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STATUTORY RULES OF NORTHERN IRELAND

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**2010 No. 188**

**ENVIRONMENTAL PROTECTION**

**The Air Quality Standards Regulations (Northern Ireland) 2010**

*Made* - - - - *21st May 2010*  
*Coming into operation* *11th June 2010*

The Department of the Environment makes the following Regulations in exercise of the powers conferred by section 2(2) of the European Communities Act 1972<sup>(1)</sup>.

The Department of the Environment is designated<sup>(2)</sup> for the purposes of section 2(2) of the European Communities Act 1972 in relation to the environment.

**PART 1**

**General**

**Citation and commencement**

1. These Regulations may be cited as the Air Quality Standards Regulations (Northern Ireland) 2010 and shall come into operation on 11<sup>th</sup> June 2010.

**Definitions and interpretation**

2.—(1) The Interpretation Act (Northern Ireland) 1954<sup>(3)</sup> shall apply to these Regulations as it applies to an Act of the Northern Ireland Assembly.

(2) In these Regulations—

“ambient air” means outdoor air in the troposphere, excluding workplaces as defined by Directive 89/654/EEC<sup>(4)</sup> where provisions concerning health and safety at work apply and to which members of the public do not have regular access;

“AOT 40” (expressed in  $(\mu\text{g}/\text{m}^3) \cdot \text{hours}$ ) means the sum of the difference between hourly concentrations greater than  $80 \mu\text{g}/\text{m}^3$  (= 40 parts per billion) and  $80 \mu\text{g}/\text{m}^3$  over a given period

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(1) 1972 c.68

(2) S.I. 2008/301

(3) 1954 c.33 (N.I.)

(4) OJ L 393, 30.12.1989, p.35-36

using only the one-hour values measured between 8.00 and 20.00 Central European Time (CET) each day;

“arsenic, cadmium, nickel and benzo(a)pyrene” mean the total content of those elements and compounds within the PM<sub>10</sub> present in ambient air;

“average exposure indicator” means the indicator calculated by the Secretary of State under Regulation 23 of the Air Quality Standards Regulations 2010<sup>(5)</sup>;

“chemical speciation concentrations” means the concentrations of different chemical components or species of PM<sub>2.5</sub>;

“Directive 2004/107/EC” means Directive 2004/107/EC of the European Parliament and of the Council relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air<sup>(6)</sup>;

“fixed measurements” means measurements taken at fixed locations, either continuously or by sampling from time to time, to determine levels of pollutants in accordance with the relevant data quality objectives;

“indicative measurement” means measurements which meet data quality objectives that are less strict than those required for fixed measurements;

“margin of tolerance” means the percentage of the limit value by which that value may be exceeded in a given year;

“national exposure reduction target” means the target established by the Secretary of State under Regulation 24 of the Air Quality Standards Regulations 2010;

“oxides of nitrogen” means the sum of the volume mixing ratio (ppbv) of nitrogen monoxide (nitric oxide) and nitrogen dioxide expressed in units of mass concentration of nitrogen dioxide ( $\mu\text{g}/\text{m}^3$ );

“ozone precursor substances” means substances which contribute to the formation of ground level ozone;

“PM<sub>10</sub>” means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of PM<sub>10</sub>, EN 12341, with a 50% efficiency cut-off at 10  $\mu\text{m}$  aerodynamic diameter;

“PM<sub>2.5</sub>” means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of PM<sub>2.5</sub>, EN 14907, with a 50% efficiency cut-off at 2.5  $\mu\text{m}$  aerodynamic diameter;

“particulate matter” means PM<sub>2.5</sub> and PM<sub>10</sub>;

“pollutant” means any of the following—

- (a) sulphur dioxide,
- (b) nitrogen dioxide,
- (c) oxides of nitrogen,
- (d) particulate matter,
- (e) lead,
- (f) benzene,
- (g) carbon monoxide,
- (h) arsenic,
- (i) cadmium,

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(5) S.I. 2010/1001

(6) OJ No L 23, 26.1.2005, p.3, last amended by Regulation (EC) No 219/2009 (OJ No L 87, 31.3.2009, p.109)

- (j) mercury,
- (k) nickel,
- (l) benzo(a)pyrene or other polycyclic aromatic hydrocarbons,
- (m) ozone;

“polycyclic aromatic hydrocarbons” means those organic compounds composed of at least two fused aromatic rings made entirely from carbon and hydrogen;

“the Department” means the Department of the Environment;

“the Directive” means Directive [2008/50/EC](#) of the European Parliament and of the Council on ambient air quality and cleaner air for Europe<sup>(7)</sup>;

“total gaseous mercury” means elemental mercury vapour (Hg<sup>0</sup>) and reactive gaseous mercury, i.e. water-soluble mercury species with sufficiently high vapour pressure to exist in the gas phase.

### **Designation of competent authorities**

3. The Department is designated as the competent authority for the purposes of the Directive on ambient air quality and cleaner air for Europe, and for the purposes of Directive [2004/107/EC](#) relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.

### **Responsibility for implementation of the ambient air quality and cleaner air for Europe Directive**

4.—(1) For the purposes of Article 3 (Responsibilities) of the Directive (other than for the purposes specified in Article 3(f) of the Directive), the Department shall be the competent authority responsible for—

- (a) assessment of ambient air quality;
- (b) approval of measurement systems (methods, equipment, networks and laboratories);
- (c) ensuring the accuracy of measurements;
- (d) analysis of assessment methods;
- (e) co-ordination of European Community-wide quality assurance programmes organised by the European Commission, save in so far as that co-ordination entails communication with the European Commission;

(2) The Department in discharging its responsibilities in compliance with paragraph (1) and any Department exercising functions in compliance with paragraph (3) shall comply with Section C of Annex I to the Directive.

