

# APPENDIX 10B: AIR QUALITY GUIDELINES, TARGET VALUES, STANDARDS AND OBJECTIVES

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Table 1: World Health Organisation (WHO) Air Quality Guideline (AQG) and Interim Target (IT) Values

WHO Interim Target or Guideline	Concentration Measured As	Interim Target or Guideline Value ( $\mu\text{g}/\text{m}^3$ )
<b>PM<sub>2.5</sub></b>		
Interim Target-1 (IT-1)	Annual mean	35
	24-hour mean (99 <sup>th</sup> percentile)	75
Interim Target-2 (IT-2)	Annual mean	25
	24-hour mean (99 <sup>th</sup> percentile)	50
Interim Target-3 (IT-3)	Annual mean	15
	24-hour mean (99 <sup>th</sup> percentile)	37.5
Air Quality Guideline	Annual mean	10
	24-hour mean (99 <sup>th</sup> percentile)	25
<b>PM<sub>10</sub></b>		
Interim Target-1 (IT-1)	Annual mean	70
	24-hour mean (99 <sup>th</sup> percentile)	150
Interim Target-2 (IT-2)	Annual mean	50
	24-hour mean (99 <sup>th</sup> percentile)	100
Interim Target-3 (IT-3)	Annual mean	30
	24-hour mean (99 <sup>th</sup> percentile)	75
Air Quality Guideline	Annual mean	20
	24-hour mean (99 <sup>th</sup> percentile)	50
<b>O<sub>3</sub></b>		
High Levels	Daily maximum 8-hour mean	240
Interim Target-1 (IT-1)	Daily maximum 8-hour mean	160
Air Quality Guideline	Daily maximum 8-hour mean	100
<b>NO<sub>2</sub></b>		
Air Quality Guideline	Annual mean	40
	1-hour mean	200
<b>SO<sub>2</sub></b>		
Interim Target-1 (IT-1)	24-hour mean	125
	10-minute mean	-
Interim Target-2 (IT-2)	24-hour mean	50
	10-minute mean	-
Air Quality Guideline	24-hour mean	20
	10-minute mean	500

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Table 2: European Union Air Quality Standards and Objectives

Pollutant	Concentration ( $\mu\text{g}/\text{m}^3$ Unless Otherwise Stated)	Averaging Period	Date to be Achieved and Maintained Thereafter	Permitted Exceedances Each Year
PM <sub>2.5</sub>	25 ***	1 year	Target value enters into force 1/1/2010 Limit value enters into force 1/1/2015	n/a
SO <sub>2</sub>	350	1 hour	Limit value enters into force 1/1/2005	24
	125	24 hours	Limit value enters into force 1/1/2005	3
NO <sub>2</sub>	200	1 hour	Limit value enters into force 1/1/2010	18
	40	1 year	Limit value enters into force 1/1/2010*	n/a
PM <sub>10</sub>	50	24 hours	Limit value enters into force 1/1/2005**	35
	40	1 year	Limit value enters into force 1/1/2005**	n/a
Lead	0.5	1 year	Limit value enters into force 1/1/2005 (or 1/1/2010 in the immediate vicinity of specific, notified industrial sources; and a 1.0 $\mu\text{g}/\text{m}^3$ limit value applies from 1/1/2005 to 31/12/2009)	n/a
CO	10 mg/m <sup>3</sup>	Maximum daily 8 hour mean	Limit value enters into force 1/1/2005	n/a
Benzene	5	1 year	Limit value enters into force 1/1/2010**	n/a
Ozone	120	Maximum daily 8 hour mean	Target value enters into force 1/1/2010	25 days averaged over 3 years
Arsenic	6 ng/m <sup>3</sup>	1 year	Target value enters into force 1/1/2012	n/a
Cadmium	5 ng/m <sup>3</sup>	1 year	Target value enters into force 1/1/2012	n/a
Nickel	20 ng/m <sup>3</sup>	1 year	Target value enters into force 1/1/2012	n/a
Polycyclic Aromatic Hydrocarbons	1 ng/m <sup>3</sup> (expressed as concentration of Benzo(a)pyrene)	1 year	Target value enters into force 1/1/2012	n/a

\* Under the new Directive the member State can apply for an extension of up to five years (i.e. maximum up to 2015) in a specific zone. Request is subject to assessment by the Commission. In such cases within the time extension period the limit value applies at the level of the limit value + maximum margin of tolerance (48  $\mu\text{g}/\text{m}^3$  for annual NO<sub>2</sub> limit value).

\*\* Under the new Directive the Member State can apply for an extension until three years after the date of entry into force of the new Directive (i.e. May 2011) in a specific zone. Request is subject to assessment by the Commission. In such cases within the time extension period the limit value applies at the level of the limit value + maximum margin of tolerance (35 days at 75 $\mu\text{g}/\text{m}^3$  for daily PM<sub>10</sub> limit value, 48  $\mu\text{g}/\text{m}^3$  for annual PM<sub>10</sub> limit value).

\*\*\* Standard introduced by the new Directive.

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Table 3: National Air Quality Objectives

Pollutant	Applies	National Air Quality Objective	Concentration Measured As	Date to be Achieved By and Maintained Thereafter
<b>For the Protection of Human Health</b>				
Particles (PM <sub>10</sub> )	UK	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	24 hour mean	31 December 2004
	UK	40 µg/m <sup>3</sup>	Annual mean	31 December 2004
Particles (PM <sub>2.5</sub> )	UK (except Scotland)	25 µg/m <sup>3</sup>	Annual mean	1 January 2015
NO <sub>2</sub>	UK	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1 hour mean	31 December 2005
	UK	40 µg/m <sup>3</sup>	Annual mean	31 December 2005
O <sub>3</sub>	UK	120 µg/m <sup>3</sup> not to be exceeded on more than 25 days per calendar year averaged over 3 years	Maximum daily 8 hour mean	31 December 2005
SO <sub>2</sub>	UK	266 µg/m <sup>3</sup> not to be exceeded more than 35 times a year	15 minute mean	31 December 2005
	UK	350 µg/m <sup>3</sup> not to be exceeded more than 24 times a year	1 hour mean	31 December 2004
	UK	125 µg/m <sup>3</sup> not to be exceeded more than 3 times a year	24 hour mean	31 December 2004
Polycyclic aromatic hydrocarbons	UK	0.25 ng/m <sup>3</sup> B[a]P	As annual average	31 December 2010
Benzene	England and Wales	5 µg/m <sup>3</sup>	Annual average	31 December 2010
1,3 Butadiene	UK	2.25 µg/m <sup>3</sup>	Running annual mean	31 December 2003
CO	UK	10 mg/m <sup>3</sup>	Maximum daily running 8 hour mean	31 December 2003
Lead	UK	0.5 µg/m <sup>3</sup>	Annual mean	31 December 2004
<b>For the Protection of Vegetation and Ecosystems</b>				
NO <sub>x</sub>	UK	30 µg/m <sup>3</sup>	Annual mean	31 December 2000
SO <sub>2</sub>	UK	20 µg/m <sup>3</sup>	Annual mean	31 December 2000
	UK	20 µg/m <sup>3</sup>	Winter average	31 December 2000
Ozone	UK	Target value of 18,000 µg/m <sup>3</sup> based on AOT40 to be calculated from 1 hour values from May to July, and to be achieved, so far as possible, by 2010	Average over 5 years	1 January 2010