FRANCE

Objet : **Révision de la directive 2008/50/CE concernant la qualité de l'air ambiant et un air pur en Europe : commentaires des autorités françaises en réponse à l'appel à commentaires écrits de la Présidence du 9 mars 2023**

Les autorités françaises remercient la Présidence pour les travaux menés au cours du groupe « Environnement » le 09 mars 2023. Elles souhaitent apporter des commentaires en rappellant la réserve d'examen sur l'ensemble du projet de directive dont l'analyse détaillée par les autorités françaises se poursuit.

CHAPITRE II – EVALUATION DE LA QUALITE DE L'AIR AMBIANT ET TAUX DE DEPOT

Article 7- Régime d'évaluation, Annexe II, définitions (article 4) points 5, 6, 7, 8, 18

L'article 7 du projet de directive prévoit que les Etats membres classent les zones délimitées à l'échelle de leur territoire selon leur régime de surveillance qui est défini à partir d'un seuil d'évaluation unique fixé pour chaque polluant au sein de l'annexe II. Dans le cas d'un dépassement d'un seuil d'évaluation uniquement lié à des sources ponctuelles les Etats membres devront néanmoins réaliser des mesures fixes sur la zone concernée en définissant un nombre minimal de points pour les sources ponctuelles mais également pour les sources diffuses tel que requis par le paragraphe 2 de l'article 9 qui renvoie à l'annexe III de la proposition de directive. Le classement de la zone étant lié dans le cas précité à des sources ponctuelles uniquement, le suivi des sources diffuses par l'intermédiaire d'un nombre minimal de points ne parait pas pertinent. **Les autorités françaises proposent donc de modifier les dispositions du paragraphe 1 sous paragraphe 2 de l'article 7 de la manière suivante :** « *….] Each zone shall be classified in relation to those assessment thresholds.* ***The nature of source (diffuse source or point source or a combination of both) taking into account for this classification shall be identified in order to implement the relevant mininum numbers of sampling points assign to each type of source according to paragrah 2 of article 9*** »**.**

Tel qu'indiqué lors du groupe « environnement » du 9 mars dernier**, les autorités françaises considèrent également que les notions sources diffuses (« diffuse sources ») et sources ponctuelles (« point sources ») doivent être définies au sein de la proposition de directive pour assurer une compréhension harmonisée de ces dernières entre les Etats membres. Elles proposent donc d'ajouter au sein de l'article 4 de la proposition de directive les deux définitions suivantes :**

- « *Diffuse sources : spatially distributed emission sources, considered as a whole and not individually, which contribute to the pollutant concentrations of an area »*
- *« Point sources : emission sources located at particular points in space and for which specific influence on pollutant concentration has to be characterised* »

Par ailleurs, les autorités françaises demandent que la nature des mesures (fixes ou indicatives) soient précisées au sein du sous-paragraphe 3 du paragraphe 2 de l'article 7 de la proposition de directive afin de garantir une harmonisation des pratiques.

Enfin, les autorités françaises considèrent que la mention du (ou des) moyen(s) de mesure pouvant être utilisés en fonction du classement de la zone, tel que précisés à l'article 8, est à reporter également au sein de la définition n°18 relative au seuil d'évaluation. Elles proposent ainsi la modification suivante : « *the level that determines the required assessment regime* ***for a given zone*** ~~*to be used to assess ambient air quality*~~ *:* ***above this level fixed measures has to be used in order to assess ambiant air quality and below this level modelling applications, indicative measurements, objective estimation or a combination thereof has to used in order to assess ambiant air quality***»

<u>Article 8 - Critères d'évaluation, Annexe IV A, Art 8.7 (Annexe III.D, Annexe VII.3), définitions (article 4) points 9, 14, 19, 20, 21, 22</u>

Les autorités françaises rappellent tel qu'indiqué lors du groupe « Environnement » du 9 mars que la modélisation ne répond pas à ce jour à des critères d'assurance et de contrôle qualité, ainsi qu'à des critères de représentativité, partagés au niveau européen permettant une utilisation harmonisée des modèles entre les Etats membres, ainsi qu'un contrôle objectif des données qui en ressortent, en particulier en ce qui concerne les données relatives aux dépassements de valeurs limites ou valeur cible.

Concernant les **critères qualité** tel que proposés au sein de l'annexe V, un ratio entre incertitude de modélisation et incertitude de mesure est indiqué sans définition précise de ce dernier. Par ailleurs, sans lien explicité avec ce ratio, l'annexe V prévoit un objectif qualité pour la modélisation qui est à vérifier à partir d'un indicateur devant être inférieur ou égale à 1. **Les autorités françaises soulignent la nécessité de clarifier le lien entre le ratio et l'indicateur qualité mentionné à l'annexe V, ainsi que de préciser les justifications techniques ayant permis d'établir celui-ci. Par ailleurs, les autorités françaises notent que l'annexe V ne précise pas clairement la manière dont les Etats membres s'assurent que l'indicateur qualité proposé pour la modélisation soit inférieur ou égale à 1.** A titre d'exemple, il est indiqué au sein de l'annexe V que cet indicateur doit être vérifié sur 90% des points de mesures disponibles sur le domaine, **sans préciser un nombre minimal de stations et leur répartition spatiale. Les autorités françaises soulignent que la définition de ce nombre minimum fait l'objet d'échange au sein de FAIRMODE et n'a pas encore été statué dans le cadre du CEN, tout comme les éventuelles alternatives de validation toujours en discussion au sein de FAIRMODE.** Enfin, concernant le corpus de référence en matière d'assurance qualité, **les autorités françaises rappellent que des travaux viennent seulement d'être initiés au sein de FAIRMODE pour déterminer des critères communs à tous les Etats membres.**

Concernant les **critères de représentativité** indiqués à l'annexe IV, **les autorités françaises soulignent que la transposition des grands principes de ces critères en cas d'utilisation de la modélisation, tel qu'indiqué au point A.1 de cette annexe, ne peut être envisagée sans une méthodologie clairement explicitée et partagée entre les Etats membres. Les autorités françaises soulignent ainsi d'ores et déjà que la définition de l'étendue spatiale de la représentativité des points de maille utilisés pour la modélisation qui pourront être considérés comme recevables constitue un impératif (définition de critères macro (urbain, rural, pop/km^{2}…) et micro (proximité forte de sources, ...)). Pour les stations de mesures de proximité, des échelles spatiales minimales de représentativités sont citées (100m en linéique pour les sites trafic, 250m*250m pour les sites industriels, plusieurs km2 pour les sites de fond). Les autorités françaises demandent ainsi de confirmer si les sorties de modèles devraient assurer une représentativité sur des zones englobant ces échelles spatiales. Auquel cas, elles soulignent la difficulté de définir des maillages variables dans l'espace en fonction de l'occupation du territoire.**

Si les autorités françaises ne remettent pas en question l'intérêt d'utiliser la modélisation pour obtenir des informations complémentaires, notamment en matière de surface et de population exposées dans le cadre des situations de dépassement tel que cela est pratiqué à l'heure actuelle, **l'utilisation de la modélisation, au regard des nombreuses incertitudes existantes à ce jour en matière de critères qualité et de représentativité, ne doit pas être étendue à la caractérisation d'une situation de dépassement d'une valeur limite ou d'une valeur cible qui doit rester du ressort de la mesure**. Ainsi, **elles proposent une nouvelle formulation pour les paragraphes 1, 2 et 3 de l'article 8 de la proposition de directive ainsi que le retrait du point du 5 de l'article 8 :**

« *1. Member States shall assess ambient air quality with respect to the pollutants referred to in Article 7 in all their zones, in accordance with the criteria laid down in paragraphs 2 to ~~to 6~~ **4** of this Article and in accordance with Annex IV.*

2. In all zones where the level of pollutants exceeds the assessment threshold established for those pollutants, fixed measurements shall be used to assess the ambient air quality. Those fixed measurements may be supplemented by modelling applications and indicative measurements ~~to assess air quality and~~ to provide ~~adequate~~ information on the spatial distribution of air pollutants and on the spatial representativeness of fixed measurements.

*3. In all zones where the level of pollutants exceeds a limit value established for those pollutants in Table 1 of Section 1 of Annex I or an ozone target value established in Section 2 of Annex I modelling applications ~~shall~~ **may** be used in addition to fixed measurements ~~to assess the ambient air quality~~ **in order to** ~~Those modelling applications shall also~~ provide information on the spatial distribution of pollutants and on the spatial representativeness of fixed measurements*.

(…)

~~*5. If modelling shows an exceedance of any limit value or ozone target value in an area of the zone not covered by fixed measurements, additional fixed or indicative measurements shall be used during at least 1 calendar year after the exceedance was recorded, to assess the concentration level of the relevant pollutant.* »~~

Les autorités françaises soulignent également que le point 5 de l'article 8 qu'elles proposent de retirer de la proposition de directive soulève des difficultés importantes si ce dernier venait à être conservé. Concernant le suivi d'une situation de dépassement par l'intermédiaires de mesures fixes ou indicatives supplémentaires, **les autorités françaises demandent des précisions quant au choix de la durée d'une année civile suivant le constat de dépassement, considérant les délais parfois importants d'installation de points de mesure** (financement, acquisition, démarches administratives, installation des équipement, étalonnage etc.), **de clarifier les critères permettant de définir la répartition des points de mesures additionnels sur les parties de zones non couvertes par des mesures fixes, ainsi les critères auxquels les Etats membres devront répondre pour procéder à leur retrait**.

