L.N. 478 of 2010

ENVIRONMENT PROTECTION ACT (CAP. 435)

Ambient Air Quality Regulations, 2010

BY virtue of the powers conferred by articles 3 and 9 of the Environment Protection Act, the Prime Minister has made the following regulations:-

Citation and scope.

1. (1) The title of these regulations is the Ambient Air Quality Regulations, 2010.

(2) These regulations transpose Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury and nickel and polycyclic aromatic hydrocarbons in ambient air and Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.

Interpretation.

2. For the purpose of these regulations and unless the context otherwise requires:-

"the Act" means the Environment Protection Act, or any other Act substituting it;

"agglomeration" means a zone that is a conurbation with a population in excess of 250,000 inhabitants or, where the population is 250,000 inhabitants or less, with a given population density per km^2 to be established by the Competent Authority;

"air quality plans" means plans that set out measures in order to attain the limit values or target values;

"alert threshold" means a level beyond which there is a risk to human health from brief exposure for the population as a whole and at which immediate steps are to be taken by the Competent Authority;

"ambient air" means outdoor air in the troposphere, excluding workplaces within the scope of the Work Place (Minimum Health and Safety Requirements) Regulations, 2002 where provisions concerning health and safety at work apply and to which members of the public do not have regular access;

L.N. 44 of 2002.

"arsenic", "cadmium", "nickel" and "benzo(a)pyrene" mean the total content of these elements and compounds in the PM_{10} fraction;

"assessment" means any method used to measure, calculate, predict or estimate levels;

"average exposure indicator" means an average level determined on the basis of measurements at urban background locations throughout Malta and which reflects population exposure. It is used to calculate the national exposure reduction target and the exposure concentration obligation;

"the Competent Authority" means the Malta Environment and Planning Authority, or such other authority as may substitute it;

"contributions from natural sources" means emissions of pollutants not caused directly or indirectly by human activities, including natural events such as volcanic eruptions, seismic activities, geothermal activities, wild-land fires, high-wind events, sea sprays or the atmospheric re-suspension or transport of natural particles from dry regions;

"critical level" means a level fixed on the basis of scientific knowledge, above which direct adverse effects may occur on some receptors, such as trees, other plants or natural ecosystems but not on humans;

"exposure concentration obligation" means a level fixed on the basis of the average exposure indicator with the aim of reducing harmful effects on human health, to be attained over a given period;

"emission" means the discharge of substances into the air;

"fixed measurements" means measurements taken at fixed sites, either continuously or by random sampling, to determine the levels in accordance with the relevant data quality objectives;

"group A pollutants" means sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter (PM_{10} and $PM_{2.5}$), lead, benzene and carbon monoxide;

"group B pollutants" means Arsenic, Cadmium, Nickel and Benzo(a)pyrene;

"group C pollutants" means benzo(a)anthracene, benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k) fluoranthene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h) anthracene;

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

"industrial combustion plant" means any technical apparatus used on industrial or trade premises excluding bakeries, in which fuels are oxidised in order to use the heat thus generated. Any such technical apparatus which is for non-domestic uses shall be within the scope of this definition;

"information threshold" means a level beyond which there is a risk to human health from brief exposure for particularly sensitive sections of the population and for which immediate and appropriate information is necessary;

"level" means the concentration of a pollutant in ambient air or the deposition thereof on surfaces in a given time;

"limit value" means a level fixed on the basis of scientific knowledge, with the aim of avoiding, preventing or reducing harmful effects on human health or the environment as a whole, to be attained within a given period and not to be exceeded once attained;

"long-term objective" means a level to be attained in the long term, save where not achievable through proportionate measures, with the aim of providing effective protection of human health and the environment;

"lower assessment threshold" means a level below which modelling or objective-estimation techniques alone may be used to assess ambient air quality;

"margin of tolerance" means the percentage of the limit value by which that value may be exceeded subject to the conditions laid down in these regulations;

"Member State" means a Member State of the European Union;

"the Minister" means the Minister responsible for the environment;

"national exposure reduction target" means a percentage reduction of the average exposure of the population of Malta set for the reference year with the aim of reducing harmful effects on human health, to be attained where possible over a given period;

"operator" means any natural or legal person who operates any industrial concern which has an adverse impact on air quality, or who has or has been delegated decisive economic power over the concern;

"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 ($\mu g/m^3$);

"ozone precursor substances" means substances which contribute to the formation of ground-level ozone, some of which are listed in Schedule 6;

"PM_{10}" means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of PM_{10}, EN 12341, with a 50 % efficiency cut-off at 10 μm aerodynamic diameter;

"$PM_{2.5}$" means particulate matter which passes through a size-selective inlet as defined in the reference method for the sampling and measurement of $PM_{2.5}$, EN 14907, with a 50 % efficiency cut-off at 2.5 μm aerodynamic diameter;

"pollutant" means any substance present in ambient air

and likely to have harmful effects on human health or the environment as a whole;

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

"target value" means a level fixed with the aim of avoiding, preventing or reducing harmful effects on human health or the environment as a whole, to be attained where possible over a given period;

"Technical instruction on Air Quality Control" means the latest guidance note approved by the Competent Authority on air quality control;

"total gaseous mercury" means elemental mercury vapour (Hg^0) and reactive gaseous mercury, such as water-soluble mercury species with sufficiently high vapour pressure to exist in the gas phase;

"total or bulk deposition" means the total mass of pollutants which is transferred from the atmosphere to surfaces (such as soil, vegetation, water, buildings, etc.) in a given area within a given time;

"upper assessment threshold" means a level below which a combination of fixed measurements and modelling techniques or indicative measurements may be used to assess ambient air quality;

"urban background locations" means places in urban areas where levels are representative of the exposure of the general urban population;

"volatile organic compounds" (VOC) means organic compounds from anthropogenic and biogenic sources, other than methane, that are capable of producing photochemical oxidants by reactions with nitrogen oxides in the presence of sunlight;

"zone" means any part of Malta as delimited by the Competent Authority for the purposes of air quality assessment and management.

Implementations and responsibilities.

3. (1) The Competent Authority shall be responsible:

(a) for the assessment of ambient air quality;

(b) for ensuring the accuracy of measurements;

(c) for the analysis of assessment methods; and;

(d) for the coordination of Community-wide quality assurance programmes organised by the European Commission.

(2) The Minister shall designate the competent authorities responsible for the approval of measurement systems (methods, equipment, networks and laboratories).

Nature of measures.

4. Measures taken under regulations 33(3) and 37 shall take into account an integrated approach to the protection of air, water and soil and shall not have a negative effect on any other Member State.

Malta to be divided into zones and agglomerations.

5. (1) The Competent Authority shall, for the purposes of these regulations, divide Malta into zones and agglomerations.

(2) The Competent Authority shall assess and manage air quality throughout all the zones and agglomerations.

(3) The Competent Authority may establish different zones for different pollutants where this is considered appropriate.

Assessment thresholds.

6. Schedule 2 to these regulations prescribes the following upper and lower assessment thresholds:

(a) for Group A pollutants, the upper and lower assessment thresholds set out in paragraphs 1 to 6 of Section A of the said Schedule; and

(b) for Group B pollutants, the upper and lower assessment thresholds set out in paragraph 7 of Section A of the said Schedule.

Long term objectives for ozone.

7. Part III of Section D of Schedule 7 to these regulations prescribes the long term objectives for ozone.

Classification of zones.

8. (1) Zones shall be classified in relation to the assessment thresholds in regulation 6 and the long term objectives in regulation 7 hereof.

(2) Classification of the zones under sub-regulation (1) of this regulation shall be reviewed at least every five years in accordance with the procedure laid down in Section B of Schedule 2 of these regulations for both group A and group B pollutants.

(3) Classification shall be reviewed earlier in the event of a significant change in the activities relevant to the concentrations of both groups of pollutants in ambient air.

Competent Authority to assess ambient air quality.

9. The Competent Authority shall assess ambient air quality with respect to group A and group B pollutants and ozone in all the zones and agglomerations in accordance with the criteria laid down in Schedule 3 to these regulations and in accordance with the criteria in regulations 10, 11 and 12 hereof.

Competent Authority to assess concentrations.

10. (1) The Competent Authority shall assess the concentration of group A pollutants and of group B pollutants in those zones and agglomerations in which the levels of these pollutants exceed the upper assessment thresholds in regulation 6.

(2) The Competent Authority shall assess the concentration of ozone in those zones and agglomerations where the long term objectives specified in regulation 7 have been exceeded during any of the previous five years of measurements, during which fixed measurements were recorded.

(3) In order to comply with the requirements of sub-regulations (1) and (2) of this regulation, the Competent Authority shall assess the concentrations of:

(a) group A substances by fixed continuous measurements;

(b) group B substances by fixed continuous measurements or by random sampling. The number of measurements shall be sufficient to enable the levels to be determined;

(c) ozone by fixed continuous measurements.

(4) Measurements in sub-regulation (3) of this regulation may be supplemented by modelling techniques or indicative measurements to provide adequate information on the spatial distribution of the ambient air quality.

Method of assessing concentrations below the upper threshold.

11. (1) The Competent Authority shall assess the concentrations of group A and group B pollutants by a combination of fixed measurements and modelling techniques or indicative measurements in those zones and agglomerations where the concentration of these pollutants is below the upper assessment threshold but above the lower assessment threshold.

(2) In order to determine whether the concentrations of group B pollutants in the respective zones and agglomerations are within the concentration range in sub-regulation (1) of this regulation, the Competent Authority shall use the method in Section B of Schedule 2 to these regulations.