(3) Where a Northern Ireland department has functions relevant to the assessment and maintenance of ambient air quality, it shall exercise those functions so as to ensure compliance with the requirements of the Directive.

### **Zones and agglomerations**

5.—(1) The Department shall, for the purposes of these Regulations, divide the territory of Northern Ireland into zones and agglomerations.

(2) A zone will be classified as an agglomeration if it is a conurbation with a population in excess of 250,000 inhabitants.

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(7) OJ No L 152, 11.6.2008, p.1

(3) In these Regulations references to a zone includes a zone which has been classified as an agglomeration.

## PART 2

### Assessment of ambient air quality

#### CHAPTER 1

#### Sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide

##### **Assessment thresholds**

6.—(1) The Department shall classify each zone according to whether or not the upper or lower assessment thresholds specified in Section A of Annex II to the Directive are exceeded in relation to sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide in ambient air.

(2) The Department shall review the classification of zones carried out in accordance with paragraph (1) at least every five years, and shall do so more frequently if there are significant changes in the activities which may affect levels of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene or carbon monoxide in ambient air.

(3) When reviewing the classification of zones in accordance with paragraph (2), the Department shall comply with Section B of Annex II to the Directive.

##### **Assessment criteria**

7.—(1) The Department shall assess the level of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide in ambient air in all zones.

(2) In all zones where the level of those pollutants exceeds the upper assessment threshold referred to in regulation 6, fixed measurements shall be used, but may be supplemented by modelling or indicative measurements or both, in order to provide adequate information on the spatial distribution of the ambient air quality.

(3) In all zones where the level of those pollutants is below the lower assessment threshold referred to in regulation 6, modelling or estimation techniques or both may be used instead of measurement.

(4) In all other zones a combination of fixed measurements together with modelling or indicative measurements or both may be used.

(5) In addition to the measurements referred to in paragraphs (1) to (4), the Department shall measure PM<sub>2.5</sub> at rural background locations away from significant sources of air pollution, in order to provide information on an annual average basis on the total mass concentration and chemical speciation concentrations of that pollutant.

(6) For the purposes of paragraphs (1) to (4), measurements shall be carried out in accordance with the criteria set out in Sections A and C of Annex I, to the Directive, and for the purposes of paragraph (5), measurements shall be carried out in accordance with the criteria set out in Annex IV to the Directive.

(7) Save as provided for in paragraph (8), for the purposes of paragraph (6), measurements for the purposes of this regulation shall be taken in accordance with the reference measurement methods specified in Section A and Section C of Annex VI to the Directive.

(8) Alternative methods to those referred to in paragraph (7) may be used provided the conditions set out in Section B of that Annex are complied with.

(9) Where measurements are supplemented by modelling or indicative measurement then the Department shall take account of the results of those supplementary methods in assessing ambient air quality for the purposes of these Regulations.

### **Location and number of sampling points**

**8.—**(1) The Department shall install sampling points in accordance with Schedule 1 for the assessment of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide.

(2) In zones where fixed measurement is the sole source of information for the assessment of air quality, the number of sampling points must be more than or equal to the minimum number specified in Section A of Annex V to the Directive for the purpose of assessing compliance with limit values and alert thresholds.

(3) In zones other than agglomerations where fixed measurement is the sole source of information for the assessment of air quality, the minimum number of sampling points shall be more than or equal to the minimum number specified in Section C of Annex V to the Directive for the purpose of assessing compliance with critical levels for the protection of vegetation.

(4) In zones where the information from fixed measurement is supplemented by information from modelling or indicative measurement or both, the number of sampling points in either Section A or C of Annex V or both, may be reduced by up to 50% provided that the following conditions are met—

- (a) the supplementary methods provide sufficient information for the assessment of air quality in relation to limit values or alert thresholds;
- (b) the supplementary methods provide sufficient information to inform the public as to the state of ambient air quality; and
- (c) the number of sampling points to be installed and the spatial resolution of other techniques are sufficient for the concentration of the relevant pollutant to be established in accordance with the data quality objectives specified in Section A of Annex I to the Directive and enable assessment results to meet the criteria in Section B of the same Annex.

(5) For the measurement of PM<sub>2.5</sub> in rural background locations, the Department shall install a sampling point for every 100,000km<sup>2</sup>.

## **CHAPTER 2**

### **Ozone**

#### **Assessment criteria**

**9.—**(1) The Department shall assess the levels of ozone in ambient air in all zones.

(2) The Department shall ensure that fixed measurements are taken in any zone where the concentrations of ozone have exceeded the long-term objectives specified in Schedule 4 during any of the previous five years of measurement.

(3) Save as provided for in paragraph (4) for the purposes of paragraph (2), measurements shall be taken in accordance with the reference measurement methods specified in point 8 of Section A of Annex VI to the Directive.

(4) Alternative methods to those referred to in paragraph (3) may be used provided the conditions set out in Section B of that Annex are complied with.

### **Location and number of sampling points**

10.—(1) The Department shall install sampling points in accordance with the criteria set out in Annex VIII to the Directive.