Les autorités françaises indiquent qu'il reste essentiel que les travaux relatifs à la définition du cadre propre à la modélisation se poursuivent à travers notamment une participation active des Etats membres au sein des différents groupes européens (dont FAIRMODE) pour avancer à ce sujet. **Les autorités françaises considèrent donc que la mission du point 5 (d) de l'article 5 doit être reformulée en ce sens et proposent la formulation suivante :** « *(d) ~~ensuring~~ **contributing to** accuracy of modelling applications **improvement*** **».**

Les autorités françaises demandent que le paragraphe 8 de l'article 8 précise si l'utilisation de bio-indicateurs implique la mise en œuvre d'un réseau de surveillance distinct du réseau de surveillance dédié au suivi des autres polluants ciblés par la proposition de directive. Elles rappellent par ailleurs leur demande émise lors du groupe « Environnement » concernant **l'alignement de la définition n°31 relative au niveau critique indiquée à l'article 4 de la proposition de directive avec la notion de charge critique (critical load) définie au sein l'annexe I du Protocole de 1999 à la Convention sur la pollution atmosphérique transfrontière à longue distance, relatif à la réduction de l'acidification, de l'eutrophisation et de l'ozone troposphérique, tel que modifié le 4 mai 2012.**

Dans la continuité de leurs commentaires émis lors du groupe « Environnement » du 9 mars, **les autorités françaises proposent les définitions ou modifications des définitions** suivantes au sein de l'article 4 de la proposition de directive :

- Définition 14 relative aux particules ultrafines (PUF) reprend la recommandation issue du résumé d'orientation des lignes directrices publiées par l'Organisation mondiale de la santé (OMS) qui propose de quantifier les particules ultrafines ambiantes en termes de concentration en nombre de particules pour un spectre de dimensions comportant une limite basse inférieure ou égale à 10 nm et une limite supérieure sans restriction. Cette recommandation concerne la mesure en nombre de particule (PNC) et non les PUF en tant que telles. **Ainsi, les autorités françaises considèrent qu'il convient de clarifier la définition de PUF et proposeront la définition suivante à l'issue du groupe : « *means a subset of PM2.5, commonly defined as particles with at least one dimension less than 100 nanometres (nm) and usually expressed in particle number concentration (number of particles per cm³)* ». Complété par ailleurs par l'ajout d'une mention précisant que les PUF tel que définit précédemment sont quantifiés par la mesure en nombre de particules (PNC : particule number concentration). Cette mention est à indiquer au sein du paragraphe C de la section 3 de l'annexe VII relative à la mesure des PUF conformément aux recommandations de l'OMS précitées.**

- Définition 20 relative aux mesures indicatives ne permet pas de montrer que ces mesures, si elles répondent à des critères moins stricts que ceux applicables aux mesures fixes, doivent néanmoins être normalisées et maitrisées. **Ainsi, les autorités françaises proposent la définition suivante : « *Indicatives measurements means measurements taken at sampling points, either continuously or by random sampling, at constant locations on at least 1 calendar year basis to determine the levels in accordance with data quality objectives that are less strict than those required for fixed measurements* ».**

- Définition 21 relative à l'estimation objective précise qu'il s'agit de méthodes d'évaluation pour obtenir de l'information quantitative ou qualitative sur le niveau de concentration ou le niveau de dépôt d'un polluant par avis d'experts. Les autorités françaises soulignent qu'il faut s'affranchir des avis d'experts qui sont très aléatoires, ou a minima, exiger que ces avis soient clairement documentés. Elles considèrent que les méthodes quantitatives pour l'estimation objective doivent répondre à des critères de qualité moins stricts que ceux applicables aux mesures indicatives ou à la modélisation. **Ainsi les autorités françaises considèrent qu'il convient de clarifier la définition d'estimation objective et proposent la définition suivante** : « ***results obtained by implementing any formalized method making it possible to estimate the order of magnitude of pollutant concentrations at a given point or over a geographical area without necessarily reverting to complex mathematical tools or physics equations*** ».

Article 9 - Points de prélèvements - Annexe III, Annexe IV B,C,D, Annex VII 2 A-C, définitions (article 4) points 11,12

Article 9

Les autorités françaises considèrent que les dispositions du point 3 de l'article 9 sont à modifier pour indiquer que les mesures fixes peuvent être remplacées, dans un contexte précis et sous certaines conditions, par des mesures indicatives et non pas être réduites de 50% sans compensation. Par ailleurs, elles rappellent que la mention de **la durée de deux mois par année civile ne paraît pas nécessaire**, celle-ci est déjà mentionnée au sein de la section B de l'annexe V de la proposition de directive (13% de l'année civile correspondant à 8 semaines). **Ainsi elles proposent la modication de formulation suivante concernant le paragraphe 3 de l'article 9 :** « *the minimum number of sampling points may be ~~reduced~~* ***replaced*** *by up to 50% in accordance with Point A and C of Annex III (…)* » **ainsi que concernant le point (c) du pararaghe 3 de l'article 9** : « *(…) the number of indicative measurements is the same as the number of fixed measurements that are being replaced ~~and the indicative measurements have a minimum duration of 2 months per calendar year~~* ». De plus les autorités françaises s'interrogent quant au fait d'exclure les mesures de dioxyde d'azote (NO_2) de pollution de fonds rurale au point 3 (d) de l'article 9 alors que le

point C de la section 2 de l'annexe VII relatif à la mesure des précurseurs de l'ozone, n'exclut pas les zones rurales. **Elles demandent que ces dispositions soient précisées.**

Annexe III

Le point 1 de la section A de l'annexe III précise pour le dioxyde d'azote, les particules, le benzene et le monoxyde de carbone, que l'unique point de mesures doit concerner la contribution du transport et que s'il ne doit y avoir qu'un seul point de mesure fixe, celui-ci doit être positionné là où la concentration d'exposition maximale est susceptible d'être mesurée. **Les autorités françaises souhaitent que ce critère soit clarifié. En effet ce dernier cumulé à l'abaissement des seuils d'évaluation à l'annexe II pourrait conduire à un nombre conséquent de zones comprenant un seul point de mesure en situation de dépassement de seuils d'évaluation et donc pour lesquelles des mesures fixes seraientà réaliser.**

Les autorités françaises rappellent que les critères indiqués pour définir le nombre minimal de points de prélèvement liés aux sources ponctuelles au sein du point 2 de la section A de l'annexe III sont trop génériques et peuvent entrainer différentes interprétations entre les Etats membres. **Elles demandent donc que cette partie soit davantage explicitée tel que cela est fait pour les sources diffuses.** Par ailleurs au sein de ce même point 2, il est précisé que les points de prélèvement doivent être implantés de façon à permettre de manière simultanée la mesure des valeurs limites et des valeurs d'émission définies dans le cadre des meilleures techniques disponibles (MTD) (cette demande est par ailleurs reprise au sein du point B.2 (f) de l'annexe IV). **Les autorités françaises considèrent qu'en l'absence de précisions données lors du groupe concernant le cadre d'application et les objectifs de ces dispositions, notamment en ce qui concerne l'articulation entre la notion d'émission propre aux MTD et la notion de concentration traitée dans la présente directive, il convient de retirer ces mentions**.

Les autorités françaises rappellent que les définitions relatives aux notions suivantes citées dans l'annexe III : « complex terrain » et « high UFP concentrations » sont à préciser, dans l'optique d'assurer une compréhension harmonisée de ces notions entre les Etats membres.

Les tableau 1 et 3 de l'annexe III comportent un nombre minimum de points de mesures fixes pour les PM_{10}, les $PM_{2,5}$ et la somme des deux. **Les autorités françaises considèrent que la note suivante doit être ajoutée en bas des deux tableaux concernant l'application de la colonne « Sum PM « des tableau 1 et 3 de l'annexe III : « *this minimal number of sampling point shall be implemented if levels of PM_{10} and $PM_{2,5}$ are both above their respective evaluation threshold* ». Les autorités françaises s'interrogent par ailleurs quant à la règle régissant la répartition du nombre minimal de points de prélèvement indiqués dans la colonne SumPM entre les PM_{10} et les $PM_{2,5}$, en particulier dans le cas où la concentration de particules serait supérieure à la valeur limite seulement pour l'un des polluants (PM_{10} ou $PM_{2,5}$). Elles demandent ainsi que cette règle soient explicitées par l'intermédiaire d'une note en bas du tableau.**

Les autorités françaises demandent une modification du titre du tableau 1 de l'annexe III pour indiquer que ce dernier est applicable si le niveau de polluant est supérieur au seuil d'évaluation au lieu de la mention : « *minimum number of sampling points for fixed measurement to assess compliance with limit values for the protection of human health and alert thresholds in zones ~~where fixed measurement is the sole source of information~~ where level of pollutant is above the evaluation threshold* **».**

Les autorités françaises indiquent que la mention suivante « if the number of sampling points is reduced by up to 50% » est à retirer de la première ligne du tableau 2 de l'annexe III non concernée par cette disposition.

Les autorités françaises indiquent que la section C de l'annexe III ne fait pas référence aux polluants concernés (SO_2 et NO_x) contrairement à la section 3 de l'annexe I et demandent leur ajout.

Annexe IV

Les autorités françaises ne remettent pas en question la prise en compte de la répartition des émissions pour la définition du réseau de mesures, **elles considèrent que les références indiquées au point B.1 de l'annexe IV constituent des exemples** et qu'il convient de considérer également les inventaires locaux d'émissions. **Les autorités françaises proposent ainsi de modifier le point B.1 de l'annexe IV de la manière suivante** : « *the siting of sampling points shall take into account emmissions data **such as** national gridded data of emissions reported under Directive (EU) 2016/2284 of the European Parliament and of the Council~~, and~~ emission data reported under the European Pollutant Release and Transfer Regis **and local emission inventories*** ».