(3) In order to comply with the requirements of sub-regulation (1) of this regulation with respect to group B pollutants, the Competent Authority may use the indicative measurements referred to in Part I of Section B of Schedule 1 to these regulations.

Method of assuming concentrations below the lower threshold.

12. (1) The Competent Authority shall assess the concentrations of group A and group B pollutants by modelling techniques or objective estimation techniques, in those zones and agglomerations were the concentration of these pollutants is below the lower assessment threshold.

(2) In order to determine whether the concentrations of group B pollutants in the respective zones and agglomerations are below the concentration in sub-regulation (1) of this regulation, the Competent Authority shall use the method in Section B of Schedule 2 to these regulations.

Benzo(a)pyrene contribution in ambient air.

13. The Competent Authority shall assess the contribution of benzo(a)pyrene in ambient air by monitoring also for the group C pollutants at a limited number of measurement sites. The monitoring sites for the group C pollutants shall be co-located with the sampling sites for benzo(a)pyrene and shall be selected in such a way that the long term trends can be identified. Part II of Section B, Part II of Section C and Part I of Section D of Schedule 3 to these regulations shall apply.

Measurements to be taken at rural location.

14. (1) In addition to the requirements of regulations 10, 11 and 12, the Competent Authority shall measure the concentration of group A pollutants, of group B pollutants, of group C pollutants, mercury and of ozone at a rural background location away from significant sources of air pollution.

(2) The Competent Authority shall also measure the total deposition of group B pollutants, group C pollutants and mercury at the background site.

(3) The Competent Authority shall use the readings from the background station in order to assess the total mass concentration and the chemical speciation of $PM_{2.5}$ on an annual average basis. The data quality objectives in Parts I and III of Section A of Schedule 1 to these regulations shall apply for the mass concentration measurements of particulate matter. Schedule 4 to these regulations shall apply in its entirety.

Sampling points.

15. (1) Sampling points shall be determined using the criteria listed in the relevant sections of Schedule 3 to these regulations.

(2) The minimum number of sampling points in each zone or agglomeration shall not be less than the minimum number of sampling points prescribed by Schedule 5 to these regulations as follows:

(a) Part I(1) of Section A of Schedule 5 for group A pollutants;

(b) Section B (1) of Schedule 5 for group B pollutants; and

(c) Part I of Section C of Schedule 5 for ozone.

Nitrogen dioxide measurements.

16. (1) The Competent Authority shall measure the concentration of nitrogen dioxide at a minimum of 50% of the ozone sampling points required under Part I of Section C of Schedule 5 to these regulations. The measurement shall be continuous.

(2) The number of sampling points for the fixed measurement of ozone in those zones and agglomerations where during each of the previous five years of measurement, concentrations were below the long term objectives, shall be in accordance with Part II of Section C of Schedule 5 to these regulations.

(3) The Competent Authority shall set up at least one sampling point in order to measure the concentrations of

the ozone precursor substances listed in Schedule 6 to these regulations, taking into account the objectives and methods laid down in the said schedule.

Data quality objectives.

17. The Competent Authority shall achieve the data quality objectives laid down in Schedule 1 to these regulations.

Reference methods.

18. The Competent Authority shall use the reference methods in Schedule 10 to these regulations in order to measure the:

(a) concentrations in ambient air of group A pollutants;

(b) concentrations in ambient air of ozone; and

(c) concentrations in ambient air and deposition rates of group B pollutants.

Action to be taken by the Competent Authority on group A and group B pollutants.

19. (1) The Competent Authority shall take any action it deems necessary in accordance with the powers granted to it under the Act, to make sure that the levels of group A and group B pollutants do not exceed the applicable limit values or target values prescribed by the relevant sections of Schedule 7 to these regulations, in those zones and agglomerations in which the ambient levels of these pollutants are below the applicable limit or target values.

(2) The best ambient air quality, compatible with sustainable development shall be maintained throughout these zones and agglomerations.

Other action to be taken by the Competent Authority.

20. (1) The Competent Authority shall take any action it deems necessary in accordance with the powers granted to it under the Act in order to ensure that throughout the zones and agglomerations in Malta:

(a) the levels of sulphur dioxide, PM_{10}, lead and carbon monoxide do not exceed the applicable limit values prescribed by the relevant sections of Schedule 7 to these regulations; and

(b) the levels of benzene and nitrogen dioxide do not exceed the applicable limit values prescribed by the relevant sections of Schedule 7 to these regulations from the dates specified therein; and

(c) as from the 31 December 2012 the levels of group B pollutants do not exceed the target values prescribed by the relevant sections of Schedule 7 to these regulations.

(2) Compliance with these requirements shall be assessed in accordance with Schedule 3 to these regulations.

(3) The margins of tolerance laid down in Schedule 7 to these regulations shall apply in accordance with regulation 31(1).

(4) The alert thresholds for concentrations of sulphur dioxide and nitrogen dioxide in ambient air shall be those prescribed by Section A of Schedule 8 to these regulations.

Target Values for group B pollutants.

21. The Competent Authority shall draw up a list of zones and agglomerations where the target values in Schedule 7 to these regulations for group B pollutants are exceeded. The Competent Authority shall specify the areas of exceedance and the sources contributing thereto.

Critical levels for protection of vegetation.

22. (1) The critical levels for the protection of vegetation shall be those prescribed by Schedule 9 to these regulations and assessed in accordance with Section A of Schedule 3 to these regulations.

(2) Where fixed measurements are the sole source of information for assessing air quality, the number of sampling points shall not be less than the minimum number specified in Part III of Section A of Schedule 5 to these regulations.

(3) Where information for assessing air quality is supplemented by indicative measurements or modelling, the minimum number of sampling points may be reduced by up to 50% as long as the assessed concentrations of the relevant pollutant can be assessed in accordance with the data quality objectives prescribed by Part I of Section A of Schedule 1 to these regulations.

National $PM_{2.5}$ exposure reduction target.

23. (1) The national $PM_{2.5}$ exposure reduction target shall be that prescribed by Part II of Section B of Schedule 7 to these regulations. This reduction shall be attained by the year specified therein.

(2) By 2015, the average exposure indicator shall not exceed the exposure concentration obligation prescribed by Part III

of Section B of Schedule 7 to these regulations. The $PM_{2.5}$ average exposure indicator shall be assessed as prescribed by Part I of Section B of Schedule 7to these regulations.

(3) In accordance with Schedule 3 to these regulations, the distribution and number of sampling points on which the average exposure indicator for $PM_{2.5}$ is based shall adequately reflect the general population exposure. The number of sampling points shall be no less than that prescribed by Part II of Section A of Schedule 5 to these regulations.

$PM_{2.5}$ concentrations shall not exceed target value.

24. (1) Concentrations of $PM_{2.5}$ in ambient air shall not exceed the target value prescribed by Part IV of Section A of Schedule 7 to these regulations, by the date specified therein.

(2) Concentrations of $PM_{2.5}$ in ambient air shall not exceed the limit value prescribed by Part V of Section A of Schedule 7 to these regulations throughout the zone and the agglomeration, by the date specified therein. Compliance with this requirement shall be assessed as prescribed by Schedule 3 to these regulations.

(3) The margins of tolerance in Part V of Section A of Schedule 7 to these regulations shall apply in accordance with regulation 32(1).

Ozone target value.

25. (1) The target values for ozone shall be those prescribed in Part II of Section D of Schedule 7 to these regulations.

(2) The long-term objectives for ozone shall be those prescribed in Part III of Section D of Schedule 7 to the principal regulations.

(3) In those zones and agglomerations in which the levels of ozone in ambient air are higher than the target values in sub-regulation (1) hereof, these target values shall be attained as from the dates prescribed in Part II of Section D of Schedule 7 to the principal regulations, through the implementation of the programme prepared pursuant to regulation 6 of the National Emissions Ceilings for Certain Atmospheric Pollutants Regulations, 2002 and if necessary through the implementation of an air quality plan.

L.N. 291 of 2002.

(4) In those zones and agglomerations in which the levels of ozone in ambient air are higher than the long-term objectives in sub-regulation (2), but lower than or equal to the target values in sub-regulation (1), the long-term objectives shall be achieved through the implementation of cost-effective measures. These measures shall at least be consistent with all the air quality plans and the programmes in sub-regulation (3).

(5) The levels of ozone in ambient air shall be kept below the long-term objectives in sub-regulation (2) in those zones and agglomerations in which the levels of ozone in ambient air meet these long-term objectives, taking into consideration the transboundary nature of ozone pollution and meteorological conditions.

Techincal Note in Air Quality Control.

26. (1) In order to attain the limit values prescribed by Schedule 7 to the principal regulations, the Competent Authority shall publish a Technical Note on Air Quality Control which will lay the conditions regulating the operation of the plant, for those installations within the scope of regulation 28. The Technical note shall also contain instructions on the calculation of chimney heights.

(2) The Competent Authority shall also prepare a guidance document for the conduction of air quality studies.

Industrial combustion plants. L.N. 234 of 2002.

27. (1) Industrial combustion plants outside the scope of the Integrated Pollution Prevention and Control Regulations, 2002 and which were in operation prior to the coming into force of these regulations shall register with the Competent Authority, within six months from the data of publication of these regulations in the Gazette. Industrial combustion plants operating thereafter shall register not later than six months after the commencement of operations.

(2) The industrial combustion plants registered under sub-regulation (1) shall forward to the Competent Authority any information which the Competent Authority deems relevant regarding the operation of these plants.

Chimney heights.

28. The minimum chimney heights for the installations within the scope of regulation 27 shall be less than those calculated according to the guidelines issued by the Competent Authority.