(2) In zones where fixed measurement is the sole source of information for the assessment of air quality, the number of sampling points shall be more than or equal to the minimum number specified in Section A of Annex IX to the Directive.

(3) In zones where the concentrations of ozone have been below the long-term objectives for each of the previous five years of measurement, the number of sampling points shall be determined in accordance with the criteria set out in Section B of Annex IX to the Directive.

(4) In zones where the information from fixed measurement is supplemented by information from modelling or indicative measurement or both, the number of sampling points referred to in paragraph (2) may be reduced provided that the following conditions are met—

- (a) the supplementary methods provide sufficient information for the assessment of air quality in relation to target values, long-term objectives, information and alert thresholds;
- (b) the number of sampling points to be installed and the spatial resolution of supplementary methods are sufficient for the concentration of ozone to be established in accordance with the data quality objectives set out in Section A of Annex I to the Directive and to enable assessment results to meet the criteria specified in Section B of the same Annex;
- (c) there is at least one sampling point in each zone, with a minimum of one sampling point per two million inhabitants or one sampling point per 50,000 km<sup>2</sup>, whichever produces the greater number of sampling points; and
- (d) nitrogen dioxide is measured at all remaining sampling points except at rural background stations referred to in Section A of Annex VIII to the Directive.

(5) The Department shall ensure that nitrogen dioxide is measured at no less than 50% of the sampling points required under Section A of Annex IX to the Directive.

(6) The measurement referred to in paragraph (5) shall be continuous except at rural background locations.

(7) The Department shall ensure that concentrations of the ozone precursor substances listed in Annex X to the Directive are measured at at least one sampling point.

(8) The Department may choose the location and number of sampling points for measurements of ozone precursor substances and shall take into account the objectives and methods set out in Annex X to the Directive.

## **CHAPTER 3**

Arsenic, cadmium, nickel, mercury, benzo(a)pyrene and other polycyclic aromatic hydrocarbons

### **Assessment thresholds**

11.—(1) The Department shall classify each zone according to whether or not the upper and lower assessment thresholds specified in Section 1 of Annex II to Council Directive [2004/107/EC](#) are exceeded in relation to arsenic, cadmium, nickel and benzo(a)pyrene.

(2) The Department shall review the classification of zones in paragraph (1) every five years, and shall do so more frequently than every five years if there are significant changes in the activities which may affect levels of the pollutants referred to in paragraph (1) in ambient air.

(3) When classifying zones in accordance with assessment thresholds, the Department shall comply with Section II of Annex II to Council Directive [2004/107/EC](#).

### **Assessment criteria**

12.—(1) The Department shall assess concentrations of arsenic, cadmium, nickel and benzo(a)pyrene in ambient air in all zones.

(2) In zones where the levels of arsenic, cadmium, nickel and benzo(a)pyrene are above the upper assessment threshold referred to in regulation 11, measurement is mandatory but may be supplemented by modelling techniques to provide an adequate level of information on ambient air quality.

(3) In zones where the levels of those pollutants are between the upper and lower assessment thresholds referred to in regulation 11, measurement is mandatory but may be supplemented by indicative measurements as referred to in Section I of Annex IV to Council Directive [2004/107/EC](#) or modelling, or both.

(4) In zones where the levels of those pollutants are below the lower assessment thresholds, modelling or objective estimation techniques may be used instead of measurement.

### **Data quality objectives**

13. When assessing levels of arsenic, cadmium, nickel, benzo(a)pyrene and other polycyclic aromatic hydrocarbons or gaseous mercury, the Department shall apply the data quality objectives and other standards contained in Annex IV to Council Directive [2004/107/EC](#).

### **Location and number of sampling points**

14. The location and number of sampling points for the assessment of arsenic, cadmium, nickel and benzo(a)pyrene shall be determined in accordance with Annex III to Council Directive [2004/107/EC](#).

### **Monitoring of polycyclic aromatic hydrocarbons**

15.—(1) The Department shall monitor concentrations of other relevant polycyclic aromatic hydrocarbons in addition to benzo(a)pyrene as it thinks fit, including at least the following—

- (a) benzo(a)anthracene,
- (b) benzo(b)fluoranthene,
- (c) benzo(j)fluoranthene,
- (d) benzo(k)fluoranthene,
- (e) indeno(1,2,3-cd)pyrene,
- (f) dibenz(a,h)anthracene.

(2) Monitoring sites shall be located together with sampling points for benzo(a)pyrene.

(3) Monitoring sites shall be selected so that geographical variations and long-term trends in the concentrations of polycyclic aromatic hydrocarbons can be identified.

(4) Monitoring sites shall be selected in accordance with the criteria in Sections I to III of Annex III to Council Directive [2004/107/EC](#).

### **Background monitoring**

16.—(1) The Department shall operate background sampling points to provide the indicative measurements of—

- (a) concentrations of—
  - (i) arsenic, cadmium, nickel and benzo(a)pyrene;

- (ii) the polycyclic aromatic hydrocarbons in paragraph (1) of regulation 15; and
  - (iii) total gaseous mercury.
- (b) total depositions of—
  - (i) arsenic, cadmium, nickel and benzo(a)pyrene within the PM<sub>10</sub> fraction;
  - (ii) the polycyclic aromatic hydrocarbons in paragraph (1) of regulation 15; and
  - (iii) mercury.
- (2) For the purposes of paragraph (1) the Department shall ensure that—
  - (a) at least one sampling point is installed for every 100,000km<sup>2</sup>; and
  - (b) each sampling point is located in accordance with Annex III to Council Directive [2004/107/EC](#).