Le point B.4 de l'annexe IV précise des gammes de surface (en km²) pour la représentativité des divers points de mesure en ozone sans en préciser l'origine. **Les autorités françaises demandent que les origines de ces données soient clarifiées, par exemple par l'intermédiaire de notes complémentaires.**

Le point C (e) de l'annexe IV précise des critères uniquement liés à des points de mesures destinés à mesurer l'impact du trafic sans précision clairement indiquée dans le texte. Les autorités françaises considèrent que cette disposition est à clarifier et proposent la formulation suivante : « ~~*For all **pollutants***~~ ***For locations measuring contributions of traffic and for all pollutants**, sampling probes shall be at least 25 m from the edge (…)* ».

Le point D.1 de l'annexe IV précise que la conception du réseau de surveillance est étayée au minimum par une modélisation ou par des mesures indicatives. **Les autorités françaises considèrent que l'établissement d'une méthodologie de référence partagée entre les Etats membres pour garantir une utilisation encadrée de la modélisation ou des mesures indicatives est nécessaire dont l'application serait restreinte aux nouvelles stations à mettre en place.**

La section D de l'annexe IV comporte un nombre important de nouvelles dispositions relatives à la constitution d'une documentation propre au réseau de surveillance de la qualité de l'air. **Les autorités françaises indiquent que cette documentation supplémentaire (notamment les points D.6 à D8) représente une charge administrative conséquente et qu'il convient de veiller, si celle-ci doit faire l'objet d'un rapportage (ce qui n'apparait pas de façon claire dans la proposition de directive), de faciliter sa mise en œuvre le plus possible.**

Annexe VII

Les autorités françaises considèrent que le méthane (CH4) doit être ajouté au sein de la liste du point B de la section 2 de l'annexe VII correspondant aux précurseurs de l'ozone pour lesquels une surveillance dans l'air ambiant est recommandée.

Article 10 - Supersites, Annex VII 1, définitions (article 4) points 4, 10, 13, 25

Les autorités françaises considèrent qu'il convient de prioriser les objectifs visés afin de permettre les développements ou adaptation métrologiques correspondant(e)s (notamment pour les composés cités au point B de la section 1 de l'annexe VII liés à la mesure des $PM_{2,5}$). **Ainsi, elles proposent la formulation suivante pour les paragraphes 5 et 6 de l'article 10 ainsi que l'ajout de deux paragraphes 7 et 8 pour ce même article :**

« ~~*5. Measurements at all monitoring supersites at urban background locations shall include fixed or indicative measurements of size distribution of ultrafine particles and particulate matter oxidative potential.*~~

5. Measurements at all monitoring supersites at urban background locations ~~and rural background locations~~ shall include the following :

(a) fixed measurements of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO2), ozone (O_3)

(b) fixed measurements of particules number concentrations (PNC)

6. The following measurements are recommanded at all monitoring supersites at urban background locations :

- ***(a) fixed or indicative measurements of black carbon (BC), ammonia (NH_3) and ultrafine particles (UFP)***
- ***(b) fixed or indicative measurements of particulate matter oxidative potential.***
- ***(c) fixed or indicative measurements of chemical speciation concentrations of $PM_{2.5}$ or PM_{10} on an annual average basis in accordance with Section 1 of Annex VII;***
- ***(d) fixed or indicative measurements of arsenic, cadmium, nickel, lead, total gaseous mercury, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), and of the total deposition of arsenic, cadmium, mercury, nickel, lead, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), irrespective of concentration levels.***

7. Measurements at all monitoring supersites at rural background locations shall include the following :

- ***(a) fixed measurements of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), ozone (O_3)***
- ***(b) fixed or indicative measurements of chemical speciation concentrations of $PM_{2,5}$ or PM_{10} on an annual average basis in accordance with Section 1 of Annex VII;***
- ***(c) fixed or indicative measurements of arsenic, cadmium, nickel, lead, total gaseous mercury, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), and of the total deposition of arsenic, cadmium, lead, mercury, nickel , benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), irrespective of concentration levels***

8. The measurements of fixed or indicative measurements of ultrafine particles (UFP), black carbon (BC), ammonia (NH_3) are recommanded at all monitoring supersites at rural background locations. »

<u>Article 11 - Méthodes de référence pour les mesures et objectifs de qualité des données, Annexe VI et V</u>

Le point A de l'annexe VI ne comporte aucune méthode de référence pour les particules ultrafines (PUF), l'ammoniac (NH3), le noir de carbone (BC) et le potentiel oxydant. **Les autorités françaises soulignent qu'il existe des spécifications techniques pour les PUF (CEN/TS 16976:2016 or CEN/TS 17434 2020) ainsi qu'une méthode de référence pour le NH3 (EN17346 2020) et demandent leur ajout au sein du point A de l'annexe VI.**

Les autorités françaises indiquent que le second et troisième paragraphe du chapitre C de l'annexe VI portant sur la normalisation sont à retirer : les dispositions inscrites au sein de ces paragraphes étant applicables uniquement à la reconnaissance mutuelle traitée au point D de l'annexe VI.

<u>Annexe V</u>

S'agissant des mesures indicatives, le paragraphe A.2 de l'annexe V précise que l'incertitude est calculée suivant les orientations relatives à la démonstration de l'équivalence. Les autorités françaises soulignent que certaines mesures indicatives bénéficient de textes normatifs européens (ex : tubes à diffusion benzène, NO2, NH3) et que le calcul d'incertitude ne doit pas se limiter uniquement à l'utilisation du Guide de démonstration d'équivalence. **Elles proposent donc la formulation pour le paragphe A.2 de l'annexe V (ligne 7 du premier paragraphe sous le tableau)** : « *For indicative measurements, **in the absence of a CEN standard method**, uncertainty shall be calculated according to the guidance (...)* ».

Le paragraphe B de l'annexe V (première ligne au dessus du tableau) précise la notion de couverture de la donnée et indique que celle-ci est fondée sur la période de mesure. Les autorités françaises souhaitent rappeler que la couverture des données telle que proposée par le groupe de travail AQUILA est fondée sur l'année calendaire quelle que soit la durée de la période de mesure. Il s'agit en effet d'établir si, sur l'année calendaire, il y a suffisamment de données valides pour utiliser cette mesure afin de vérifier le respect des valeurs limites. Les autorités françaises proposent de modifier la mention au-dessus du tableau du paragraphe B de l'annexe V de la manière suivante : « *"Data coverage" refers to ~~the proportion of the measurement period~~ the proportion of the calendar year for which valid measurement* ***data (taking into account reasonable time for regular calibration and normal maintenance)*** *are available, expressed as a percentage.* »

Les autorités françaises indiquent par ailleurs que deux notions peuvent être appréhendées lorsque qu'il s'agit de la couverture minimale des données traitées au paragaphe B de l'annexe V : le pourcentage minimal de données valides pour agréger des données sur une période donnée (heure, 8 heures, 24 heures, …) et la couverture minimale de données sur une année calendaire pour calculer des statistiques annuelles de dépassement de seuil de long terme (ex : valeur limite en moyenne annuelle) ou de court terme (ex : nombre de dépassements sur l'année d'un seuil journalier). **Pour calculer une moyenne horaire, sur 8 heures, sur 24h, le pourcentage minimal de données doit rester de 75% que la mesure soit fixe ou indicative, tel que cela est requis par la directive 2008/50/CE, et non de 50% tel qu'indiqué dans le tableau du paragraphe B de l'annexe V**. Elles précisent qu'en ce qui concerne la **couverture annuelle requise pour la mesure indicative lorsqu'il s'agit d'évaluer des dépassements de seuils court terme**, et conformément à la proposition du groupe AQUILA, **celle-ci doit être de 50% et nécessite l'ajout d'un tableau spécifique**. **Elles proposent ainsi les modifications suivantes concernant le tableau du paragraphe B de l'annexe V :**

Table 1: Aggregation criterion: minimum percentage of valid data over the aggregation period - time, day, season, year - to determine the validity of an aggregated data

Air pollutant	Minimum data coverage							
	Fixed measurements				Indicative measurements			
	1-hour means	**8-hour means**	**24-hour means or maximums**	**Seasonal** or annual means	**1-hour means**	**8-hour means**	**24-hour means or maximums**	**Seasonal** or annual means
SO_2, NO_2/NO_x, CO, O_3	**75%**	**75%**	**75%**	85%	**75%**	**75%**	**75%**	13%
PM_{10} et $PM_{2,5}$	**75%**	-	**75%**	85%	**75%**	-	**75%**	13%
Benzène	**75%**	-	**75%**	85%	**75%**	-	**75%**	13%
Benzo(a)pyrene, polycyclic aromatic hydrocarbons (PAH), total gaseous ercury	-	-	-	30%	-	-	-	13%
As, Cd, Ni, Pb	-	-	-	45%	-	-	-	13%
BC, Ammonia (NH_3), UFP, particle size number	-	-	-	80%	-	-	-	13%

distribution of UFP								
Total deposition	-	-	-	-	-	-	-	30%

Table 2: Minimum data coverage: quality objective to be met by the measurements in order to be used for compliance check with limit and target values over the calendar year or season concerned

	Fixed measurements		Indicative measurements	
	Minimum data coverage for using the measurement to check compliance with the short-term (i.e. hourly, 8-hour or 24-hour) limit or ozone target value	**Minimum data coverage for using the measurement to check compliance with the long-term (i.e. seasonal, annual) limit or ozone target values**	**Minimum data coverage for using the measurement to check compliance with the short-term (i.e. hourly, 8-hour or 24-hour) limit or ozone target value**	**Minimum data coverage for using the measurement to check compliance with the long-term (i.e. seasonal, annual) limit or ozone target values**
SO_2, NO_2, NO_x, CO, O_3	**85%**	**85%**	**50%**	**13%**
PM_{10} et $PM_{2,5}$	**85%**	**85%**	**50%**	**13%**
Benzène	**-**	**85%**	**-**	**13%**
BaP	**-**	**30%**	**-**	**13%**

This is a courtesy translation and in the event there are any differences between the French and English texts, the French text governs

Subject : Révision of Directive 2008/50/EC on ambient air quality and cleaner air for Europe : comments from the French authorities in response to the Presidency's request for written comments on the Commission proposal received on 10 march 2023

The French authorities thank the Presidency for the work carried out during the « Environnement » group meeting on 9 march 2023. They wish to comment by recalling the scrutiny reservation on the whole proposal, the detailed analysis of this one by the french autorities is still ongoing.