Provided that the chimney height shall in no case be less than 3 metres above roof level and above 3 metres of any habitable floor within a 25 metre radius.

Quality studies in terms of guidance document.

29. Any air quality studies required under any other regulations issued under the Act shall be carried out according to the guidance document issued under sub-regulation (2) of regulation 26 and shall make reference to the pollutant levels in regulations 19 and 20 hereof.

Air Quality Plan sub-committee.

30. (1) An Air Quality Plan sub-committee is hereby being appointed with an aim of being consulted by the Competent Authority prior to the issuing of the Action Plans under regulation 33(1).

(2) The composition of the sub-committee shall consist of:

(a) the Director of Environmental Health or his representative;

(b) the Director of Environment Protection (MEPA) or his representative;

(c) the Director of Planning (MEPA) or his representative;

(d) the Chief Executive Officer of the Transport Authority or his representative;

(e) the representative of the Malta Chamber of Commerce, Enterprise and Industry;

(f) the representative of the Malta Chamber of Small and Medium Enterprises (SMEs);

(g) the representative of the Local Councils Association;

(h) a representative of the Environmental NGOs;

(i) a representative of the Public Health NGOs.

Air quality report.

31. (1) In order to assess compliance with the limit values, target values and long-term objectives in Schedule 7 to these regulations, the Competent Authority shall compile an air quality report on a yearly basis. The report shall be due on the 31st November of each subsequent year.

(2) The report shall include an analysis of the results of the monitoring of the atmospheric levels of group A and group B pollutants and ozone throughout Malta and shall also summarise the levels exceeding limit values, target values, long-term objectives, information thresholds and alert thresholds, for the relevant averaging periods. This information shall be combined with a summary assessment of the effects of these exceedances.

(3) These reports may also include, where appropriate, further information such as information on other pollutants such as the selected non-regulated ozone precursor substances as listed in part B of Schedule 6 to these regulations.

Air Quality Management Area.

32. (1) The Minister shall, upon the Competent Authority's advice, declare an Air Quality Management Area wherever:

(a) the limit values, target values or long term objectives in Schedule 7 to these regulations plus any relevant margin of tolerance, are not being achieved, keeping in mind the dates by which the individual limit values, target values or long-term objectives are to be achieved; or

(b) it is forecasted, through the use of predictive modelling software that the limit values, target values or long term objectives in Schedule 7 to these regulations plus any relevant margin of tolerance, will be exceeded.

(2) The Air Quality Management area shall be declared by the issuing of an Air Quality Management Order in terms of the details in Schedule 13 to these regulations. The Air Quality Management Order shall be published in the Gazette.

(3) An order under sub-regulation (2) may be revoked if as a result of a subsequent air quality assessment it is shown that the limit values, target values and long term objectives in Schedule 7 to these regulations are being achieved in a location which had been previously designated as an Air Quality Management Area under sub-regulation (1).

Air Quality Action Plan.

33. (1) Where an order under regulation 32(2) comes into effect, the Competent Authority shall, before the expiration of the twelve month period beginning with the publication of the order in the Gazette, prepare an Air Quality Action Plan for the area in question.

(2) The Action Plan referred to in sub-regulation (1) shall, as a minimum, include:

(a) the information in Schedule 11 to these regulations; and

(b) a statement of any time within which the measures comprised in the action plan are to be implemented.

(3) The Action Plans compiled under sub-regulation (1) shall also include all those measures necessary in order to ensure that the limit values in Schedule 7 to these regulations will be complied within the area in question. Action plans shall contain measures which can, through the use of predictive modelling software amongst other techniques, be shown to cause a decrease in the ambient levels of the pollutants concerned in the area in question, and may include amongst other things:

(a) the restriction or rerouting of traffic flows;

(b) temporary bans on the passage of heavy goods vehicles not compliant with certain Euro Standards (to be determined by modelling);

(c) temporary suspension of any commercial or industrial activity having an adverse effect on air quality, such as stone quarrying, stone cutting and polishing, and industrial plants, among others;

(d) measures in relation to ships at berth in nearby ports;

(e) time-limits on the granting of development planning permits; and

(f) suspension of any construction works in the area.

(4) In the compilation of the action plan, the Competent Authority shall consult the sub-committee appointed under regulation 30.

Revision of Action Plan.

34. The Competent Authority may from time to time revise the action plan issued under regulation 33(1).

Consistency of plans.
L.N. 172 of 2010.
L.N. 291 of 2002.
L.N. 193 of 2004.

35. Any action plan issued under regulation 33(1), shall be consistent with any plans required under the -

(a) Large Combustion Plants Regulations, 2010;

(b) National Emission Ceilings for Certain Atmospheric Pollutants Regulations, 2002; and

(c) Assessment and Management of Environment Noise Regulations, 2004,

in order to achieve the relevant environmental objectives.

Short Term Air Quality Action plans.

36. (1) The Competent Authority shall draw up Short Term Air Quality Action plans for those zones and agglomerations for which there is as risk that the pollutant levels exceed one or more of the alert thresholds in Schedule 8 to these regulations.

(2) The Short Term Air Quality Action plan shall indicate the measures to be taken in order to reduce the risk or duration of the exceedances in sub-regulation (1) of these regulations.

Contents of Action plans.

37. The Action plans compiled under regulation 33(1) shall include all those measures necessary in order to ensure that the alert thresholds in Schedule 8 to these regulations will be not be exceeded in the zones and agglomerations in question. These action plans shall contain measures which can through the use of predictive modelling software, amongst other techniques, be shown to cause a decrease in the ambient levels of the pollutants concerned in the area in question, and may include amongst other things:

(a) the restriction or rerouting of traffic flows;

(b) temporary bans on the passage of heavy goods vehicles not compliant with certain Euro Standards (to be determined by modelling);

(c) temporary suspension of any commercial or industrial activity having an adverse effect on air quality are carried out, such as stone quarrying, stone cutting and polishing, and industrial plants, among others;

(d) measures in relation to ships at berth in nearby ports;

(e) time-limits on the granting of development planning permits; and

(f) suspension of any construction works in the area.

Ozone exceedances.

38. In case of exceedances of the alert thresholds for ozone as prescribed by Schedule 8 to these regulations, action plans in regulation 33(1) will only be required if following an assessment carried out by the Competent Authority, it results that taking the national, geographical, meteorological and economic consideration into account the action plan will result in a reduction of the risk, duration or severity of such an exceedance.

Information to be imparted by media.

39. The general public shall be duly and effectively informed by means of radio, television, newspapers and the internet amongst other things, of any exceedances of the information and alert thresholds prescribed by Schedule 8 to these regulations.

Further information to be given to the public.

40. (1) The Competent Authority shall adequately and in good time inform the general public as well as appropriate organisations, including environmental organisations, consumer organisations, organisations representing the interests of sensitive populations, other relevant health care bodies and the relevant industrial federations, of the following:

(a) ambient air quality in accordance with Schedule 12;

(b) any postponement decisions taken pursuant to Article 22(1) of Directive 2008/50/EC of the European Parliament and of the Council of the 21 May 2008 on ambient air quality and cleaner air for Europe;

(c) any exemptions pursuant to Article 22(2) of Directive 2008/50/EC of the European Parliament and of the Council of the 21 May 2008 on ambient air quality and cleaner air for Europe[1];

(d) air quality plans as provided for in Article 22(1) of Directive 2008/50/EC of the European Parliament and of the Council of the 21 May 2008 on ambient air quality and cleaner air for Europe[1] and regulations 33(1) and 36(1) of these regulations.

(2) The Competent Authority shall make the information in sub-regulation (1) hereof available free of charge

by means of any accessible media including the Internet or any other appropriate means of telecommunication, and shall take into account the provisions laid down in Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).

(3) The Competent Authority shall make available to the public the annual reports for all pollutants required by regulation 31(1).

(4) The Competent Authority shall also inform the public of the allocation of responsibilities in terms of the provisions of regulation 3.

Offences.

41. Any person shall be guilty of an offence under these regulations if:-

(a) he fails to comply with any order lawfully given in terms of any provision of these regulations; or

(b) he contravenes any restriction, prohibition or requirement imposed by or under these regulations; or

(c) he conspires, attempts, aids, or abets, any other person by whatever means, including advertising, counselling or procurement to contravene the provisions of these regulations or to fail to comply with any such provisions, including any order lawfully given in terms of any of the provision of these regulations, or to contravene any restriction, prohibition or requirement imposed by or under the said regulations.

Penalties.

42. Any person who commits an offence against these regulations shall, on conviction, be liable:-

(a) on a first conviction to a fine (*multa*) of not less than one thousand two hundred euro (€1,200) but not exceeding two thousand three hundred euro (€2,300);

(b) on a second or subsequent conviction, to a fine (*multa*) of not less than two thousand three hundred euro (€2,300), but not exceeding eleven thousand six hundred euro (€11,600) or to imprisonment for a term not exceeding two years, or to both such fine and imprisonment:

Provided that whenever any person is found guilty of committing an offence under these regulations by means of a vehicle, the owner of the said vehicle, where applicable, is held liable in the same manner and degree:

Provided further that the court shall order any person who has been found guilty of committing an offence against these regulations to pay for the expenses incurred by the public entities and, or other persons acting on their behalf involved in the implementation of these regulations and restitution of the environment as a result of the said offence, the revocation of any permit issued by the Competent Authority and the confiscation of the *corpus delicti*.

Applicability of the Criminal Code. Cap. 9.

43. (1) The provisions of article 23 and subarticle (1) of article 30 of the Criminal Code shall, *mutatis mutandis*, apply to proceedings, in respect of offences against these regulations, so that the disqualification from holding or obtain a licence, permit or authority shall in no case be for less than one year.

