

6. Evaluation and Rationale

6.1 Combustion of coal

There is *sufficient evidence* in humans for the carcinogenicity of household combustion of coal. Household combustion of coal causes cancer of the lung.

There is *sufficient evidence* in experimental animals for the carcinogenicity of emissions from combustion of coal.

There is *sufficient evidence* in experimental animals for the carcinogenicity of extracts from coal-derived soot.

Overall evaluation

Indoor emissions from household combustion of coal are *carcinogenic to humans (Group 1)*.

6.2 Combustion of biomass

There is *limited evidence* in humans for the carcinogenicity of household combustion of biomass fuel (primarily wood). Household combustion of biomass fuel (primarily wood) causes cancer of the lung.

There is *limited evidence* in experimental animals for the carcinogenicity of emissions from combustion of wood.

There is *sufficient evidence* in experimental animals for the carcinogenicity of wood-smoke extracts.

Overall evaluation

Indoor emissions from household combustion of biomass fuel (primarily wood) are *probably carcinogenic to humans (Group 2A)*.

In reaching this evaluation, the Working Group considered mechanistic and other relevant data. These data include (i) the presence of polycyclic aromatic hydrocarbons and other carcinogenic compounds in wood smoke, (ii) evidence of mutagenicity of wood smoke and (iii) multiple studies that show cytogenetic damage in humans who are exposed to wood smoke.