CHAPTER II : ASSESSMENT OF AMBIENT AIR QUALITY AND DEPOSITION RATES

Article 7 – Assessment regime, Annex II, définitions (article 4) 5, 6, 7, 8, 18

Article 7 of the draft directive proposal foresees that Member states classify zones delimited at the scale of their territory according to their monitoring regime which is defined on the basis of a assessment threshold fixed for each pollutant within Annex II. In the case of an exceedance of an assessment threshold linked to point sources only, Member state have to carry out fixed measurements in the zone concerned by defining a minimum number of points for point sources but also for diffuse sources, as required by paragraph 2 of article 9 which refers to Annex III of the directive proposal. As the classification of the zone in the above-mentioned case is linked to point sources only, the monitoring of diffuse sources through a minimum number of points does not seem relevant. **French authorities therefore propose to modify subparagraph 2 paragraph 1 of article 7 provisions as follows**: « (…) Each zone shall be classified in relation to those assessment thresholds. **The nature of source (diffuse source or point source or a combination of both) taking into account for this classification shall be identified in order to implement the relevant mininum numbers of sampling points assign to each type of source according to paragrah 2 of article 9** ».

As indicated during the last environnement group, **French authorities also considers that diffuse sources and point sources should be defined within directive proposal to ensure a harmonised understanding between the Member states. They therefore propose to add the following definitions within article 4 of the directive proposal** :

- « Diffuse sources : spatially distributed emission sources, considered as a whole and not individually, which contribute to the pollutant concentrations of an area »
- « Point sources : emission sources located at particular points in space and for which specific influence on pollutant concentration has to be characterised »

Furthermore, French authorities requests that the nature of the measurements (fixed or indicative) is specified within subparagraph 3 of paragraph 2 of article 7 in order to ensure harmonized practices.

French authorities considers that a mention of the means of measurement that can be used depending on the classification of the zone, as specified in article 8, should be included in definition 18 concerning the assessment threshold. **They therefore propose the following amendment of this definition** : « the level that determines the required assessment regime **for a given zone** ~~to be used to assess ambient air quality~~ : **above this level fixed measures has to be used in order to assess ambiant air quality and below this level modelling applications, indicative measurements, objective estimation or a combination thereof has to used in order to assess ambiant air quality** ».

Article 8 – Assessment criteria, Annex IV A, Art 8.7 (Annex III.D, Annex VII.3), définitions (article 4) 9, 14, 19, 20, 21, 22

French authorities recall, as indicated during the last environment group, that modelling applications does not yet meet quality assurance and quality control criteria, as well as representativeness criteria, shared at European level, which would allow the models to be used in a harmonised manner between the Member states, as well as an objective control of the resulting data, in particular with regard to data relating to exceedance of limit value or target value.

Concerning **quality criteria** as proposed in annex V, a ratio between modelling uncertainty and measurement uncertainty is indicated without a precise definition of this ratio. Furthermore, without any explicit link with this ratio, Annex V provides for a modelling quality objective which has to be verified on the basis of a modelling quality indicator. This indicator must be less than or equal to 1. **French authorities emphasize the need to clarify the link between the ratio and the quality indicator mentioned in Annex V, as well as to specify the technical justifications for establishing this link. Furthermore, French authorities notes that Annex V does not clearly specify how Member states ensure that the quality indicator proposed for modelling is less than or equal to 1**. For example, it is indicated in Annex V that this indicator must be verified on 90% of the measurement points available on the domain, **without specifying a minimum number of stations and their spatial distribution**. **French authorities emphasise that the definition of this minimum number is subject to discussion within FAIRMODE and has not yet been decided within the CEN, as well as the possible validation alternatives still under discussion within FAIRMODE**. Finally, concerning the reference documentation for quality assurance, **French authorities recall that work is only recently initiated within FAIRMODE to determine criteria common to all Member States**.

Concerning the **representativeness criteria** indicated in Annex IV, **French authorities emphasize that the transposition of the main principles of these criteria in case of use of modelling, as indicated in point A.1 of this Annex, cannot be consider without a clearly explained methodology shared between Member States. The French authorities emphasize that definition concerning the spatial extent of the representativeness of the grid points used for modelling that can be considered as acceptable is mandatory (definition of macro (urban, rural, population/km^2 etc.) and micro (close proximity of sources ...) criteria). For proximity measurement stations, minimum spatial scales of representativeness are cited in Annex IV (100m linear for traffic sites, 250m*250m for industrial sites, several km2 for background sites). French authorities ask then to confirm whether model outputs should ensure representativeness over areas encompassing these spatial scales. If so, they underline the difficulty of defining spatially variable grids according to the occupation of the territory.**

French authorities do not question the value of using modelling to obtain additional information, particularly in terms of surface area and population exposed in the context of exceedance as currently practised, **however the use of modelling, regarding uncertainties that exist to date in terms of quality and representativeness criteria, shall not be extended to the characterisation of a situation in which a limit value or target value is exceeded**. **Exceedance shall remain the responsibility of measurement. French authorities therefore propose a new formulation for paragraphs 1, 2 and 3 of article 8 of the directive proposal and ask to remove paragraph 5 of article 8** :

« 1. Member States shall assess ambient air quality with respect to the pollutants referred to in Article 7 in all their zones, in accordance with the criteria laid down in paragraphs 2 to ~~to 6~~ **4** of this Article and in accordance with Annex IV.

2. In all zones where the level of pollutants exceeds the assessment threshold established for those pollutants, fixed measurements shall be used to assess the ambient air quality. Those fixed measurements may be supplemented by modelling applications and indicative measurements ~~to assess air quality and~~ to provide ~~adequate~~ information on the spatial distribution of air pollutants and on the spatial representativeness of fixed measurements.

3. In all zones where the level of pollutants exceeds a limit value established for those pollutants in Table 1 of Section 1 of Annex I or an ozone target value established in Section 2 of Annex I modelling applications ~~shall~~ **may** be used in addition to fixed measurements ~~to assess the ambient air quality~~ **in order to** ~~Those modelling applications shall also~~ provide information on the spatial distribution of pollutants and on the spatial representativeness of fixed measurements.

(…)

~~5. If modelling shows an exceedance of any limit value or ozone target value in an area of the zone not covered by fixed measurements, additional fixed or indicative measurements shall be used during at least 1 calendar year after the exceedance was recorded, to assess the concentration level of the relevant pollutant. »~~

French authorities also point out that paragraph 5 of article 8 they propose to remove raises significant difficulties if it is retained. Concerning the follow-up of an exceedance situation by means of additional fixed or indicative measurements, **French authorities request for clarification concerning the one calendar year duration choice following the exceedance, considering the sometimes long delays to install measurement points (financing, acquisition, administrative procedures, installation of equipment, calibration, etc.), clarification of the criteria for defining the distribution of additional measurement points over the parts of zones not covered by fixed measurements, as well as of the criteria that Member States have to meet in order to carry out their withdrawal**.

French authorities indicate that work on the definition of the framework for modelling remain essential, in particular through active participation of Member States to the different European groups concerned (including FAIRMODE) in order to make progress on this subject. **French authorities therefore consider that mission indicated in point c of article 5 shall be reformulated and proposes the following wording** : « (d) ~~ensuring~~ **contributing to** accuracy of modelling applications **improvement »**

French authorities request that paragraph 8 of article 8 specify whether the use of bio-indicators implies the implementation of a monitoring network separate from the monitoring network dedicated to the monitoring of the other pollutants targeted by the present directive proposal. They also recall their request made during the last environnement group concerning the **alignment of definition n°31 relating to the critical level indicated in article 4 with the notion of critical load defined in annex I of the 1999 Protocol to the Convention on Long-range Transboundary Air Pollution to Abate Acidification, Eutrophication and Ground-level Ozone, as amended on 4 May 2012.**

Following their comments during the last group, French authorities propose the following definitions or changes to definitions within article 4 of the directive proposal :