(2) Notwithstanding the provisions of article 370 of the Criminal Code, proceedings for an offence against these regulations shall be taken before the Court of Magistrates (Malta) or the Court of Magistrates (Gozo), as the case may be, and shall be in accordance with the provisions of the Criminal Code regulating the procedure before the said courts as courts of criminal judicature.

(3) Notwithstanding the provisions of the Criminal Code, the Attorney General shall always have a right of appeal to the Court of Criminal Appeal from any judgement given by the Court of Magistrates (Malta) or the Court of Magistrates (Gozo) in respect of proceedings for any offence against these regulations.

Revokes L.N. 216 of 2001, L.N. 224 of 2001, L.N. 163 of 2002, L.N. 11 of 2003 and L.N. 292 of 2007.

44. The Ambient Air Quality Assessment and Management Regulations, 2001, the Limit Values for Nitrogen Dioxide, Sulphur Dioxide and Oxides of Nitrogen, Particulate Matter and Lead in Ambient Air Regulations, 2001, the Limit Values for Benzene and Carbon Monoxide in Ambient Air Regulations, 2002, the Ozone in Ambient Air Regulations, 2003 and the Arsenic, Cadmium, Mercury, Nickel and Polycyclic Aromatic Hydrocarbons in Ambient Air Regulations, 2007 are hereby being revoked.

Schedule I

Data quality objectives

A. Data quality objectives for group A pollutants and for ozone.

I. Data quality objectives for ambient air quality assessment

	Sulphur dioxide, nitrogen dioxide and oxides of nitrogen and carbon monoxide	Benzene	Particulate matter (PM_{10}/$PM_{2.5}$) and lead	Ozone and related NO and NO_2
Fixed measurements [(1)]				
Uncertainty	15 %	25%	25%	15%
Minimum data capture	90 %	90%	90%	90% during summer, 75% during winter
Minimum time coverage:				
Urban background and traffic	—	35 %[(2)]	—	—
Industrial sites	—	90 %	—	—
Indicative measurements				
Uncertainty	25 %	30 %	50 %	30 %
Minimum data capture	90 %	90 %	90 %	90 %
Minimum time coverage	14 %[(4)]	14 %[(3)]	14 %[(4)]	> 10 % during summer
Modelling uncertainty				
Hourly	50 %	—	—	50 %
Eight-hour averages	50 %	—	—	50 %
Daily averages	50 %	—	Not yet defined	—
Annual averages	30 %	50 %	50 %	
Objective estimation Uncertainty	75 %	100 %	100 %	75 %

(1). Random measurements instead of continuous measurements for benzene, lead and particulate matter if it can be demonstrated that the uncertainty, including the uncertainty due to random sampling, meets the quality objective of 25% and the time coverage is still larger than the minimum time coverage for indicative measurements. Random sampling must be evenly distributed over the year in order to avoid skewing of results. The uncertainty due to random sampling may be determined by the procedure laid down in ISO 11222 (2002) 'Air Quality – Determination of the Uncertainty of the Time Average of Air Quality Measurements'. If random measurements are used to assess the requirements of the PM_{10} limit value the 90.4 percentile (to be lower than or equal to 50 $\mu g/m^3$) should be evaluated instead of the number of exceedances, which is highly influenced by data coverage.

(2). Distributed over the year to be representative of various conditions for climate and traffic.

(3). One day's measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year.

(4). One measurement a week at random, evenly distributed over the year, or eight weeks evenly distributed over the year.

The uncertainty (expressed at a 95 % confidence level) of the assessment methods will be evaluated in accordance with the principles of the CEN Guide to the Expression of Uncertainty in Measurement (ENV 13005-1999), the methodology of ISO 5725:2004 and the guidance provided in the CEN report 'Air Quality – Approach to Uncertainty Estimation for Ambient Air Reference

Measurement Methods' (CR 14377:2002E). The percentages for uncertainty in the above table are given for individual measurements averaged over the period considered by the limit value (or target value in the case of ozone), for a 95% confidence interval. The uncertainty for the fixed measurements shall be interpreted as being applicable in the region of the appropriate limit value (or target value for ozone).

The uncertainty for modelling is defined as the maximum deviation of the measured and calculated concentration levels for the 90 % individual monitoring points, over the period considered, by the limit value (or target value in the case of ozone), without taking into account the timing of the events. The uncertainty for modelling shall be interpreted as being applicable in the region of the appropriate limit value (or target value in the case of ozone). The fixed measurements that have to be selected for comparison with modelling results shall be representative of the scale covered by the model.

The uncertainty for objective estimation is defined as the maximum deviation of the measured and calculated concentration levels, over the period considered, by the limit value (or target value in the case of ozone), without taking into account the timing of the events.

The requirements for minimum data capture and time coverage do not include losses of data due to the regular calibration or the normal maintenance of the instrumentation.

II. Results of air quality assessment

The following information shall be compiled for zones and agglomerations within which sources other than measurement are employed to supplement information from measurement or as the sole means of air quality assessment:

- a description of the assessment activities carried out,

- the specific methods used, with reference to descriptions of the method,

- the sources of data and information,

- a description of results, including uncertainties and, in particular, the extent of any area or, if relevant, the length of road within the zone or agglomeration over which concentrations exceed any limit value, target value or long term objective plus margin of tolerance, if applicable, and of any area within which concentrations exceed the upper assessment threshold or the lower assessment threshold.

- the population potentially exposed to levels in excess of any limit value for protection of human health.

III. Quality assurance for ambient air quality assessment: data validation

To ensure accuracy of measurements and compliance with data quality objectives laid down in Section I, the appropriate competent authorities and bodies designated pursuant to Regulation 3 shall ensure the following:

- that all measurements undertaken in relation to the assessment of ambient air quality pursuant to Regulations 9,10,11,12,13 and 14 and are traceable in accordance with the requirements set out in Section 5.6.2.2 of the ISO/IEC 17025:2005,

- that institutions operating networks and individual stations have an established quality assurance and quality control system which provides for regular maintenance to assure accuracy of measuring devices,

- that a quality assurance/quality control process is established for the process of data collection and reporting and that institutions appointed for this task actively participate in the related Community-wide quality assurance programmes,

- that the national laboratory, when appointed by the competent authority or body designated pursuant to Regulation 3, that is taking part in Community-wide intercomparisons covering pollutants regulated in these Regulations, is accredited to EN/ISO 17025 by 2010 for the reference methods referred to in Schedule 10. This laboratory shall be involved in the coordination in Malta of the Community wide quality assurance programmes to be organised by the European Commission and shall also coordinate, on the national level, the appropriate realisation of reference methods and the demonstration of equivalence of non-reference methods.

B. Data quality objectives for group B pollutants.

I. Data quality objectives

The following data quality objectives are provided as a guide to quality assurance.

	Benzo(a)pyrene	Arsenic, cadmium and Nickel	Polycyclic aromatic hydrocarbons other than benzo(a)pyrene, total gaseous mercury	Total deposition
– Uncertainty				
Fixed and indicative measurements	50 %	40 %	50 %	70 %
Modelling	60 %	60 %	60 %	60 %
– Minimum data capture	90 %	90 %	90 %	90 %
– Minimum time coverage				
Fixed measurements	33 %	50 %		
Indicative measurements(*)	14 %	14 %	14 %	33 %

(*)Indicative measurement being measurements which are performed at reduced regularity but fulfil other data quality objectives.

The uncertainty (expressed at a 95 % confidence interval) of the methods used for the assessment of ambient air concentrations will be evaluated in accordance with the principles of the CEN Guide to the expression of uncertainty in measurement (ENV 13005-1999), the methodology of ISO 5725:1994, and the guidance provided in the CEN Report, 'Air Quality – Approach to Uncertainty Estimation for Ambient Air Reference Measurement Methods' (CR 14377:2002E). The percentages for uncertainty are given for individual measurements should be interpreted as being applicable in the region of the appropriate target value. Fixed and indicative measurements must be evenly distributed over the year in order to avoid skewing of results.

The requirements for minimum data capture and time coverage do not include losses of data due to regular calibration or normal maintenance of the instrumentation. Twenty-four-hour sampling is required for the measurement of benzo(a)pyrene and other polycyclic aromatic hydrocarbons. With care, individual samples taken over a period of up to one month can be combined and analysed as a composite sample, provided the method ensures that the samples are stable for that period. The three congeners benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene can be difficult to resolve analytically. In such acses they can be reported as sum. Twenty-four-hour sampling is also advisable for the measurement of arsenic, cadmium and nickel concentrations, sampling must be spread evenly over the weekdays and the year. For the measurement of deposition rates monthly or weekly, samples throughout the year are recommended.

Wet-only sampling can be used instead of bulk sampling if it can be demonstrated that the difference between them is within 10%. Deposition rates should be given as $\mu g.m^{-2}.day^{-1}$.

A minimum time coverage lower than that indicated in the table above may be applied as long as it is not lower than 14% for foxed measurements and 6% for indicative measurements and provided that it can be demonstrated that the 95% expanded uncertainty for the annual mean, calculated from the data quality objectives in the table above according to ISO 11222:2002 – 'Determination of uncertainty of the time average of air quality measurements' will be met.

II. Requirements for air quality models

Where an air quality model is used for assessment, references to descriptions of the model and information on the uncertainty shall be compiled. The uncertainty for modelling is defined as the maximum deviation of the measured and calculated concentration levels, over a full year, without taking into account the timing of events.