### **Reference methods for sampling and analysis**

17. Measurements of arsenic, cadmium, mercury, nickel, benzo(a)pyrene and other polycyclic aromatic hydrocarbons in ambient air and disposition of those pollutants shall be made in accordance with the reference measurement methods set out in Annex V to Council Directive [2004/107/EC](#).

## **PART 3**

### **Duties of Northern Ireland departments in relation to limit values etc**

#### **Duty in relation to limit values**

18.—(1) Northern Ireland departments shall ensure that levels of sulphur dioxide, nitrogen dioxide, benzene, carbon monoxide, lead and particulate matter do not exceed the limit values set out in Schedule 2.

(2) In zones where levels of the pollutants mentioned in paragraph (1) are below the limit values set out in Schedule 2, Northern Ireland departments shall ensure that levels are maintained below those limit values and shall endeavour to maintain the best ambient air quality compatible with sustainable development.

#### **Duty in relation to target values**

19.—(1) Northern Ireland departments shall ensure that all necessary measures not entailing disproportionate costs are taken to ensure that concentrations of PM<sub>2.5</sub>, ozone, arsenic, cadmium, nickel and benzo(a)pyrene do not exceed the target values in Schedule 3.

(2) Northern Ireland departments shall draw up a list of all zones where the target values for arsenic, cadmium, nickel or benzo(a)pyrene are met, and in relation to those zones shall maintain the levels of those pollutants below those target values and shall endeavour to achieve the best ambient air quality compatible with sustainable development.

(3) Northern Ireland departments shall draw up a list of all zones where the target value for arsenic, cadmium, nickel or benzo(a)pyrene is exceeded, and in relation to those zones, shall identify the areas where those values are exceeded and the relevant sources of pollutants.

(4) In relation to the zones to which paragraph (3) applies, the measures in paragraph (1) shall be directed at the predominant sources of emission which have been identified, and where applicable



will entail the application of best available techniques in accordance with Directive [2008/1/EC\(8\)](#) of the European Parliament and of the Council concerning integrated pollution, prevention and control.

#### **Date of application for limit values and target values**

**20.** Limit values and target values—

- (a) apply from the date specified for each limit value or target value concerned; or
- (b) apply from the date these Regulations come into operation, if no date is specified.

#### **Duty in relation to long-term objectives for ozone**

**21.**—(1) Northern Ireland departments shall ensure that all necessary measures not entailing disproportionate cost are taken to attain the long-term objectives for ozone set out in Schedule 4.

(2) In zones where the long-term objectives for ozone have been attained, Northern Ireland departments shall, insofar as factors including meteorological conditions and the transboundary nature of ozone pollution permit—

- (a) ensure that they continue to be met;
- (b) maintain the best ambient air quality compatible with sustainable development; and
- (c) maintain a high level of protection for the environment and human health.

#### **Duty in relation to information and alert thresholds**

**22.** Where any of the information or alert thresholds in Schedule 5 are exceeded Northern Ireland departments shall inform the public by means of radio, television, newspapers or the internet.

#### **Duty in relation to critical levels for the protection of vegetation**

**23.** Northern Ireland departments shall ensure that the critical levels set out in Schedule 6 are not exceeded.

## **PART 4**

### **National Exposure Reduction for PM<sub>2.5</sub>**

#### **Duty of Northern Ireland departments to limit exposure to PM<sub>2.5</sub>**

**24.**—(1) Northern Ireland departments shall ensure that all necessary measures not entailing disproportionate costs are taken in relation to Northern Ireland with a view to attaining the national exposure reduction target by 2020.

(2) Northern Ireland departments shall ensure that all appropriate measures are taken in Northern Ireland with a view to ensuring that the average exposure indicator for 2015 does not exceed 20 µg/m<sup>3</sup>.

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(8) OJ No L 24, 29.1.2008, p.4, as amended by Directive [2009/31/EC](#) (OJ No L 140, 5.6.2009, p.114)

## PART 5

### Plans

#### Air quality plans

25.—(1) Where the levels of sulphur dioxide, nitrogen dioxide, benzene, carbon monoxide, lead and PM<sub>10</sub> in ambient air exceed any of the limit values in Schedule 2 or the level of PM<sub>2.5</sub> exceeds the target value in Schedule 3, the Department, after consultation with other Northern Ireland departments, shall draw up and implement an air quality plan so as to achieve that limit value or target value.

(2) The air quality plan shall include measures intended to ensure compliance with any relevant limit value within the shortest possible time.

(3) Between the date when these Regulations come into operation and 31<sup>st</sup> December 2014, the Department, after consultation with other Northern Ireland departments, shall draw up and implement an air quality plan if levels of PM<sub>2.5</sub> in ambient air exceed a level calculated by applying the margin of tolerance set out in Schedule 2 to the limit value.

(4) Air quality plans shall include the information listed in Schedule 7.

(5) Wherever possible, air quality plans shall be consistent with other plans drawn up in accordance with obligations imposed under the Directive on the limitation of emissions of certain pollutants into the air from large combustion plants<sup>(9)</sup>, Council Directive 2001/81/EC on national emission ceilings for certain atmospheric pollutants<sup>(10)</sup> and Council Directive 2002/49/EC on assessment and management of environmental noise<sup>(11)</sup>.