- Definition 14 on ultrafine particles (UFP) incorporates the recommendation from the guidance summary of the World Health Organisation (WHO) guidelines which proposes to quantify ambient ultrafine particles in terms of particle number concentration for a size spectrum with a lower limit of 10 nm or less and an unrestricted upper limit. This recommendation concerns particle number measurement (PNC) and not UFPs as such. **Thus, French authorities considere that the definition of PUF should be clarified and proposed the following definition : "means a subset of PM2.5, commonly defined as particles with at least one dimension less than 100 nanometres (nm) and usually expressed in particle number concentration (number of particles per cm³) ». In addition, a statement should be added to this definition specifying that the PUFs as defined above are quantified by measuring particle number concentration (PNC). This statement should be also included in paragraph C of section 3 of Annex VII on the measurement of PUFs in accordance with the above-mentioned WHO recommendations.**
- Definition 20 on indicative measurements does not indicate that these measurements, while meeting less stringent criteria than those applicable to fixed measurements, must nevertheless be standardised and controlled. **Thus, the French authorities propose the following definition: "Indicative measurements means measurements taken at sampling points, either continuously or by random sampling, at constant locations on at least 1 calendar year basis to determine the levels in accordance with data quality objectives that are less strict than those required for fixed measurements".**

- Definition 21 on objective estimation concern assessment methods for obtaining quantitative or qualitative information on the concentration level or deposition level of a pollutant through expert judgment. French authorities emphasise that expert judgment, which are very random, must be avoided or at least required to be clearly documented. They consider that quantitative methods for objective estimation should meet less stringent quality criteria than those applicable to indicative measurements or modelling. **Thus French authorities consider that the definition of objective estimation should be clarified and propose the following definition : « results obtained by implementing any formalized method making it possible to estimate the order of magnitude of pollutant concentrations at a given point or over a geographical area without necessarily reverting to complex mathematical tools or physics equations ».**

Article 9 – Sampling points - Annex III, Annex IV B,C,D, Annex VII 2 A-C, définitions (article 4) 11,12

Article 9

French authorities consider that the provisions of paragraph 3 of article 9 should be amended to indicate that fixed measures may be replaced, in a specific context and under certain conditions, by indicative measures and not be reduced by 50% without compensation. Furthermore, **they point out that the reference to the duration of two months per calendar year does not seem necessary**. Indeed this duration reference is already mentioned in section B of Annex V of the directive proposal (13% of the calendar year corresponding to 8 weeks). **They therefore propose the following wording change concerning paragraph 3 of article 9** : « the minimum number of sampling points may be reduced replaced by up to 50% in accordance with Point A and C of Annex III (…) » **as well as these changes concerning point (c) of paragraph 3 of article 9** : « (…) the number of indicative measurements is the same as the number of fixed measurements that are being replaced ~~and the indicative measurements have a minimum duration of 2 months per calendar year~~ ». **In addition, French authorities question the exclusion of measurements of nitrogen dioxide (NO2) from rural background pollution in point 3 (d) of Article 9, whereas point C of Section 2 of Annex VII on the measurement of ozone precursors does not exclude rural areas. They request for clarification of these provision.**

Annex III

Point 1 of section A of Annex III specifies that for nitrogen dioxide, particulate matter, benzene and carbon monoxide, the single measuring point must relate to the contribution of transport and if there is only one fixed measuring point, it must be located where the maximum exposure concentration is likely to be measured. **French authorities would like this criterion to be clarified. Indeed this criterion combiend with the lowering of the assessment thresholds in Annex II, could lead to a significant number of zones with a single measuring point where the assessment thresholds could be exceeded and where fixed measurements should therefore be required.**

French authorities recall that criteria indicated to define the minimum number of sampling points related to point sources in point 2 of Annex III are too generic and may lead to different interpretations between Member states. **They therefore request more explicit criteria, as is done for diffuse sources. Furthermore, in this same point 2, it is specified that the sampling points must be located in such a way as to allow simultaneous measurement of the limit values and emission values defined in the framework of the best available techniques (BAT) (this request is also included in point B.2 (f) of Annex IV). Without clarification during the last group concerning the framework of application and the objectives of these provisions cosidering the concept of emission specific to BAT and the concept of concentration dealt with in the directive proposal, French authorities consider that these references should be removed.**

French authorities ask for "complex terrain" and "high UFP concentrations" mentioned in Annex III in order to ensure a harmonised understanding of these concepts between Member States.

Tables 1 and 3 of Annex III contain a minimum number of fixed measurement points for PM10, PM2.5 and the sum of both. **French authorities consider that a note should be added at the bottom of the two tables concerning the application of the column "Sum PM": "this minimum number of sampling point shall be implemented if levels of PM10 and PM2.5 are both above their respective evaluation threshold". French authorities also questioned the rule governing the allocation of the minimum number of sampling points indicated in column SumPM between PM10 and PM2.5, in particular in the event that the concentration of particulate is above the limit value for only one of the pollutants (PM10 or PM2.5). They therefore request to add this rule at the bottom of the tables 1 and 3 of Annex III.**

French authorities ask for change in the title of Table 1 of Annex III to indicate that it is applicable if the level of the pollutant is above the assessment threshold instead of "minimum number of sampling points for fixed measurement to assess compliance with limit values for the protection of human health and alert thresholds in zones where fixed measurement is the sole source of information when the level of the pollutant is above the assessment threshold".

French authorities indicate that the following statement "if the number of sampling points is reduced by up to 50%" should be removed from the first row of Table 2 of Annex III not affected by this provision.

French authorities indicate that section C of Annex III does not refer to the pollutants concerned (SO2 and NOx) unlike section 3 of Annex I and ask for pollutant references addition.

Annexe IV

French authorities do not question to take into account the distribution of emissions for the definition of the measurement network. However **they consider that the references in Annex IV, section B.1 are examples and local emission inventories should also be considered. French authorities therefore propose to amend section B.1 of Annex IV as follows** : « the siting of sampling points shall take into account emmissions data **such as** national gridded data of emissions reported under Directive (EU) 2016/2284 of the European Parliament and of the Council~~, and~~ emission data reported under the European Pollutant Release and Transfer Regis **and local emission inventories** ».

Section B.4 of Annex IV specifies area ranges (in km²) for the representativeness of the various ozone measurement points without specifying their origin. **French authorities request for the clarification of origins of these data, e.g. by means of additional notes.**

Point C (e) of Annex IV specifies criteria only related to measurement points related to impact of traffic without any clear indication in the text. **French authorities consider that this provision should be clarified and propose the following wording** : : « ~~For all **pollutants**~~ **For locations measuring contributions of traffic and for all pollutants**, sampling probes shall be at least 25 m from the edge (…) ».

Section D.1 of Annex IV states that the design of the monitoring network should be supported by at least modelling or indicative measurements. **French authorities consider it is necessary to establish a shared reference methodology between Member states to ensure controlled use of modelling or indicative measurements**. **The application of this methodology should be limited to new stations implemented regarding the directive proposal.**

Section D of Annex IV contains a significant number of new provisions on the documentation related to air quality monitoring network**. French authorities indicate that this additional documentation (in particular points D.6 to D8) represents a significant administrative burden. Thus care should be taken to ensure that, if it is to be reported on (which is not clear from the proposal for a directive), its implementation should be facilitated as far as possible.**

Annex VII

French authorities consider that methane (CH4) should be added to the list of ozone precursors for which air ambient monitoring is recommended in section 2, point B of Annex VII.

Article 10 – Monitoring supersites, Annex VII 1, définitions (article 4) 4, 10, 13, 25

French atuhorities consider that objectives of article 10 should be prioritised in order to allow the corresponding metrological developments or adaptations (in particular for the compounds listed in point B of section 1 of Annex VII related to the measurement of PM2.5). Thus, they propose the following wording for paragraphs 5 and 6 and to add two paragraphs within Article 10:

5. Measurements at all monitoring supersites at urban background locations ~~and rural background locations~~ shall include the following :

(a) fixed measurements of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO2), ozone (O_3)

(b) fixed measurements of particules number concentrations (PNC)

6. The following measurements are recommanded at all monitoring supersites at urban background locations :

- **(e) fixed or indicative measurements of black carbon (BC), ammonia (NH_3) and ultrafine particles (UFP)**
- **(f) fixed or indicative measurements of particulate matter oxidative potential.**
- **(g) fixed or indicative measurements of chemical speciation concentrations of $PM_{2.5}$ or PM_{10} on an annual average basis in accordance with Section 1 of Annex VII;**
- **(h) fixed or indicative measurements of arsenic, cadmium, nickel, lead, total gaseous mercury, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), and of the total deposition of arsenic, cadmium, mercury, nickel, lead, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), irrespective of concentration levels.**

7. Measurements at all monitoring supersites at rural background locations shall include the following :

- **(d) fixed measurements of particulate matter (PM_{10} and $PM_{2.5}$), nitrogen dioxide (NO_2), ozone (O_3)**
- **(e) fixed or indicative measurements of chemical speciation concentrations of $PM_{2,5}$ or PM_{10} on an annual average basis in accordance with Section 1 of Annex VII;**
- **(f) fixed or indicative measurements of arsenic, cadmium, nickel, lead, total gaseous mercury, benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), and of the total deposition of arsenic, cadmium, lead, mercury, nickel , benzo(a)pyrene and the other polycyclic aromatic hydrocarbons referred to in Article 8(6), irrespective of concentration levels**

8. The measurements of fixed or indicative measurements of ultrafine particles (UFP), black carbon (BC), ammonia (NH_3) are recommanded at all monitoring supersites at rural background locations.

Article 11 – Reference measurement methods and data quality objectives, Annex VI et V

Section A of Annex VI does not include a reference method for ultrafine particles (UFP), ammonia (NH3), black carbon (BC) and oxidising potential. **French authorities point out that there are technical specifications for UFP (CEN/TS 16976:2016 or CEN/TS 17434 2020) as well as a reference method for NH3 (EN17346 2020) and ask for their addition in point A of Annex VI.**

French authorites indicate that the second and third paragraphs of chapter C of Annex VI on standardisation should be withdrawn: the provisions included in these paragraphs are only applicable to the mutual recognition concerning point D of Annex VI.