III. Requirements for objective estimation techniques

Where objective estimation techniques are used, the uncertainty shall not exceed 100%.

IV. Standardisation

For substances to be analysed in the PM10 fraction, the sampling refers to ambient conditions.

Schedule 2

Determination of requirements for assessment of concentrations of group A and group B pollutants in ambient air within a zone or agglomeration

A. **Upper and lower assessment thresholds**

The following upper and lower assessment thresholds apply:

1. *Sulphur dioxide*

	Health protection	Vegetation protection
Upper assessment threshold	60 % of 24-hour limit value (75 µg/m^3, not to be exceeded more than 3 times in any calendar year)	60 % of winter critical level (12 µg/m^3)
Lower assessment threshold	40 % of 24-hour limit value (50 µg/m^3, not to be exceeded more than 3 times in any calendar year)	40 % of winter critical level (8 µg/m^3)

2. *Nitrogen dioxide and oxides of nitrogen*

	Hourly limit value for the protection of human health (NO_2)	Annual limit value for the protection of human health (NO_2)	Annual limit value for the protection of vegetation and natural ecosystems (NO_X)
Upper assessment threshold	70 % of limit value (140 µg/m^3, not to be exceeded more than 18 times in any calendar year)	80 % of limit value (32 µg/m^3)	80 % of critical level (24 µg/m^3)
Lower assessment threshold	50 % of limit value (100 µg/m^3, not to be exceeded more than 18 times in any calendar year	65 % of limit value (26 µg/m^3)	65 % of critical level (19.5 µg/m^3)

3. *Particulate matter (PM_{10}/$PM_{2.5}$)*

	24-hour average PM_{10}	Annual average PM_{10}	Annual average $PM_{2.5}$(1)
Upper assessment threshold	70 % of limit value (35 µg/m^3, not to be exceeded more than 35 times in any calendar year)	70 % of limit value (28 µg/m^3)	70 % of limit value (17µg/m^3)
Lower assessment threshold	50 % of limit value (25 µg/m^3, not to be exceeded more than 35 times in any calendar year	50 % of limit value (20 µg/m^3)	50 % of limit value (12 µg/m^3)

(1) The upper assessment threshold and the lower assessment threshold for $PM_{2.5}$, do not apply to measurements to assess compliance with the $PM_{2.5}$ exposure reduction target for the protection of human health.

4. *Lead*

	Annual average
Upper assessment threshold	70% of limit value (0.35 μg/m^3)
Lower assessment threshold	50% of limit value (0.25 μg/m^3)

5. *Benzene*

	Annual average
Upper assessment threshold	70% of limit value (3.5 μg/m^3)
Lower assessment threshold	40% of limit value (2 μg/m^3)

6. *Carbon monoxide*

	Annual average
Upper assessment threshold	70% of limit value (7 mg/m^3)
Lower assessment threshold	50% of limit value (5 mg/m^3)

7. *Group B pollutants*

	Arsenic	Cadmium	Nickel	B(a)P
Upper assessment threshold in percent of the target value.	60 % (3.6 ng/m^3)	60 % (3 ng/m^3)	70 % (14 ng/m^3)	60 % (0.6 ng/m^3)
Lower assessment threshold in percent of the target value.	40 % (2.4 ng/m^3)	40 % (2 ng/m^3)	50 % (10 ng/m^3)	40 % (0.4 ng/m^3)

B. **Determination of exceedances of upper and lower assessment thresholds**

Exceedances of upper and lower assessment thresholds must be determined on the basis on concentrations during the previous five years where sufficient data are available. An assessment threshold will be deemed to have been exceeded if it has been exceeded during:

a) at least three separate years (for group A pollutants);

or

b) during at least three calendar years (for group B pollutants)

out of those previous five years.

Where fewer than five years' data are available, measurement campaigns of short duration during the period of the year and at locations likely to be typical of the highest pollution levels may be combined with results obtained from information from emission inventories and modelling to determine exceedances of the upper and lower assessment thresholds.

Schedule 3

Location of sampling points for group A and group B pollutants and for ozone.

A. **General requirements for the assessment of ambient air quality for group A pollutants.**

Ambient air quality shall be assessed in all zones and agglomerations with the following criteria:

Ambient air quality shall be assessed at all locations except those listed in paragraph 2, in accordance with the criteria established by Sections B and C for the location of sampling points for fixed measurement. The principles established by Sections B and C shall also apply in so far as they are relevant in identifying the specific locations in which concentration of the relevant pollutants are established where ambient air quality is assessed by indicative measurement and modelling.

Compliance with the limit values directed at the protection of human health shall not be assessed at the following locations:

(a) any locations situated within areas where members of the public do not have access and there is no fixed habitation;

(b) in accordance with the appropriate definition in Regulation 2, on factory premises or at industrial installations to which all relevant provisions concerning health and safety at work apply;

(c) on the carriageway of roads; and on the central reservations of roads except where there is normally pedestrian access to the central reservation.

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B. **Macroscale siting.**

I. Sampling points for the measurement of concentrations in ambient air of group A pollutants

1. Protection of human health

(a). Sampling points directed at the protection of human health shall be sited in such a way as to provide data on the following:

- the areas within zones and agglomerations 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 value(s),

- levels in other areas within the zones and agglomeration which are representative of the exposure of the general population.

(b). Sampling points shall in general be sited in such a way as to avoid measuring very small micro-environments in their immediate vicinity, which means that the sampling point must be sited in such a way that the air sampled is representative of air quality for a street segment no less than 100 m length at traffic-orientated sites and at least 250 m × 250 m at industrial sites where feasible;

(c). Urban background locations shall be located so that their pollution level is influenced by the integrated contribution from all sources upwind of the station. Their pollution level should not be dominated by a single source unless such a situation is typical for a large urban area. Those sampling points shall, as a general rule, be representative for several square kilometres;

(d). 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. sites closer than five kilometres;

(e). Where contributions from industrial sources are to be assessed, at least one sampling point shall be installed down-wind of the source in the nearest residential area. Where background concentration is not known, an additional sampling point shall be situated within the main wind direction;

(f). Sampling points shall, where possible, also be representative of similar locations not in their immediate vicinity;

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

2. Protection of vegetation and natural ecosystems

Sampling points targeted at the protection of vegetation and natural ecosystems shall be sited more than 20 km away from agglomerations or more than 5 km away from other built-up areas, industrial installations or motorways or major roads with traffic counts of more than 50,000 vehicles per day, which means that a sampling point must be sited in such a way that the air sampled must be representative of air quality in a surrounding area of at least 1000 km^2. A sampling point may be sited at a lesser distance or be representative of air quality in a less extended area, taking account of geographical conditions or of the opportunities to protect particularly vulnerable areas.

Account shall be taken of the need to assess air quality on islands.

II. Sampling points for the measurements of concentrations in ambient air and deposition rates of group B pollutants.

The sites of sampling points should be selected in such a way as to:

- Provide data on the areas within zones and agglomerations where the population is likely to be directly or indirectly exposed to the highest concentrations averaged over a calendar year;

- Provide data on levels in other areas within zones and agglomerations which are representative of the exposure or the general population;

- Provide data on deposition rates representing the indirect exposure of the population through the food chain.

Sampling points shall in general be sited in such a way as to avoid measuring very small micro-environments in their immediate vicinity. As a guideline, a sampling point should be representative of air quality in surrounding areas of no less than 200 m^2 at traffic-orientated sites and at least 250 m × 250 m at industrial sites, where feasible and several square kilometres at urban background sites.

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 concentration is not known an additional sampling point shall be situated within the main wind direction. In particular where Regulation 21
applies, the sampling points should be sited such that the application of BAT can be monitored.

Sampling points should also, where possible, be representative of similar locations not in their immediate vicinity. Where appropriate they should be co-located with sampling points for PM_{10}.

III. Sampling points for the assessments of ozone concentrations

The following apply to fixed measurements:

Type of station	Objectives of measurement	Representativeness	Macroscale siting criteria
Urban	Protection of human health: To assess the exposure of the urban population to ozone, i.e. where population density and ozone concentration are relatively high and representative of the exposure of the general population	A few km^2	Away from the influence of local emissions such as traffic, petrol stations, etc.; Vented locations where well mixed levels can be measured; Locations such as residential and commercial areas of cities, parks (away from the trees), big streets or squares with very little or no traffic, open areas characteristic of educational, sports or recreation facilities
Suburban	Protection of human health and vegetation: To assess the exposure of the population and vegetation located in the outskirts of the agglomeration, where the highest ozone levels to which the population and the vegetation are likely to be directly or indirectly exposed occur	Some tens of km^2	At a certain distance from the area of maximum emissions, downwind following the main wind direction/directions during conditions favourable to ozone formation; Where population, sensitive crops or natural ecosystems located in the outer fringe of an agglomeration are exposed to high ozone levels; Where appropriate, some suburban stations also upwind of the area of maximum emissions such as industrial installations and roads; At open area sites
Rural	Protection of human health and vegetation: to assess the exposure of population, crops and natural ecosystems to sub regional scale ozone concentrations	Sub-regional levels (some hundreds of km^2)	Stations can be located in small settlements and/or areas with natural ecosystems, forests or crops; representative for ozone away from the influence of immediate local emissions such as industrial installations and roads; at open area sites
Rural background	Protection of vegetation and human health: to assess the exposure of crops and natural ecosystems to regional-scale ozone concentrations as well as exposure of the population	Regional/national/continental levels (1000 to 10000 km^2)	Station located in areas with lower population density, e.g. with natural ecosystems, forests, at a distance of at least 20 km from urban and industrial areas and away from local emissions; avoid locations which are subject to locally enhanced formation of ground-near inversion conditions; coastal sites with pronounced diurnal wind cycles of local character are not recommended.