(6) Where an air quality plan is required in relation to more than one pollutant, the Department, after consultation with other Northern Ireland departments, shall, where appropriate, draw up and implement an integrated plan in relation to all pollutants concerned.

(7) Where the level of ozone in a zone exceeds the target value in Schedule 3, the Department, after consultation with other Northern Ireland departments, shall draw up and implement an air quality plan unless the measures necessary to achieve the target value would entail disproportionate cost.

#### Short-term action plans

26.—(1) Where in any zone, there is a risk that levels of sulphur dioxide or nitrogen dioxide will exceed the alert thresholds set out in Schedule 5, the Department, after consultation with other Northern Ireland departments, shall draw up and implement a short-term action plan.

(2) A short-term action plan shall set out the measures intended to reduce the risk of alert thresholds being exceeded, or in the event of the levels being exceeded, to reduce the duration of such an incident.

(3) Where, in any zone, levels of ozone exceed the alert threshold set out in Schedule 5 or there is a risk that they will exceed that threshold, the Department, after consultation with other Northern Ireland departments, shall draw up and implement a short-term action plan taking into account Decision 2004/279/EC<sup>(12)</sup>, if of the opinion that it is reasonably likely that the risk of alert level being exceeded, or the severity or duration of such an incident can be reduced taking into account geographical, meteorological and economic conditions.

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<sup>(9)</sup> OJ No L 309, 27.11.01, p.1, last amended by Directive 2009/31/EC (OJ No L 140, 5.6.2009, p.114)

<sup>(10)</sup> OJ No L 309, 27.11.01, p.22, last amended by Regulation (EC) No 219/2009 (OJ No L 87, 31.3.2009, p.109)

<sup>(11)</sup> OJ No L 189, 18.7.02, p.12, last amended by Regulation (EC) No 1137/2008 (OJ No L 311, 21.11.2008, p.1)

<sup>(12)</sup> OJ No L 87, 25.3.04, p.50

(4) For the purposes of paragraph (3), the threshold must be exceeded or be predicted to exceed the alert threshold for at least three consecutive hours.

(5) Short-term action plans may also be drawn up where there is a risk that any of the limit values or targets values set out in Schedules 2 or 3 will be exceeded.

### **Public participation in drawing up air quality and short-term action plans**

**27.**—(1) The Department, after consultation with other Northern Ireland departments, shall consult the public where it proposes to prepare, modify or review an air quality plan or a short-term action plan.

(2) Where paragraph (1) applies, the Department, after consultation with other Northern Ireland departments, shall—

- (a) inform the public as to the proposal, any relevant background information and the right of the public to participate in the drawing up of the plan;
- (b) specify the means by which the public can participate in the consultation, including an address for responses, and a reasonable timescale for the consultation; and
- (c) take account of the results of the consultation in drawing up the plan.

(3) When the plan is published, the Department, after consultation with other Northern Ireland departments, shall also provide information to the public as to the reasons for the contents of the plan together with information about the public participation process that has been carried out.

## **PART 6**

### **Public information**

#### **Public information**

**28.**—(1) The Department shall make the following available to the public and interested organisations—

- (a) up-to-date information given on at least a daily basis, and if possible on an hourly basis on concentrations of sulphur dioxide, nitrogen dioxide, PM<sub>10</sub> and if possible, PM<sub>2.5</sub>, ozone and carbon monoxide;
- (b) up-to-date information on concentrations of benzene and lead, presented as an average over the last twelve months, and updated every three months or if possible every month;
- (c) up-to-date information as to any amendment to the attainment dates for limit values for nitrogen dioxide or PM<sub>10</sub>;
- (d) up-to-date information on concentrations and deposition rates of arsenic, cadmium, nickel, mercury, benzo(a)pyrene and other polycyclic aromatic hydrocarbons;
- (e) information about cases where target values for arsenic, nickel and benzo(a)pyrene are exceeded, together with reasons for such cases, the area concerned, and appropriate information regarding effects on health and the environment;
- (f) information on measures taken to achieve target values for arsenic, cadmium, nickel and benzo(a)pyrene;
- (g) information about actual or predicted instances where pollutants exceed alert or information thresholds;
- (h) air quality plans; and
- (i) short-term action plans.

(2) The information in paragraph (1)(g) shall be made available in accordance with Schedule 8.

(3) Information shall be distributed free of charge in a clear and comprehensible manner via any easily accessible media including the internet or other appropriate means of telecommunication taking into account the requirements of Council Directive 2007/2/EC on establishing an infrastructure for spatial information in the European Community(13).

(4) For the purposes of this Part, “interested organisations” includes environmental organisations, consumer organisations, organisations representing sensitive populations, relevant healthcare bodies and industrial federations.

### **Annual reports**

**29.**—(1) The Department shall publish annual reports for all the pollutants.

(2) Annual reports shall contain the following information—

- (a) details of all the cases where levels of pollutants have exceeded limit values, target values, long term objectives, information and alert thresholds set out in Schedules 2 to 5 for the relevant averaging periods; and
- (b) a summary assessment of the effects of the cases referred to in paragraph (a).

(3) Annual reports may contain further information where appropriate, including assessments on forest protection and information as to ozone precursor substances listed in Section B of Annex X to the Directive as the Department thinks appropriate.