Annexe V

Paragraph A.2 of Annex V states that for indicative measurements, uncertainty is calculated according to the guidance on the demonstration of equivalence. French authorities underline that some indicative measurements benefit from European normative texts (e.g. benzene diffusion tubes, NO2, NH3) and calculation of uncertainty should not be limited to the use of the Guidance on the demonstration of equivalence. **They therefore propose the following wording for paragraph A.2 of Annex V (line 7 of the first paragraph under the table)** : « For indicative measurements, **in the absence of a CEN standard method**, uncertainty shall be calculated according to the guidance (…) ».

Paragraph B of Annex V (first line above the table) clarifies the concept of data coverage and indicates that it is based on the proportion of the measurement period. **French authorities wish to recall that the data coverage as proposed by the AQUILA working group is based on the calendar year regardless of the length of the measurement period**. The aim is to establish whether there is sufficient valid data over the calendar year to use this measurement to check compliance with the limit values**. French authorities propose to amend the entry above the table in paragraph B of Annex V as follows** : « Data coverage" refers to ~~the proportion of the measurement period~~ the proportion of the calendar year for which valid measurement **data (taking into account reasonable time for regular calibration and normal maintenance)** are available, expressed as a percentage.».

French authorities also indicate that two concepts can be understood when it comes to the minimum coverage of data mentioned in paragraph B of Annex V: the minimum percentage of valid data for aggregating data over a given period (hour, 8-hour, 24-hour, etc.) and the minimum coverage of data over a calendar year for calculating annual statistics on exceedance of long-term thresholds (e.g. annual average limit value) or short-term thresholds (e.g. number of exceedances over the year of a daily threshold). To calculate an hourly, 8-hour or 24-hour average, the minimum percentage of data must remain 75% whether the measurement is fixed or indicative, as required by directive 2008/50/EC, and not 50% as indicated in the table in paragraph B of annex V. **They specify that the annual coverage required for the indicative measure when assessing short-term threshold exceedances, as proposed by the AQUILA group, should be 50% and requires the addition of a specific table. They therefore propose the following changes to the table of paragraph B of Annex V:**

Table 1 : Aggregation criterion: minimum percentage of valid data over the aggregation period - time, day, season, year - to determine the validity of an aggregated data

Air pollutant	Minimum data coverage							
	Fixed measurements				Indicative measurements			
	1-hour means	**8-hour means**	**24-hour means or maximium**	**Seasonal** or annual means	**1-hour means**	**8-hour means**	**24-hour means or maximium**	**Seasonal** or annual means
SO_2, NO_2/NO_x, CO, O_3	**75%**	**75%**	**75%**	85%	**75%**	**75%**	**75%**	13%
PM_{10} et $PM_{2,5}$	**75%**	-	**75%**	85%	**75%**	-	**75%**	13%
Benzène	**75%**	-	**75%**	85%	**75%**	-	**75%**	13%
Benzo(a)pyrene, polycyclic aromatic hydrocarbons (PAH), total gaseous ercury	-	-	-	30%	-	-	-	13%

As, Cd, Ni, Pb	-	-	-	45%	-	-	-	13%
BC, Ammonia (NH_3), UFP, particle size number distribution of UFP	-	-	-	80%	-	-	-	13%
Total deposition	-	-	-	-	-	-	-	30%

Table 2 : Minimum data coverage: quality objective to be met by the measurements in order to be used for compliance check with limit and target values over the calendar year or season concerned

	Fixed measurements		Indicative measurements	
	Minimum data coverage for using the measurement to check compliance with the short-term (i.e. hourly, 8-hour or 24-hour) limit or ozone target value	**Minimum data coverage for using the measurement to check compliance with the long-term (i.e. seasonal, annual) limit or ozone target values**	**Minimum data coverage for using the measurement to check compliance with the short-term (i.e. hourly, 8-hour or 24-hour) limit or ozone target value**	**Minimum data coverage for using the measurement to check compliance with the long-term (i.e. seasonal, annual) limit or ozone target values**
SO_2, NO_2, NO_x, CO, O_3	**85%**	**85%**	**50%**	**13%**
PM_{10} et $PM_{2,5}$	**85%**	**85%**	**50%**	**13%**
Benzène	**-**	**85%**	**-**	**13%**
BaP	**-**	**30%**	**-**	**13%**

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CONTRIBUTION

From: To:	General Secretariat of the Council Working Party on the Environment
N° Cion doc.:	ST 14217/22 + ADD 1
Subject:	Air Quality Directive: follow-up to the meeting on 9 March- comments from delegations

Following the call for comments (WK 3449/23), delegations will find attached comments received from Spain, France (accompanied by a courtesy translation) and Malta.

SPAIN

Proposal for a Directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe (recast) - Comments from Spain to articles 12 to 18

CHAPTER III: Ambient air quality management

Article 12. Requirements where levels are lower than the limit values ⌦, ozone target value and average exposure concentration objectives, but above the assessment thresholds ⌫

Article 12.3 refers to NUTS1 territorial units when maintaining the values of the average exposure concentration objectives. As it was stated in our previous comments, NUTS1 level will entail a very high administrative burden, as domestic competences for air quality assessment and management lie on NUTS2 regions (Autonomous Communities). The second level statistical territorial units (NUTS 2) is a more suitable base for Spain because it would facilitate pollution management by simplifying the processing and management of air quality improvement plans. Please assess the convenience of also including NUTS2 level in the proposal. According to this, we propose modify article 12.3 as follows:

> 3. In territorial units at NUTS 1 **or NUTS 2, to be determined by each Member State according to its administrative structure**, level as described in Regulation (EC) No 1059/2003 where the average exposure indicators for $PM_{2.5}$ and NO_2 are below the respective value of the average exposure concentration objectives for those pollutants as laid down in Section 5 of Annex I, Member States shall maintain the levels of those pollutants below the average exposure concentration objectives.

Article 13: Limit values, ozone target values and average exposure reduction obligation for the protection of human

- **Article 13.1** establishes new stricter limit values (LV) of certain pollutants (sulphur dioxide, nitrogen dioxide, particulate matter, lead, benzene, carbon monoxide, metals and benzo(a)pyrene) regulated in this proposal for a directive.

We are studying the new LV and agrees on the need of new LV closer to the new WHO guidelines. Nonetheless, **we still have scrutiny reservation for the values and dates by which the LV shall be met in Annex I, section 1 as we need an explanation from the COM on how the new Euro 7 and the vehicle fleet renewal has been assessed in the AAQ Directive proposal in all Member States.**

- **Article 13.2** for ozone target values, establishes that MS shall ensure, by taking all necessary measures not entailing disproportionate costs, that such levels are not exceeded. In this respect, it should be noted that transboundary contributions to ozone levels can, in some areas, imply the major contribution to ozone. In such cases, it shall not be technically possible to adopt effective measures in a certain area, so we propose to modify the article as follows:

> 2.1. ⇨ For ozone, ⇦ Member States shall ⌦ ensure, by taking ⌫ ~~take~~ all necessary **effective** measures not entailing disproportionate costs, ~~to ensure~~ that ⌦ throughout the zone levels do not exceed ⌫ the ⇨ ozone ⇦ target values ~~and long-term objectives are attained~~ ⌦ , as laid down in Section 2, Point B, of Annex I ⌫.

- **Article 13.3** refers to NUTS1 territorial units when meeting the values of the average exposure concentration objectives. As it was stated before for article 12.3, please assess the convenience of also including NUTS2 . We propose to modify article 13.3 as follows:

  3~~1~~. Member States shall ⌦ ensure that ⌫ ~~take all necessary measures not entailing disproportionate costs to reduce exposure to $PM_{2.5}$ with a view to attaining~~ the ~~national~~ ⇨ average ⇦ exposure reduction ~~target~~ ⇨ obligations for $PM_{2.5}$ and NO_2 ⇦ laid down in ⌦ Section 5, Point B, of Annex I, ⌫ ~~Section B of Annex XIV~~ ⇨ are met throughout their territorial units at NUTS 1 **or NUTS 2** level, **to be determined by each Member State according to its administrative structure**, where they exceed the average exposure concentration objectives set out in Section 5, Point C, of Annex I. ⇦ ~~by the year specified therein.~~

- **Article 13.7** establishes that MS that introduce more stringent air quality standards shall notify them to the Commission. The title of article 13 refers to limit values, ozone target values and average exposure reduction obligation but according to article 1.2, air quality standards also include information and alert thresholds. With the current wording it is not clear whether all air quality standards are expected be notified to the Commission or if only limit values, ozone target values and average exposure reduction obligation should be notified. If this provision applies to all air quality standards, this provision should also be included in article 15 for alert and information thresholds. In case this provision only refers to limit values, ozone target values and average exposure reduction obligation, it should be clearly detailed in article 13.7.

Annex I. Air quality standards. Section 1 – Limit values for the protection of human health

As mentioned on art 13.1 we still have scrutiny reservation for the values in Annex I, section 1.

Regarding PM10, we have noticed that part B of Annex V on Data coverage of measures for ambient air quality assessment do not mention the possibility of assessing PM10 with percentile 90.4 for random measurements. Directive 2008/50 includes the calculation of percentile 90,4 in annex I (Data Quality Objectives). We would appreciate to include again this percentile in the new Directives proposal.