(1) Sampling points should, where possible, be representative of similar locations not in their immediate vicinity.

For rural and rural background stations the location shall, where appropriate, be coordinated with the monitoring requirements of Commission Regulation (EC) No 1737/2006 of 7 November 2006 laying down detailed rules for the implementation of Regulation (EC) No 2152/2003 of the European Parliament and of the Council concerning monitoring of forests and environmental interactions in the Community[(1)].

C. **Microscale siting.**

I. Sampling points for the measurement of concentrations in ambient air of group A pollutants

In so far as is practicable, the following shall apply:

- the flow around the inlet sampling probe shall be unrestricted (free in an arc of at least 270°) without any obstructions affecting the airflow in the vicinity of the sampler (normally 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),

- in general, the inlet sampling point shall be between 1,5 m (the breathing zone) and 4 m above the ground. 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,

- 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,

- the sampler's exhaust outlet shall be positioned so that recirculation of exhaust air to the sampler inlet is avoided,

- for all pollutants, traffic-orientated sampling probes shall be at least 25 m from the edge of major junctions and no more than 10 m from the kerbside.

II. Sampling points for the measurement of concentrations in ambient air and deposition rates of group B pollutants

In so far as is practicable, the following shall apply:

- the flow around the inlet sampling probe should be unrestricted, without any obstructions affecting the airflow in the vicinity of the sampler (normally 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);

- in general, the inlet sampling point should be between 1,5 m (the breathing zone) and 4 m above the ground. 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;

- the inlet probe should not be positioned in the immediate vicinity of sources in order to avoid direct intake of emissions unmixed with ambient air;

- the sampler's exhaust outlet should be positioned so that recirculation of exhaust air to the sample inlet is avoided;

- traffic-orientated sampling points should be at least 25 metres from the edge of major junctions and at least 4 m from the centre of the nearest traffic lane; inlets should be sited so as to be representative of air quality near the building line;

- for the deposition measurements in rural background areas, the EMEP guidelines and criteria should be applied as far as practicable and where not provided for in the Annexes.

The following factors may also be taken into account in the microscale siting of the sampling points for the measurement of the concentrations in ambient air of group A and group B pollutants and deposition rates of group B pollutants:

- interfering sources
- security
- access
- availability of electrical power and telephone communications
- visibility of the site in relation to its surroundings

- safety of the public and operators
- the desirability of co-locating sampling points for different pollutants
- planning requirements.

III. Sampling points for the measurement of concentrations in ambient air of ozone

In so far as is practicable the procedure on microscale siting in Section C of Annex III shall be followed, ensuring also that the inlet probe is positioned well away from such sources as furnaces and incineration flues and more than 10 m from the nearest road, with distance increasing as a function of traffic intensity.

D. **Documentation and review of site selection.**

I. Group A and group B pollutants

The site-selection procedures shall be fully documented at the classification stage by such means as compass-point photographs of the surrounding area and a detailed map. Sites shall be reviewed at regular intervals with repeated documentation to ensure that selection criteria remain valid over time.

II. Ozone

The procedures in paragraph I above shall be followed, applying proper screening and interpretation of the monitoring data in the context of the meteorological and photochemical processes affecting the ozone concentrations measured at the respective sites.

Schedule 4

Measurements at rural background locations irrespective of concentration

A. **Objectives**

The main objectives of such measurements are to ensure that adequate information is made available on levels in the background. This information is essential to judge the enhanced levels in more polluted areas (such as urban background, industry related locations, traffic related locations), assess the possible contribution from long-range transport of air pollutants, support source apportionment analysis and for the understanding of specific pollutants such as particulate matter. It is also essential for the increased use of modelling also in urban areas.

B. **Substances**

Measurement of $PM_{2.5}$ must include at least the total mass concentration and concentrations of appropriate compounds to characterise its chemical composition. At least the list of chemical species given below shall be included.

SO_4^{2-}	Na^+	NH_4^+	Ca^{2+}	Elemental carbon (EC)
NO_3^-	K^+	Cl^-	Mg^{2+}	Organic carbon (OC)

C. **Siting**

Measurements should be taken in particular in rural background areas in accordance with parts A, B and C of Schedule 3.

Schedule 5

A. Criteria for determining minimum numbers of sampling points for fixed measurements of concentrations of group A pollutants in ambient air

I. 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 and agglomerations where fixed measurement is the sole source of information.

1. *Diffuse sources*

Population of agglomeration or zone	If maximum concentrations exceed the upper assessment threshold (1)		If maximum concentrations are between the upper and lower assessment thresholds	
(thousands)	Pollutants except PM	PM(2) (sum of PM_{10} and $PM_{2.5}$)	Pollutants except PM	PM(2) (sum of PM_{10} and $PM_{2.5}$)
0 – 249	1	2	1	1
250 – 499	2	3	1	2
500 – 749	2	3	1	2

(1) For nitrogen dioxide, particulate matter, benzene and carbon monoxide: to include at least one urban background monitoring station and one traffic-orientated station provided this does not increase the number of sampling points. For these pollutants, the total number of urban-background stations and the total number of traffic oriented stations required under Section A(1) shall not differ by more than a factor of 2. Sampling points with exceedances of the limit value for PM_{10} within the last three years shall be maintained, unless relocation is necessary owing to special circumstances, in particular spatial development.

(2) Where $PM_{2.5}$ and PM_{10} are measured in accordance with regulation 18 at the same monitoring station, these shall count as two separate sampling points. The total number of $PM_{2.5}$ and PM_{10} sampling points required under Section A(1) shall not differ by more than a factor of 2, and the number of $PM_{2.5}$ sampling points in the urban background of agglomerations and urban areas shall meet the requirements under Section B of Schedule 5.

2. *Diffuse sources*

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

II. Minimum number of sampling points for fixed continuous measurements to assess compliance with the $PM_{2.5}$ exposure reduction target for the protection of human health.

One sampling point per million inhabitants summed over agglomerations and additional urban areas in excess of 100,000 inhabitants shall be operated for this purpose. Those sampling points may coincide with sampling points under section A.

III. Minimum number of sampling points for fixed measurements to assess compliance with critical levels for the protection of vegetation in zones other than agglomerations.

If maximum concentrations exceed upper assessment threshold	If maximum concentrations are between upper and lower assessment threshold
1 station every 20,000 km^2	1 station every 40,000 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 vegetation.

B. Criteria for determining minimum numbers of sampling points for fixed measurements of concentrations of group B pollutants in ambient air

Minimum number of sampling points for fixed measurement to assess compliance with target values for the protection of human health in zones and agglomerations where fixed measurement is the sole source of information.

1. *Diffuse sources*

Population of agglomeration or zone (thousands)	If maximum concentrations exceed the upper assessment threshold ([1])		If maximum concentrations are between the upper and lower assessment thresholds	
	As, Cd, Ni	B(a)P	As, Cd, Ni	B(a)P
0 – 749	1	1	1	1

([1])To include at least one urban-background station and for benzo(a)pyrene also one traffic-orientated station provided this not increase the number of sampling points.

2. *Point sources*

For the assessment of pollution in the vicinity of point sources, the number of sampling points for fixed measurement should be determined taking into account emission densities, the likely distribution patterns of ambient air pollution and potential exposure of the population. The sampling points should be sited such that the application of BAT as defined by Article 2(11) of Directive 96/61/EC can be monitored.

C. Criteria for determining minimum numbers of sampling points for fixed measurements of ozone

I. Minimum number of sampling points for fixed continuous measurements to assess compliance with target values, long-term objectives and information and alert thresholds where such measurements are the sole source of information.

Population (× 1000)	Agglomerations (urban and suburban) ([1])	Other zones (suburban and rural) ([1])	Rural background
< 250		1	1 station/ 50,000 km^2 as an average density over all zones
< 500	1	2	
< 1000	2	2	

(1) 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 shall be located in suburban areas.

(2) 1 station per 25,000 km^2 for complex terrain is recommended.

II. Minimum number of sampling points for fixed measurements for zones and agglomerations attaining the long term objectives

The number of sampling points for ozone shall, in combination with other means of supplementary assessment such as air quality modelling and collocated 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 Section A. Where information from fixed measurement stations is the sole source of information, at least one monitoring station shall 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 shall ensure adequate assessment of ozone concentrations against long-term objectives. The number of rural background stations shall be one per 100 000 km^2.

Schedule 6

Measurement of ozone precursor substances

A. **Objectives**

The main objectives of such measurements are to analyse any trend in ozone precursors, to check the efficiency of emission reduction strategies, to check the consistency of emission inventories and to help attribute emission sources to observed pollution concentrations.

An additional aim is to support the understanding of ozone formation and precursor dispersion processes, as well as the application of photochemical models.

B. **Substances**

Measurement of ozone precursor substances shall include at least nitrogen oxides (NO and NO_2), and appropriate volatile organic compounds (VOC). A list of volatile organic compounds recommended for measurement is given below:

	1-Butene	Isoprene	Ethyl benzene
Ethane	Trans-2-Butene	n-Hexane	m + p-xylene
Ethylene	cis-2-Butene	i-Hexane	o-Xylene
Acetylene	1,3-Butadiene	n-Heptane	1,3,4-Trimethylebenzene
Propane	n-Pentane	n-Octane	1,2,3-Trimethylebenzene
Propene	i-Pentane	i-Octane	1,3,5-Trimethylebenzene
n-Butane	1-Pentene	Benzene	Formaldehyde
i-Butane	2-Pentene	Toulene	Total non-methane hydrocarbons

C. **Siting**

Measurements shall be taken in particular in urban or suburban areas at any monitoring site set up in accordance with the requirements of this Directive and considered appropriate with regard to the monitoring objectives referred to in Section A.