## **PART 7**

### **General**

### **Revocations**

**30.** The Air Quality Standards Regulations (Northern Ireland) 2007(14) are revoked.

Sealed with the Official Seal of the Department of the Environment on 21<sup>st</sup> May 2010.



*Wesley Shannon*  
A senior officer of the Department of the  
Environment

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(13) OJ No L 108, 25.4.07, p.1

(14) S.R. 2007 No. 265

## SCHEDULE 1

Regulation 8(1)

Sampling points for measurement of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide in ambient air

### PART 1

#### **General**

1. Ambient air quality shall be assessed at sampling points located in accordance with this Schedule, except at locations set out in paragraph 2.
2. Compliance with limit values directed at the protection of human health does not need to be assessed at the following locations—
  - (a) any location situated within areas where members of the public do not have access and there is no fixed habitation;
  - (b) on factory premises or at industrial locations to which all relevant provisions concerning health and safety at work apply; and
  - (c) on the carriageway of roads and on the central reservations of roads except where there is normally pedestrian access to the central reservation.
3. Insofar as they are relevant, the principles set out in the Schedule also apply to indicative measurement and modelling.

### PART 2

#### Macroscale siting of sampling points

#### **Sampling points for the protection of human health**

1. Sampling points directed at the protection of human health must be sited to provide data on—
  - (a) the areas within zones where the highest concentrations occur to which the population is likely to be directly or indirectly exposed for a period which is significant in relation to the averaging period of the limit values; and
  - (b) levels in other areas within the zones which are representative of the exposure of the general population.
2. Sampling points shall in general be sited to avoid measuring very small micro-environments in their immediate vicinity. Where feasible, the Department shall locate sampling points so as to be representative of air quality in a street segment of no less than 100 m in length at traffic-orientated sites or an area of at least 250 m x 250 m at industrial sites.
3. Sampling points in urban background locations shall be located so that their pollution level is influenced by the combined contribution from all sources upwind of the station. The pollution level should not be dominated by a single source unless such a situation is typical for a larger urban area. Those sampling points shall, as a general rule, be representative for several square kilometres.
4. Where the objective is to assess rural background levels, the sampling point shall not be influenced by agglomerations or industrial sites in its vicinity, i.e. closer than five kilometres.
5. Where contributions from industrial sources are to be assessed, at least one sampling point shall be installed downwind of the source in the nearest residential area. Where the background

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concentration is not known, an additional sampling point shall be situated within the main wind direction.

6. Sampling points shall also, where possible, be representative of similar locations not in their immediate vicinity.

7. Account shall be taken of the need to locate sampling points on islands, where it is necessary for the protection of human health.

### **Protection of ecosystems and vegetation**

8. Sampling points targeted at the protection of ecosystems or vegetation shall be sited more than 20 km from agglomerations or more than 5 km from other built-up areas, industrial installations or motorways or major roads with traffic counts of more than 50,000 vehicles per day. The Department shall locate sampling points so as to be representative of air quality in a surrounding area of at least 1000 km<sup>2</sup>. A sampling point may be sited at a lesser distance or to be representative of air quality in a less extended area, taking account of geographical conditions or opportunities to protect particularly vulnerable areas. Account shall be taken of the need to assess air quality on islands.

## **PART 3**

### **Microscale siting of sampling points**

9. Insofar as is practicable, sampling points shall be situated in accordance with the following criteria—

- (a) the flow around the inlet sampling probe must be unrestricted (free in an arc of at least 270°) without any obstructions affecting the airflow in the vicinity of the sampler and the inlet sampling probe must normally be some metres away from buildings, balconies, trees and other obstacles and at least 0.5 m from the nearest building in the case of sampling points representing air quality at the building line;
- (b) in general, the inlet sampling point shall be between 1.5 m (the breathing zone) and 4 m above the ground. However, higher positions (up to 8 m) may be necessary in some circumstances. Higher siting may also be appropriate if the station is representative of a large area;
- (c) the inlet probe shall not be positioned in the immediate vicinity of sources in order to avoid the direct intake of emissions unmixed with ambient air;
- (d) the sampler's exhaust outlet must be positioned so that recirculation of exhaust air to the sampler inlet is avoided;
- (e) in relation to the location of traffic-orientated samplers, sampling points must be at least 25 m from the edge of major junctions and at least 10 m from the kerbside.

10. The following factors may also be taken into account—

- (a) interfering sources;
- (b) security;
- (c) access;
- (d) availability of electrical power and telephone communications;
- (e) visibility of the site in relation to its surroundings;
- (f) safety of public and operators;
- (g) the desirability of co-locating sampling points for different pollutants; and

(h) planning requirements.

## SCHEDULE 2

Regulation 18(1) and (2)

## Limit values

**Sulphur dioxide**

<i>Averaging period</i>	<i>Limit value</i>
One hour	350 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 24 times a calendar year
One day	125 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 3 times a calendar year

**Nitrogen dioxide**

<i>Averaging period</i>	<i>Limit value</i>
One hour	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a calendar year
Calendar year	40 $\mu\text{g}/\text{m}^3$

**Benzene**

<i>Averaging period</i>	<i>Limit value</i>
Calendar year	5 $\mu\text{g}/\text{m}^3$

**Carbon monoxide**

<i>Averaging period</i>	<i>Limit value</i>
Maximum daily eight hour mean <sup>(1)</sup>	10 $\text{mg}/\text{m}^3$

(1) The maximum daily eight hour mean concentration of carbon monoxide shall be selected by examining eight hour running averages, calculated from hourly data and updated each hour. Each eight hour average so calculated will be assigned to the day on which it ends, i.e. the first calculation period for any one day will be the period from 17.00 on the previous day to 01.00 on that day, the last calculation period for any one day will be the period from 16.00 to 24.00 on that day.