Annex I. Air quality standards. Section 2 – Ozone target values and zone long-term objectives

- **Annex I, Section 2. B. Ozone target value**
  - Protection of the Environment objective includes AOT40. Nevertheless, the option to use POD dose-based indicators is more in line with the NEC Directive, where this indicator is considered more biologically relevant and specific to vegetation types (NEC Directive does not use AOT40 as an indicator of ozone risk to vegetation). The NEC Directive considers POD as the appropriate indicator as it is more biologically meaningful. There are a few references (see note[i] at the end of this document) that justifies the preference of dose-based indicators (PODs) over concentration indices (AOT40s) as the most biologically relevant risk indicator for ozone effects. For this reason, we propose to include the option of using POD as an additional target value for the protection of the environment. The proposal could be as follows:

B. Ozone target values

Objective	Averaging period	Target value	
Protection of human health	Maximum daily 8-hour mean (1)	120 µg/m³	not to be exceeded on more than 18 days per calendar year averaged over 3 years (2)
Protection of the environment	May to July	AOT40 (calculated from 1-hour values)	18 000 µg/m³ × h averaged over 5 years (2)
		POD(3)	**In accordance with indicators under Directive (EU) 2016/2284)**

(1) The maximum daily 8-hour mean concentration shall be selected by examining 8-hour running averages, calculated from hourly data and updated each hour. Each 8-hour average so calculated shall be assigned to the day on which it ends. i.e. the first calculation period for any 1 day will be the period from 17.00 on the previous day to 1.00 on that day; the last calculation period for any 1 day will be the period from 16.00 to 24.00 on the day.

(2) If the 3- or 5-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 1 year,
- for the target value for the protection of vegetation: valid data for 3 years.

(3) Whenever is considered more biological relevant and is used at specie-specific level (and in accordance with indicator undertaken under Directive (EU) 2016/2284)

C. Long-term objectives for ozone (O_3)

Objective	Averaging period	Long-term objective	
Protection of human health	Maximum daily 8-hour mean within a calendar year	100 µg/m³ (1)	
Protection of vegetation	May to July	AOT40 (calculated from 1 h values)	6 000 µg/m³ × h
		POD(2)	**In accordance with indicators under Directive (EU) 2016/2284)**

(1) 99th percentile (i.e. 3 exceedance days per year).

(2) Whenever is considered more biological relevant and is used at specie-specific level (and in accordance with indicator undertaken under Directive (EU) 2016/2284)

- **Annex I, Section 2. A**. Definition and criteria
    - If POD is included in the proposal, Part A of Section 2 should incorporate a definition and criteria for POD, as it is done for AOT40, so that this could serve as a reference for the EM that consider applying POD.
    - In addition, it is noted that section 2.A Definition and criteria indicates that the calculation of the AOT40 is carried out in CET time. Nevertheless, the time format is not specified for other values in the proposal.

Annex I. Air quality standards. Section 5 – Average exposure reduction obligation for $PM_{2.5}$ and NO_2

Annex I. B. According to our proposal to include NUTS2 as territorial unit for the average exposure reduction obligation, including NUTS2 is proposed, both for in section 5.A and definitions 28 and 29.

Annex I.B establishes the period over which the average exposure reduction obligation must be calculated from 2030. This time is established in 10 years before (unless it is already no higher than the average exposure concentration defined in section C). This 10-year period would cover, according to the wording, the 3-calendar-year running annual mean for years 2019, 2020 and 2021 from 2030. Due to the special circumstances of 2020 COVID-19 lockdown, we would like to know **how the COM has assessed the circumstance of including 2020 and 2021 in the calculation as they are two years not representative of the AQ historical series.**

In **annex I.B**, is also noted that annex V should have included uncertainty values for the 3-calendar-year running annual mean concentration averaged over all sampling points.

As for **annex I.C** it should be noted that the average exposure concentration objectives (AEI) are very near the quantification limit of the measurement technique. In practice it is observed that, when determining equivalence with the reference method of automatic analysers at very low concentrations, and especially for PM2,5, the methods are not equivalent. The uncertainty calculated according to standard 16450 in these cases exceeds 100%, and therefore it is not possible to meet the maximum percentage of uncertainties established in the standard. For these reasons, we consider that the obligation of not exceeding new AIE (and also limit values) should be aligned with the pace of the measurement techniques development.

We therefore suggest the following changes on the text:

A. Average exposure indicator

The Average Exposure Indicator expressed in µg/m³ (AEI) shall be based upon measurements in urban background locations in territorial units at NUTS 1 **or NUTS 2** level, **to be determined by each Member State according to its administrative structure**, throughout the territory of a Member State. It shall be assessed as a 3-calendar-year running annual mean concentration averaged over all sampling points of the relevant pollutant established pursuant to Point B of Annex III in each NUTS 1 **or NUTS 2** territorial unit. The AEI for a particular year shall be the mean concentration of that same year and the preceding 2 years.
Where Member States identify exceedances attributable to natural sources, contributions from natural sources shall be deducted before calculating the AEI.
The AEI is used for the examination of whether the average exposure reduction obligation is met.

Article 4: Definitions (26-30)

(28) 20.'average exposure indicator' ~~shall mean~~ ⌦ means ⌫ an average level determined on the basis of measurements at urban background locations throughout the ~~territory of a Member State~~ ⇨ territorial unit at NUTS 1 **or NUTS 2 level to be determined by each MS according to its administrative structure** as described in Regulation (EC) No 1059/2003, or, if there is no urban area located in that territorial unit, at rural background locations, ⇦ and which reflects population exposure~~. It is,~~ used to ~~calculate~~ ⇨ check whether ⇦ the ~~national~~ ⇨ average ⇦ exposure reduction ⇨ obligation ⇦ ~~target~~ and the ⇨ average ⇦ exposure concentration ~~obligation~~ ⇨ objective for that territorial unit have been met ⇦ ;

~~(29)~~ ~~22.~~'~~national~~ ⇨ average ⇦ exposure reduction ⇨ obligation ⇦ ~~target~~' ~~shall mean~~ ⌦ means ⌫ a percentage reduction of the average exposure of the population ⇨ , expressed as average exposure indicator, ⇦ of a ⇨ territorial unit at NUTS 1 **or NUTS 2 level to be determined by each MS according to its administrative structure** as described in Regulation (EC) No 1059/2003 of the European Parliament and of the Council[1] ⇦ ~~Member State~~ set for the reference year with the aim of reducing harmful effects on human health, to be attained ~~where possible~~ over a given period;

Article 14: Critical levels ⌦ for the protection of vegetation and natural ecosystems ⌫ and Annex

I. Air quality standards. Section 3 – Critical levels for the protection of vegetation and natural ecosystems.

The wording "for the protection of vegetation and natural ecosystems" was added in title of article 14. Annex XIII of the current Directive, which establishes critical levels, only refers to "vegetation protection", so we ask to clarify whether this addition is a generic reference or if it implies any additional obligation on natural ecosystems protection with respect to the current version of the Directive. This comment also applies to annex I, section 3, where the wording "and natural ecosystems" has been added.

Article 4: Definitions (31)

We propose to use the same definition for "critical level" according to Air Convention (CLRTAP) Mapping manual, chap 3, Critical levels for vegetation[1] . Our proposal is to modify the definition as follows:

(31) ~~6.~~'critical level' ~~shall mean~~ ⌦ 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~~ **sensitive vegetation**, according to present knowledge;

Article 15: ⌦ Exceedances of ⌫ alert ⌦ or information ⌫ thresholds

We support the inclusion of the new alert thresholds for particulate matter (PM10 and PM2.5) due to high impact on health of this pollutant. We also believe that it is necessary to include additional information thresholds for NO2, SO2 and particulate matter, so that the public is informed when pollution levels are already high even if the alert threshold has not been reached.

We propose to align the information and alert thresholds of the AAD proposal with our Short-term framework action plan in the event of ambient air pollution episodes due to PM 10, PM 2,5, NO_2, O_3 and SO2[1] .

We believe that taking action after 3 days for PM it may be too late, that is why we propose to **include both an information threshold for PM and the possibility of use predicted values** so the actions are taken as soon as possible.

Therefore, we suggest the following change on the text on article 15.1:

1. The alert **and information** thresholds for concentrations of sulphur dioxide, nitrogen dioxide and particulate matter (PM10 and PM2.5) in ambient air shall be those laid down in Section 4, Point A of Annex IXII.

Annex I. Air quality standards. Section 4 – Alert and information thresholds

We suggest introducing the following changes to the table of both information and alert threshold. According to this alignment, and in line with the comments in section I of annex I, we propose to introduce an information threshold for nitrogen dioxide nitrogen when hourly levels are higher than 200 µg/m³. In the same way, we propose an information threshold for sulphur dioxide when hourly levels are higher than 350 µg/m³. We make this proposal to ensure that population is informed on air quality when hourly air quality levels are higher than these values.

A. Information and Alert thresholds for pollutants other than ozone

A.1. Information thresholds

Pollutant	Averaging period	Information Thershold
Sulphur dioxide (SO_2)	1 hour	350 µg/m³
Nitrogen dioxide (NO_2)	1 hour	200 µg/m³
PM 10	24 hours	50 µg/m³
PM 2,5	24 hours	35 µg/m³

[1] https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/atmosfera-y-calidad-del-aire/09072021planepisodios_tcm30-529218.pdf

A.2 Alert thresholds

To be measured **or predicted** over 3 consecutive hours in the case of sulphur dioxide and nitrogen dioxide, and over three consecutive days for PM_{10} and $PM_{2.5}$, at locations representative of air quality over at least 100 km^2 or an entire zone, whichever is the smaller.

