To calculate the weighted emission factor the primary emission factor is multiplied by the Total Primary Energy Requirement and divided by the Total Primary Energy Requirement less all losses and statistical differences. These are recorded in the IEA Energy Balances as:

statistical differences   distribution losses
petroleum refineries   gas works
liquefaction .   coal transformation
own use in transformation industry other transformation losses

Thus: EF weighted = EF primary x TPES /(TPES - all losses)

It is this weighted emission factor that is applied to the end-use sectors: industry, transport and other, and to the different modes within each. It is also applied to total final consumption. By multiplying the Mtoe figure by the emission factor the emissions of carbon dioxide in million tonnes of carbon are calculated.

The non-energy uses defined in the IEA Energy Balances have been excluded from the emissions calculation but their contribution to the losses in transformation and statistical differences are difficult to calculate. It is possible, therefore, that a portion of the losses are caused by non-energy use. This portion would still figure when the emission factors are weighted and may produce a slightly inaccurate result. This distortion is considered, however, to be insignificant.

Electricity

The input of fossil fuels into the production of electricity is represented as a separate entry. Emissions resulting from electrical production are calculated in the same manner as for the end-use sectors. That is, each fuel input into the generation of electricity is multiplied by its weighted emission factor. No carbon dioxide emissions are assumed to emanate directly from electricity generated by nuclear or hydro, solar or wind methods. Thus, although one could look down the column showing carbon emissions from coal for total final consumption for the OECD Total for 1988 as being 8.43 per cent of all carbon emissions, this figure *must* be considered by taking into account the fact that 77.79 per cent of electricity emissions for that year come from coal. All emissions on a fuel basis after Total Primary Energy Requirements must, therefore, take into account the additional electricity emissions.

Within each sector, electricity emissions are distributed proportionately to the ratio of use each sector makes of electrical production. Total electrical emissions are calculated by summing electrical emissions from the four fuel sources. The ratio of electricity delivered to each sector is divided by total electricity recorded for TFC. This ratio is multiplied by total emissions from electricity and distributed accordingly. For data reasons, no account has been