**Lead**

<i>Averaging period</i>	<i>Limit value</i>
Calendar year	0.5 $\mu\text{g}/\text{m}^3$

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### PM<sub>10</sub>

<i>Averaging period</i>	<i>Limit value</i>
One day	50 µg/m <sup>3</sup> not to be exceeded more than 35 times a calendar year
Calendar year	40 µg/m <sup>3</sup>

### PM<sub>2.5</sub>

<i>Averaging period</i>	<i>Limit value</i>	<i>Margin of tolerance</i>	<i>Date by which limit value is to be met</i>
Calendar year	25 µg/m <sup>3</sup>	20% on 11 June 2008, decreasing on the next 1 January and every 12 months thereafter by equal annual percentages to reach 0% by 1 January 2015	1 January 2015

## SCHEDULE 3

Regulation 19(1)

### Target values

#### **Arsenic, cadmium, nickel and benzo(a)pyrene**

<i>Pollutant</i>	<i>Target value for the total content in the PM<sub>10</sub> fraction averaged over a calendar year</i>	<i>Date by which target value should be met</i>
Arsenic	6 ng/m <sup>3</sup>	31 <sup>st</sup> December 2012
Cadmium	5 ng/m <sup>3</sup>	31 <sup>st</sup> December 2012
Nickel	20 ng/m <sup>3</sup>	31 <sup>st</sup> December 2012
Benzo(a)pyrene	1 ng/m <sup>3</sup>	31 <sup>st</sup> December 2012



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### Ozone

<i>Objective</i>	<i>Averaging period</i>	<i>Target value</i>
Protection of human health	Maximum daily eight hour mean <sup>(1)</sup>	120 µg/m <sup>3</sup> not to be exceeded on more than 25 days per calendar year averaged over three years <sup>(2)</sup>
Protection of vegetation	May to July	AOT 40 (calculated from 1h values) 18,000 µg/m <sup>3</sup> .h averaged over five years <sup>(2)</sup>

- (1) The maximum daily eight-hour mean concentration shall be selected by examining eight-hour running averages, calculated from hourly data and updated each hour. Each eight-hour average so calculated shall be assigned to the day on which it ends, that is, the first calculation period for any one day will be the period from 17.00 hours on the previous day to 01.00 hours on that day, the last calculation period for any one day will be the period from 16.00 hours to 24.00 hours on the day.
- (2) If the three or five year averages cannot be determined on the basis of a full and consecutive set of annual data, the minimum annual data required for checking compliance with the target values will be valid data for one year in relation to the target value for the protection of human health and valid data for three years in relation to the target value for the protection of vegetation.

### PM<sub>2,5</sub>

<i>Averaging period</i>	<i>Target value</i>
Calendar year	25 µg/m <sup>3</sup>

### SCHEDULE 4

Regulation 9(2) and Regulation 21(1)

#### Long term objectives for ozone

<i>Objective</i>	<i>Averaging period</i>	<i>Long term objective</i>	<i>Date by which long term objective should be met</i>
Protection of human health	Maximum daily eight hour mean within a calendar year	120 µg/m <sup>3</sup>	Not defined
Protection of vegetation	May to July	AOT 40 (calculated from 1h values) 6000 µg/m <sup>3</sup> .h.	Not defined

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## SCHEDULE 5

Regulation 22

## Information and alert thresholds

**Alert thresholds for Sulphur dioxide and Nitrogen dioxide**

<i>Pollutant</i>	<i>Alert threshold<sup>(1)</sup></i>
Sulphur dioxide	500 µg/m <sup>3</sup>
Nitrogen dioxide	400 µg/m <sup>3</sup>

(1) To be measured over three consecutive hours at locations representative of air quality over the least 100 km<sup>2</sup> or an entire zone, whichever is smaller.

**Information and alert thresholds for Ozone**

<i>Purpose</i>	<i>Averaging period</i>	<i>Threshold</i>
Information	1 hour	180 µg/m <sup>3</sup>
Alert	1 hour	240 µg/m <sup>3</sup>

## SCHEDULE 6

Regulation 23

## Critical levels for the protection of vegetation

**Critical levels for the protection of vegetation**

<i>Averaging period</i>	<i>Critical level</i>
Sulphur dioxide: Calendar year and winter (1 October to 31 March)	20 µg/m <sup>3</sup>
Oxides of nitrogen: Calendar year	30 µg/m <sup>3</sup> NO <sub>x</sub>

## SCHEDULE 7

Regulation 25(4)

## Information to be included in air quality plans

1. Localisation of excess pollution—
  - (a) region;
  - (b) city (map); and
  - (c) measuring station (map, geographical co-ordinates).
2. General information—
  - (a) type of zone (city, industrial or rural area);