Schedule 7

Limit values, target values and long-term objectives

A. **Limit values, information and alert thresholds, critical levels for group A pollutants excluding $PM_{2.5}$**

I. **Criteria**

Without prejudice to Schedule 1, the following criteria shall be used for checking validity when aggregating data and calculating statistical parameters:

Parameter	Required proportion of valid data
One hour values	75 % (i.e. 45 minutes)
Eight hour values	75 % of values (i.e. 6 hours)
Maximum daily 8-hour mean	75 % of the hourly running eight hour averages (i.e. 18 eight hour averages per day)
24-hour values	75 % of the hourly averages (i.e. at least 18 hour values)
Annual mean	90 % ([1]) of the one hour values or (if not available) 24-hour values over the year

(1) The requirements for the calculation of annual mean do not include losses of data due to the regular calibration or the normal maintenance of the instrumentation.

II. **Limit values**

Averaging Period	Limit Value	Margin of Tolerance	Date by which limit value is to be met
Sulphur dioxide			
One hour	350 µg/m^3, not to be exceeded more than 24 times a calendar year	150 µg/m^3 (43%)	- (1)
One day	125 µg/m^3, not to be exceeded more than 3 times a calendar year	None	- (1)
Nitrogen dioxide			
One hour	200 µg/m^3, not to be exceeded more than 18 times a calendar year	50 % on 19 July 1999, decreasing on 1 January 2001 and every 12 months thereafter by equal annual percentages to reach 0 % by 1 January 2010	1 January 2010
Calendar year	40 µg/m^3	50 % on 19 July 1999, decreasing on 1 January 2001 and every 12 months thereafter by equal annual percentages to reach 0 % by 1 January 2010	1 January 2010
Benzene			
Calendar year	5 µg/m^3	5 µg/m^3 (100 %) on 13 December 2000, decreasing on 1 January 2006 and every 12 months thereafter by 1 µg/m3 to reach 0 % by 1 January 2010	1 January 2010
Carbon monoxide			
Maximum daily eight hour mean (2)	10 µg/m^3	60 %	- (1)
Lead			
Calendar year	0.5 µg/m^3 (3)	100 %	- (3)
PM_{10}			
One day	50 µg/m^3, not to be exceeded more than 35 times a calendar year	50 %	- (1)
Calendar year	40 µg/m^3	20 %	- (1)

(1) Already in force since January 2005

(2) The maximum daily eight hour mean concentration will 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.

(3) Already in force since 1 January 2005. Limit value to be met only by 1 January 2010 in the immediate vicinity of the specific industrial sources situated on sites contaminated by decades of industrial activities. In such cases, the limit value until 1 January 2010 will be 1.0 µg/m^3. The area in which higher limit values apply must not extend further than 1000 m from such specific sources.

B. **National exposure reduction target, target value and limit value for $PM_{2.5}$**

I. **Average Exposure Indicator**

The Average Exposure Indicator expressed in $\mu g/m^3$ (AEI) shall be based upon measurements in urban background locations in the zones and in the agglomerations. It should be assessed as a three-calendar year running annual mean concentration averaged over all sampling points established pursuant to Part II of Section A of Schedule 5. The AEI for the reference year 2010 shall be the mean concentration of the years 2008, 2009 and 2010.

However, where data are not available for 2008, the mean concentration of the years 2009 and 2010 or the mean concentration of the years 2009, 2010 and 2011 may be used.

The AEI for the year 2020 shall be the three-year running mean concentration averaged over all those sampling points for the years 2018, 2019 and 2020. The AEI is used for the examination whether the national exposure reduction target is met.

The AEI for the year 2015 shall be the three-year running mean concentration averaged over all those sampling points for the years 2013, 2014 and 2015. The AEI is used for the examination whether the exposure concentration obligation
is met.

II. **National Exposure reduction target**

Exposure reduction target relative to the AEI in 2010		Year by which the exposure reduction target is to be met
Initial concentration in µg/m^3	Reduction target in percent	2020
< 8.5 = 8.5	0 %	
> 8.5 - < 13	10 %	
= 13 - < 18	15 %	
= 18 - < 22	20 %	
≥ 22	All appropriate measures to achieve 18 µg/m^3	

Where the AEI in the reference year is 8.5 µg/m^3 or less the exposure reduction target shall be zero. The reduction target shall be zero also in cases where the AEI reaches the level of 8.5 µg/m^3 at any point of time during the period from 2010 to 2020 and is maintained at or below that level.

III. **National Exposure reduction target**

Exposure concentration obligation	Year by which the obligation value is to be met
20 µg/m^3	2015

IV. **Target value**

Averaging period	Target value	Date by which target value should be met
Calendar year	25 µg/m^3	1 January 2010

V. **Limit value**

Averaging Period	Limit value	Margin of tolerance	Date by which limit value is to be met
Stage 1			
Calendar year	25 µg/m^3	20% on 11 June 2008, decreasing on the next 1 January and every 12 months thereafter by equal annual percentages to reach 0 % by January 2015	1 January 2015
Stage 2 ([1])			
Calendar year	20 µg/m^3		1 January 2020
(1) Stage 2 – indicative limit value to be reviewed in 2013.			

C. **Target values for group B pollutants**

Pollutant	Target value (1)
Arsenic	6 ng/m^3
Cadmium	5 ng/m^3
Nickel	20 ng/m^3
Benzo(a)pyrene	1 ng/m^3

(1) For the total content in the PM_{10} fraction averaged over a calendar year.

D. **Ozone target values and long term objectives**

I. **Definitions and criteria**

1. *Definitions*

AOT40 (expressed in (µg/m^3) . hours) means the sum of the difference 80 µg/m^3 (= 40 parts per billion) and 80 µg/m^3 over a given period between 0800 hrs and 2000 hrs Central European Time (CET) each day.

2. *Criteria*

The following criteria shall be used for checking validity when aggregating data and calculating statistical parameters:

Parameter	Required proportion of valid data
One hour values	75 % (i.e. 45 minutes)
Eight hour values	75 % of values (i.e. six hours)
Maximum daily 8 hours mean from hourly running 8 hours	75 % of the hourly running eight hours averages (i.e. 18 eight-hourly averages per day)
AOT 40	90 % of the one hour values over the time period defined for calculating the AOT40 value (1)
Annual mean	75 % of the one hour values over summer (April to September) and 75 % over winter (January to March, October to December) seasons separately
Number of exceedances and maximum values per month	90 % of the daily maximum eight hours mean values (27 available daily values per month) 90 % of the one hour averages between 0800 hrs and 2000 hrs CET
Number of exceedances and maximum values per year	five out of six months over the summer season (April to September)

(1) In cases where all possible measured data are not available, the following factor shall be used to calculate AOT40 values:

$$AOT40_{estimate} = AOT40_{measured} \times \frac{\text{total possible number of hours } (^*)}{\text{number of measured hourly values}}$$

* being the number of hours within the time period of AOT40 definition, (i.e. 0800 hrs to 2000 hrs CET from 1 May to 31 July each year, for vegetation protection and from 1 April to 30 September each year for forest protection).

II. **Target values**

Objective	Averaging period	Target value	Date by which target value should be met (1)
Protection of human health	Maximum daily eight-hour mean (2)	120 µg/m^3 not to be exceeded on more than 25 days per calendar year averaged over three years (3)	1.1.2020
Protection of vegetation	May to July	AOT40 (calculated from 1 h values). 18,000 µg/m^3.hr averaged over five years(3)	1.1.2020

(1) Compliance with target values will be assessed as of this date. That is, 2010 will be the first year the data for which is used in calculating compliance over the following three or five years, as appropriate.

(2) 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. i.e. the first calculation period for any one day will be the period from 1700 hrs on the previous day to 0100 hrs on that day; the last calculation period for any one day will be the period from 1600 hrs to 0000 hrs on the day.

(3) 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 as follows:

- for the target value for the protection of human health: valid data for one year,
- for the target value for the protection of vegetation: valid data for three years.

III. **Longterm objectives**

Objective	Averaging period	Longterm objective	Date by which the longterm objective should be met
Protection of human health	Maximum daily eight-hour mean within a calendar year	120 µg/m^3	not defined
Protection of vegetation	May to July	AOT40 (calculated from 1 h values) 6,000 µg/m^3.hr	not defined

Schedule 8

Information and alert thresholds

A. **Alert thresholds for sulphur dioxide and nitrogen dioxide**

To be measured over three consecutive hours at locations representative of air quality over at least 100 km^2 or an entire zone or agglomeration, whichever is the smaller.

Pollutant	Alert threshold
Sulphur dioxide	500 $\mu g/m^3$
Nitrogen dioxide	400 $\mu g/m^3$

B. **Information and Alert thresholds for ozone**

Purpose	Averaging period	Threshold
Information	1 hour	180 $\mu g/m^3$
Alert	1 hour (1)	240 $\mu g/m^3$

(1) For the implementation of Regulation 32, the exceedance of the threshold is to be measured or predicted for three consecutive hours.

