations. The samples were kept in dark and at low temperatures till their extraction and chemical analysis on 17 dioxins plus furans and the 16 polycyclic hydrocarbons (PAH) of the EPA list. The samples were analysed in the Netherlands at TAUW laboratories (present name AL-West C.V.). This laboratory has an accreditation for the determination of PAH in soils and dioxins plus furans in fly ash.

The detected concentrations of the dioxins and furans are extremely low and lie between 0 and 0.78 pico gram I-TEQ per gram. The upper bound lies between <0.42 and <1.11 pico gram I-TEQ per gram. The upper bound is equal to the total of the detected amounts plus the sum of the detection limits for those compounds which were not detected.

The detected concentrations of the 16 EPA PAHs are low and lie between 0.02 and 1 milligram per kilogram. The upper bound lies between <0.1 and 1 milligram per kilogram. Carcinogenic PAHs are only found in four of the eight samples, their upper bound is <0.28 milligram per kilogram. The PAH concentrations in the FBA are higher than in the PFA.

These findings are comparable to those found in ashes of Dutch coal-fired power stations. In the Netherlands FBA and PFA are used as building materials. If a building material is used it has to comply with limits, which are mentioned in the Dutch Building Material Decree. The limits for PAH lie between 5 and 50 mg/kg. It appears that the levels lie far below the Dutch limits.