- (b) estimate of the polluted area (km<sup>2</sup>) and of the population exposed to the pollution;
  - (c) useful climatic data;
  - (d) relevant data on topography; and
  - (e) sufficient information on the type of targets requiring protection in the zone.
3. Responsible authorities (names and addresses of persons responsible for the development and implementation of air quality plans).
  4. Nature and assessment of pollution—
    - (a) concentrations observed over previous years (before the implementation of the improvement measures);
    - (b) concentrations measured since the beginning of the project; and
    - (c) techniques used for the assessment.
  5. Origin of pollution—
    - (a) list of the main emission sources responsible for pollution (map);
    - (b) total quantity of emissions from these sources (tonnes per year); and
    - (c) information on pollution imported from other regions.
  6. Analysis of the situation—
    - (a) details of those factors responsible for exceeding the limit value or target value (transport, including cross-border transport, formation of secondary pollutants in the atmosphere); and
    - (b) details of possible measures for improvement of air quality.
  7. Details of those measures or projects for improvements which existed prior to 11 June 2008—
    - (a) local, regional, national and international measures; and
    - (b) observed effects of those measures.
  8. Details of those measures or projects adopted with a view to reducing pollution following 11 June 2008—
    - (a) listing and description of all the measures set out in the project;
    - (b) timetable for implementation; and
    - (c) estimate of the improvement of air quality planned and of the expected time required to attain these objectives.
  9. Details of the measures or projects planned or being researched for the long term.
  10. List of the publications, documents and work etc. used to supplement information required by this Schedule.

## SCHEDULE 8

Regulation 28(2)

### Public information in relation to alert and information thresholds for nitrogen dioxide, sulphur dioxide and ozone

1. In cases where the information threshold or the alert threshold for nitrogen dioxide, sulphur dioxide or ozone is exceeded the details set out in paragraphs 3 to 6, as a minimum, shall be made available to the public.

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2. In cases where either the information or alert thresholds are predicted to be exceeded, the information set out in paragraphs 3 to 6 shall be provided where practicable.
  3. Information on any incident where information or alert thresholds are exceeded—
    - (a) the location or area where thresholds are exceeded;
    - (b) the type of threshold exceeded (information or alert threshold);
    - (c) the time at which the threshold was exceeded and the duration of the incident; and
    - (d) in the case of ozone, the highest 1-hour and 8-hour mean concentration.
  4. Forecast for the following afternoon, day or days—
    - (a) the geographical area in which it is expected that an information or alert threshold will be exceeded; and
    - (b) the expected change in pollution, that is, improvement, stabilisation or deterioration, and the reasons for those changes.
  5. Information on the type of population concerned, possible health effects and recommended conduct in particular—
    - (a) information on the population groups at risk;
    - (b) description of likely symptoms;
    - (c) recommended precautions to be taken by the population concerned; and
    - (d) where to find further information.
  6. Information provided under this Schedule shall also include—
    - (a) information on preventive action to reduce pollution or exposure to it;
    - (b) an indication of main source sectors; and
    - (c) recommendations for action to reduce emissions.
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## EXPLANATORY NOTE

*(This note is not part of the Regulations)*

These Regulations implement the following Directives:

Council Directive [2008/50/EC](#) on ambient air quality and cleaner air for Europe (this Directive replaces Council Directive [96/62/EC](#) on ambient air quality assessment and management, Council Directive [1999/30/EC](#) relating to limits for sulphur dioxide, nitrogen dioxide, oxides of nitrogen, particulate matter and lead in ambient air, Council Directive [2000/69/EC](#) relating to limit values for benzene and carbon monoxide in ambient air, Council Directive [2002/3/EC](#) relating to ozone in ambient air).

Council Directive [2004/107/EC](#) relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air.

These Regulations replace the Air Quality Standards Regulations (Northern Ireland) 2007 ([S.R. 2007 No.265](#)) which are revoked.

Part 1 of the Regulations deals with definitions and designates the Department as the competent authority for the purposes of Council Directives [2008/50/EC](#) and [2004/107/EC](#).

Part 2 of the Regulations deals with assessment of ambient air quality. Chapter 1 relates to assessment of sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide. Chapter 2 relates to assessment of ozone, and Chapter 3 relates to assessment of arsenic, cadmium, nickel, mercury, benzo(a)pyrene and other polycyclic aromatic hydrocarbons.

Part 3 of the Regulations sets out the duties Northern Ireland departments shall take in relation to the limit values, target values, long-term objectives, information and alert thresholds and critical levels for the protection of vegetation which are set out in Schedules 2 to 6.

Part 4 of the Regulations deals with requirements in relation to PM<sub>2.5</sub> in addition to the limit value and target value for this pollutant.

Part 5 of the Regulations imposes requirements on the Department, after consultation with other Northern Ireland departments, to draw up air quality plans in relation to limit values and target values and short-term action plans in relation to alert thresholds. Short-term action plans may also be used in relation to limit values and target values.

Part 6 of the Regulations relates to public information.

Schedule 1 of the Regulations sets out the requirements for the siting of sampling points for the assessment of sulphur dioxide, nitrogen dioxide, oxides of nitrogen, particulate matter, lead, benzene and carbon monoxide.

Schedules 2 to 6 set out limit values, target values, long-term objectives for ozone, information and alert thresholds and critical levels for the protection of vegetation.

Schedule 7 sets out the information to be included in air quality plans.

Schedule 8 sets out the public information to be provided in relation to concentration of pollutants.

A full Impact Assessment of the effect that this Rule will have on the costs of business and the voluntary sector is available from the Atmosphere and Local Environment Division, Department for Environment, Food and Rural Affairs, Ergon House, Horseferry Road, London, SW1P 3JR.