Schedule 9

Critical levels for the protection of vegetation

Averaging period	Critical level	Margin of tolerance
Sulphur dioxide		
Calendar year and winter (1 October to 31 March)	20 µg/m^3	None
Nitrogen dioxide		
Calendar year	30 µg/m^3	None

Schedule 10

Reference methods for the assessment of concentrations of group A pollutants, group B pollutants and ozone

A. **Reference measurement methods**

1. *Reference method for the sampling and analysis of arsenic, cadmium and nickel*

The reference method for the measurement of arsenic, cadmium and nickel concentrations in ambient air is currently being standardised by CEN and shall be based on manual PM_{10} sampling equivalent to EN 12341, followed by digestion of the samples and analysis by Atomic Absorption Spectrometry or ICP Mass Spectrometry. In the absence of a CEN standardised method, an ISO standard method or any national standard method from any of the 27 EU Member States can be used.

2. *Reference method for the sampling of benzene*

The reference method for the measurement of benzene is that described in EN 14662:2005, parts 1, 2 and 3 'Ambient air quality – Standard method for measurement of benzene concentrations'.

3. *Reference method for the measurement of carbon monoxide*

The reference method for the measurement of carbon monoxide is that described in EN 14626:2005 'Ambient air quality – Standard method for the measurement of the concentration of carbon monoxide by non-dispersive infrared spectroscopy'.

4. *Reference method for the measurement of lead*

The reference method for the sampling of lead is that described in section A(8) of this schedule. The reference method for the measurement of lead is that described in EN 14902:2005 'Standard method for measurement of Pb/Cd/As/Ni in the PM_{10} fraction of suspended matter'.

5. *Reference method for the sampling and analysis of mercury*

The reference method for the measurement of total gaseous mercury concentrations in ambient air shall be an automated method based on Atomic Absorption Spectrometry or Atomic Fluorescence Spectrometry. In the absence of a CEN standardised method, an ISO standard method or any national standard method from any of the 27 EU Member States can be used.

6. *Reference method for the measurement of nitrogen dioxide and oxides of nitrogen*

The reference method for the measurement of nitrogen dioxide and oxides of nitrogen is that described in EN 14211:2005 'Ambient air quality – Standard method for the measurement of the concentration of nitrogen dioxide and nitrogen monoxide by chemiluminescence'.

7. *Reference method for measurement of ozone*

The reference method for the measurement of ozone is that described in EN 14625:2005 'Ambient air quality – Standard method for the measurement of the concentration of ozone by ultraviolet photometry'.

8. *Reference method for the sampling and measurement of PM_{10}*

The reference method for the sampling and measurement of PM_{10} is that described in EN 12341:1999 'Air Quality – Determination of the PM_{10} fraction of suspended particulate matter – Reference method and field test procedure to demonstrate reference equivalence of measurement methods'.

9. *Reference method for the sampling and measurement of $PM_{2.5}$*

The reference method for the sampling and measurement of $PM_{2.5}$ is that described in EN 14907:2005 'Standard gravimetric measurement method for the determination of $PM_{2.5}$ mass fraction of suspended particulate matter'.

10. *Reference method for the sampling and analysis of polycyclic aromatic hydrocarbons*

The reference method for the measurement of benzo(a)pyrene concentrations in ambient air is currently being standardised by CEN and shall be based on manual PM_{10} sampling equivalent to EN 12341. In the absence of a CEN standard method, for benzo(a)pyrene or other polycyclic aromatic hydrocarbons (group C pollutants), an ISO standard method such as ISO 12884 or any national standard method from any of the 27 EU Member States can be used.

11. *Reference method for the measurement of sulphur dioxide*

The reference method for the measurement of sulphur dioxide is that described in EN 14212:2005 'Ambient air quality – Standard method for the measurement of the concentration of sulphur dioxide by fluorescence'.

12. *Reference method for the sampling and analysis of the deposition rates of group B pollutants*

The reference method for the sampling of deposited group B pollutants shall be based on the exposition of cylindrical deposit gauges with standardised dimensions. In the absence of a CEN standardised method, any national standard method from any of the 27 EU Member States can be used.

B. **Demonstration of equivalence**

1. It is possible to use any other method which be shown to give results which are equivalent to any of the methods referred to in Section, or in the case of particulate matter, any other method which displays a consistent relationship to the reference method. In that event results achieved by that method must be corrected to produce results equivalent to those that would have been achieved by using the reference method.

2. Whenever possible the correction factor should also be applied retroactively to past measurement data in order to achieve better data comparability.

C. **Standardisation**

For gaseous pollutants the volume must be standardised at a temperature of 293 K and an atmospheric pressure of 101.3 kPa. For particulate matter and substances to be analysed in particulate matter (e.g. lead) the sampling volume refers to ambient conditions in terms of temperature and atmospheric pressure at the date of measurements.

D. **Standardisation**

All new equipment purchased for the scope of these regulations must comply with the reference method or equivalent by 11 June 2010.

All equipment used in fixed measurements must comply with the reference method or equivalent by 11 June 2013.

E. **Mutual recognition of data**

In carrying out the type approval to demonstrate that the equipment meets the performance requirements of the reference methods listed in Section A, competent authorities and bodies designated pursuant to Regulation 3 shall accept test reports issued in any one of the other 27 EU Member States by laboratories accredited to EN ISO 17025 for carrying out such testing.

Schedule 11

Information to be included in the national air quality plans for improvement in ambient air quality

Information to be provided under Regulation 29(2)

1. *Localisation of excess pollution*
   (a) City (map)
   (b) Measuring station (map, geographical coordinates).

2. *General information*
   (a) Type of zone (city, industrial or rural area);
   (b) Estimate of the polluted area (km^2) and of the population exposed to the pollution;
   (c) Useful climatic data;
   (d) Relevant data on topography;
   (e) Sufficient information on the type of targets requiring protection in the zone.

3. *Responsible authorities*
   Names and address of persons responsible for the development and implementation of improvement 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;
   (c) techniques for the assessment

5. *Origin of pollution*
   (a) List the main emission sources responsible for pollution (map);
   (b) Total quantity of emissions from these sources (tonnes/year);
   (c) Information on pollution imported from other regions.

6. *Analysis of situation*
   (a) Details of those factors responsible for the exceedance (e.g. transport, including cross-border transport, formation of secondary pollutants in the atmosphere);
   (b) Details of possible measures for the improvement of air quality.

7. *Details of those measures or projects for improvements which existed prior to 11 June 2008, i.e.*:
   (a) National, international measures

(b) Observed effects of these measures.

8. *Details of those measure or projects adopted with a view to reducing pollution following the entry into force of this regulation:*

(a) Listing and description of all the measures set out in the project;

(b) Timetable for implementation;

(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 publications, documents, work, etc. used to supplement information required under this Schedule.*

Schedule 12

Public Information

1. Up-to-date information on ambient concentrations of the pollutants covered by these regulations shall be routinely made available to the public.

2. Ambient concentrations provided shall be presented as average values according to the appropriate averaging period as laid down in Schedule 7. The information shall at least indicate any levels exceeding air quality objectives including limit values, target values, alert thresholds, information thresholds or long term objectives of the regulated pollutant. It shall also provide a short assessment in relation to the air quality objectives of the regulated pollutant. It shall also provide a short assessment in relation to the air quality objectives and appropriate information regarding effects on health, or, where appropriate, vegetation.

3. Information on ambient concentrations of sulphur dioxide, nitrogen dioxide, particulate matter (at least PM_{10}), ozone and carbon monoxide shall be updated on at least a daily basis, and, wherever practicable, information shall be updated on an hourly basis. Information on ambient concentrations of lead and benzene, presented as an average value for the last 12 months, shall be updated on a three-monthly basis, and on a monthly basis, wherever practicable.

4. Timely information about actual or predicted exceedances of alert thresholds and any information threshold is provided to the public. The details supplied shall include at least the following information:

(a) Information on observed exceedance(s):
- Location or area of the exceedance,
- Type of threshold exceeded (information or alert),
- Start time and duration of the exceedance,
- Highest one hour concentration and in addition highest eight hour mean concentration in the case of ozone:

(b) Forecast for the following afternoon/day(s):
- Geographical area of expected exceedances of information and/or alert threshold,
- Expected changes in pollution (improvement, stabilisation or deterioration), together with reasons for those changes;

(c) Information on the type of population concerned, possible health effects and recommended behaviour:

- Information on population groups at risk,
- Description of likely symptoms,
- Recommended precautions to be taken by the population concerned,
- Where to find further information;

(d) Information on preventive action to reduce pollution and/or exposure to it: indication of main source sectors; recommendations for action to reduce emissions;

(e) In case of predicted exceedances, steps shall betaken to ensure that such details are supplied to the extent practicable.

Schedule 13

Air Quality Management Order

Air Quality Regulations 2010

Regulation 32

The Minister for the Environment acting on the advice of the Malta Environment and Planning Authority, in exercise of the powers conferred upon him/her by Regulation X of the Air Quality Regulations, 2010, hereby makes the following Order.

This Order may be cited/referred to as the [name of Local Council] Air Quality Management Area [No.] and shall come into effect on [date].

The area is shown on the attached map in red and is within the confines of the [name of Local Council] Local Council. The area in question is bound by the following coordinates[1] 4[xx,xxx], 3,9[xx,xxx] at its northernmost point, 4[xx,xxx], 3,9[xx,xxx] at its southernmost point, 4[xx,xxx], 3,9[xx,xxx] at its westernmost point and 4[xx,xxx], 3,9[xx,xxx] at its easternmost point. The map may be viewed at the Local Council's office in [address] and shall be published on the Gazette.

The Area is designated in relation to a likely breach of the [name of pollutant] [limit value/target value/long-term objective] as specified in the Air Quality Regulations 2010.

This Order shall remain in force until it is revoked by a subsequent order.

Signature

The Onor. [Name of the Minister]

Minister for the Environment

[1] Zone 33s, datum ED 50, ellipsoid – Hayford International

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