## CRITERIA FOR DETERMINING MINIMUM NUMBERS OF SAMPLING POINTS FOR FIXED MEASUREMENT OF CONCENTRATIONS OF RELEVANT POLLUTANTS AND OZONE IN AMBIENT AIR

## PART I

Relevant pollutants: minimum number of sampling points for fixed measurement to assess compliance with limit values for the protection of human health and alert
thresholds in zones where fixed measurement is the sole source of information
(a) Diffuse sources
\(\left.$$
\begin{array}{llll}\hline \begin{array}{l}\text { Population of zone } \\
\text { (thousands ) }\end{array} & \begin{array}{l}\text { If concentrations } \\
\text { exceed the upper } \\
\text { assessment threshold }\end{array} & \begin{array}{l}\text { If maximum } \\
\text { concentrations are } \\
\text { between the upper } \\
\text { and lower assessment } \\
\text { thresholds }\end{array} & \begin{array}{l}\text { For } \mathrm{SO}_{2} \text { and } \mathrm{NO}_{2} \\
\text { in agglomerations } \\
\text { where maximum } \\
\text { concentrations } \\
\text { are below the } \\
\text { lower assessment } \\
\text { thresholds }\end{array}
$$ <br>

\hline 0-250 \& 1 \& 1 \& not applicable\end{array}\right]\)| 1 |
| :--- |
| $250-499$ |

## (b) Point sources

For the assessment of pollution in the vicinity of point sources, the number of sampling points for fixed measurement should be calculated taking into account emission densities, the likely distribution patterns of ambient-air pollution and the potential exposure of the population.

## PART II

Relevant pollutants: minimum number of sampling points for fixed measurements to assess compliance with limit values for the protection of ecosystems or vegetation in zones other than agglomerations

| If maximum concentrations exceed the upper <br> assessment threshold | If maximum concentrations are between the <br> upper and lower assessment thresholds |
| :--- | :--- |
| 1 station every $20,000 \mathrm{~km}^{2}$ | 1 station every $40,000 \mathrm{~km}^{2}$ |

In island zones the number of sampling points for fixed measurement should be calculated taking into account the likely distribution patterns of ambient-air pollution and the potential exposure of ecosystems or vegetation.

## PART III

Ozone: minimum number of sampling points for fixed continuous measurement to assess air quality in view of compliance with the target values, long-term objectives and information and alert thresholds where continuous measurement is the sole source of information

| Population ( $\times 1,000$ ) | Agglomerations <br> (urban and suburban) ${ }^{(a)}$ | Other zones (suburban and rural) (a) | Rural background |
| :---: | :---: | :---: | :---: |
| 0-250 |  | 1 | 1 station/50,000 km² as an average density over all zones in England ${ }^{\text {(b) }}$ |
| 251-500 | 1 | 2 | " |
| 501-1,000 | 2 | 2 | " |
| 1,001-1,500 | 3 | 3 | " |
| 1,501-2,000 | 3 | 4 | " |
| 2,001-2,750 | 4 | 5 | " |
| 2,751-3,750 | 5 | 6 | " |

[^0]| Population $(\times 1,000)$ | Agglomerations <br> (urban and <br> suburban) ${ }^{(a)}$ | Other zones <br> (suburban and rural) <br> (a) | Rural background |
| :--- | :--- | :--- | :--- |
| $>3,750$ | 1 additional station per <br> 2 million inhabitants | 1 additional station per <br> 2 million inhabitants |  |

(a) At least 1 station in suburban areas, where the highest exposure of the population is likely to occur. In agglomerations at least $50 \%$ of the stations should be located in suburban areas.
(b) 1 station per $25,000 \mathrm{~km}^{2}$ for complex terrain is recommended.

## PART IV <br> Ozone: minimum number of sampling points for fixed measurements for zones attaining the long-term objectives

The number of sampling points for ozone must, in combination with other means of supplementary assessment such as air quality modelling and co-located nitrogen dioxide measurements, be sufficient to examine the trend of ozone pollution and check compliance with the long-term objectives. The number of stations located in agglomerations and other zones may be reduced to one-third of the number specified in Part III. Where information from fixed measurement stations is the sole source of information, at least one monitoring station should be kept. If, in zones where there is supplementary assessment, the result of this is that a zone has no remaining station, coordination with the number of stations in neighbouring zones must ensure adequate assessment of ozone concentrations against long-term objectives. The number of rural background stations should be 1 per $100,000 \mathrm{~km}^{2}$.


[^0]:    (a) At least 1 station in suburban areas, where the highest exposure of the population is likely to occur. In agglomerations at least $50 \%$ of the stations should be located in suburban areas.
    (b) 1 station per $25,000 \mathrm{~km}^{2}$ for complex terrain is recommended.

