

Modelling residential emissions

Emissions from the residential sector are projected on the basis of income elasticities.

Emissions $E_{h,t}$ of households h at time t are equal to

$$(1) E_{h,t} = E_{h,t-1} \left(\frac{Y_{h,t}}{Y_{h,t-1}} \right)^{\varepsilon_h} \Leftrightarrow E_{h,t} = \alpha_h Y_{h,t}^{\varepsilon_h}$$

where $Y_{s,t}$ is the income of households h at time t , and ε_s is the income elasticity.

The income elasticity is estimated by ordinary least squares for the equation:

$$(2) \ln E_{h,t} = \ln \alpha_h + \varepsilon_h \ln Y_{h,t} + u_{h,t}$$

where $u_{h,t}$ is the error term.