Pollutant	Alert threshold
Sulphur dioxide (SO_2)	500 µg/m^3
Nitrogen dioxide (NO_2)	400 µg/m^3
$PM_{2.5}$	50 µg/m^3
PM_{10}	~~90~~ **80** µg/m^3

Where the exceedance of the thresholds is a **consequence of secondary pollutants, measures shall target their precursors,** provided that a causal link can be established between these measures and the expected concentrations of the secondary pollutants.

Furthermore, it is important to indicate that **in case of PM 10 and PM2,5 information and alert threshold can be exceeded due to contributions from natural sources**, it is important to inform the public, but **actions could only be taken on antropogenic emission sources** therefore we suggest the following modification on annex IX as per the reference included into article 15.3.

Annex IX. Air quality standards. Section 3 – Public information (points 2 and 3)

Point 2 of annex IV establishes that MS shall ensure timely information to the public about actual or predicted exceedances of alert thresholds, and any information threshold. Such information shall:

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

When the cause of exceedances of alert and information thresholds are natural sources, preventive action to reduce pollution is very limited. In such cases, information can be provided on preventive action to reduce exposure, but preventive action to reduce pollution can only be done if possible. Thus, we suggest to include the following change in d):

> (d) information on preventive action to reduce pollution and/or exposure to it: indication of main source sectors; recommendations for action to reduce emissions **from anthropogenic sources**;

Article 4: Definitions (32-33)

Section 4 of Annex I establish, for PM2,5 and PM10 alert thresholds will be measured for 3 consecutive days. Thus, the threshold will be determined on the fourth day. From our point of view, **a period of 3 consecutive days shuould not be considered "a brief exposure"** and this should be reflected in the definitions. We propose the change:

(32) 11.'information threshold' ~~shall mean~~ ⌦ means ⌫ a level beyond which there is a risk to human health from brief exposure**, or exposure maintained for several days**, for particularly sensitive ~~sections of the~~ population ⌦ and vulnerable groups ⌫ and for which immediate and appropriate information is necessary;

(33) 10.'alert threshold' ~~shall mean~~ ⌦ means ⌫ a level beyond which there is a risk to human health from brief exposure**, or exposure maintained for several days,** for the population as a whole and at which immediate steps are to be taken by ~~the~~ Member States;

Article 16: Contributions from natural sources

Regarding the evidence of demonstrating that the exceedances are attributable to natural sources included article 16.2 it should be taken into account that methods for quantifying natural contributions to PM, even the more advanced tools, have a high uncertainty, and that this should be taken into account for compliance of limit values for PM, which are markedly reduced in the new Directive proposal.

According to WHO there is a small body of evidence that relates African dust intrusions over Europe with health outcomes, mostly increases of cardiovascular mortality and respiratory morbidity. Although this is an issue affecting more Southern Europe, Azores and the Canary Islands, it is probable that climate change intensifies the frequency and intensity of dust episodes affecting central and northern Europe. In addition to discount natural exceedances, the population should be protected from these acute PM episodes by: i) declaring pollution episodes and reduce anthropogenic emissions during these episodes; ii) having implemented alert systems to prevent the most sensible population to be exposed to high PM levels; and iii) when possible implement measures, such street washing (with urban non-drinking water) road surfaces to abate resuspension by road traffic of deposited dust in the subsequent days to the episode. For this, it is important to include both information and alert thresholds for PM in the proposal as proposed in article 15 and Annex I.

According to our proposal to include NUTS2 as territorial unit for the average exposure reduction obligation, including NUTS2 is proposed, in art 16.1 b) and 16.2 as follows:

1. Member States ⇨ may ⇦ ~~shall transmit to the Commission~~, for a given year, ~~lists of~~ ⇨ identify ⇦ :

(a)~~-~~ zones ~~and agglomerations~~ where exceedances of limit values for a given pollutant are attributable to natural sources;⌦ and ⌫

(b) NUTS 1 **or NUTS2** territorial units where exceedances of the level determined by the average exposure reduction obligations are attributable to natural sources.

2. Member States shall provide ⇨ the Commission with lists of any such zones and NUTS 1 **or NUTS 2** territorial units, as referred to in paragraph 1, together with ⇦ information on concentrations and sources and the evidence demonstrating that the exceedances are attributable to natural sources.

As in Article 17.3, it would be appropriate to **specify the need to establish that Article 19, regarding air quality plans, only applies in cases where exceedances of particulate matter are not attributable to natural sources**. We suggest the following introduction on article 16:

16.4. In the case of zones referred to in paragraph 1 of this Article, Member States need to establish the air quality plan provided for in Article 19 only in so far as exceedances are attributable to PM10 sources other than natural sources.

Article 18: Postponement of attainment ⇨ deadline ⇦ and exemption from the obligation to apply certain limit values

We still have scrutiny reservation for this article as is related to our scrutiny reservation on the values and dates by which the LV shall be met in Annex I, section 1. We would appreciate an explanation from the COM on how the new proposals on emissions regulation, specially EURO 7, will allow us to met the new standards and the proposed dates.

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[i] **CLRTAP, 2017. Chapter 3 Mapping critical levels for vegetation. Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects, Risks and Trends. Umwelbundesamt, Berlin. Disponible en: Manual for Modelling and Mapping Critical Loads & Levels | Umweltbundesamt**

- III.3.1.2 METRICS FOR CRITICAL LEVELS OF O3 FOR VEGETATION. A glossary for all terms used for O3 critical levels is provided in Annex III.2. For O3, two types of metrics are available for risk assessment, either based on the cumulative stomatal flux or the cumulative exposure. Scientific evidence suggests that observed effects of O3 on vegetation **are more strongly related to the uptake of O3through the stomatal leaf pores (stomatal flux) than to the concentration** in the atmosphere around the plants (Mills et al., 2011b). Stomata are physiologically controlled and respond to environmental conditions such as temperature, light, air humidity and soil moisture, as well as plant growth stage. For example, under hot and dry conditions, plants close their stomata to reduce water loss and as a consequence O3 uptake is reduced. The DO3SE model (Deposition of O3 for Stomatal Exchange) has been developed to account for the variation in stomatal opening and closing with climatic, soil and plant factors (Büker et al., 2012; Emberson et al., 2000a,b, 2001, 2007).

- […] **The flux-based PODY metrics are preferred in risk assessment over the concentration-based AOT40 exposure index** (defined in Box 3). AOT40 accounts for the atmospheric O3 concentration above the leaf surface and is therefore biologically less relevant for O3 impact assessment than PODY as it does not take into account how O3 uptake is affected by climate, soil and plant factors. This is particularly relevant on the pan-European scale with large climate differences between different regions. AOT40 can be used in cases where only O3 concentration data are available (when meteorological and/or vegetation-specific information to calculate PODY are not available) and/or areas where no climatic or water restrictions to stomatal O3 flux are expected. This approach predicts a different spatial pattern of impacts on the pan-European scale than PODY (Mills et al., 2011a; Simpson et al., 2007).

Colette et al., 2018. Long-term evolution of the impacts of ozone air pollution on agricultural yields in Europe. A modelling analysis for the 1990-2010 period. Eionet Report - ETC/ACM 2018/15. Disponible en: ETC/ACM Report 15/2018: Long-term evolution of the impacts of ozone air pollution on agricultural yields in Europe Eionet Report — Eionet Portal (europa.eu)

- 2.1 Ozone indicators. Two indicators (or metrics) are used in this report to assess the impact of ozone on wheat yield. The AOT40 is the metric defined in the 2008 European Directive on Ambient Air Quality (EC, 2008). The acronym stands for Accumulated Ozone exposure over a Threshold of 40 parts per billion (80 µg/m3) and details of the computation of the metric and related impacts on yield are provided in Section 3.1.1. **An alternative and biologically more relevant metric has been developed in recent decades**, in particular through the work of the Working Group on Effects of the LTRAP Convention. **The ozone flux-based metric is referred to as POD**, which stands for phytotoxic ozone dose and provides an estimation of the flux of ozone into the plant above a given threshold. Details of the computation of that metric and related impacts on wheat yield are provided in Section 3.1.2. **It should be noted that POD is the preferred indicator for assessing the risk of adverse effects of ozone on vegetation (including crops) and any subsequent economic assessments.**

EMEP, 2022. Transboundary particulate matter, photo-oxidants, acidifying and eutrophying components. EMEP Status Report 1/2022. Norwegian Meteorological Institute. Disponible en:

- 2.4 Air pollution in 2020. 2.4.1 Ozone. [...] Although AOT40 (especially using the Mapping Manual definition) has been used as an indicator of ozone damage vegetation in the past, **the preferred metric in recent years has been phyto-toxic ozone dose, POD**.

Horalek et al., 2022. ETC/ATNI Report 1/2021: European air quality maps for 2019. PM10, PM2.5, Ozone, NO2 and NOx Spatial estimates and their uncertainties. Disponible en: ETC/ATNI Report 1/2021: European air quality maps for 2019. PM10, PM2.5, Ozone, NO2 and NOx Spatial estimates and their uncertainties. — Eionet Portal (europa.eu)

- 4.4 Ozone – Phytotoxic Ozone Dose (POD). [...] **Scientific evidence suggests that observed effects of ozone on vegetation are more strongly related to the uptake of ozone through the stomatal leaf pores (stomatal flux) than to the concentration in the atmosphere around the plants** (Mills et al., 2011). It is generally accepted that the most severe ozone effects on plants are caused by ozone that is taken up through the stomata into the leaf interior (Reich, 1987; Ashmore et al., 2004).

- [...] **The flux-based PODY metrics are preferred in risk assessment over the concentration-based AOT40 exposure index. AOT40 accounts for the atmospheric ozone concentration above the leaf surface and is therefore biologically less relevant for ozone impact assessment than PODY** as it does not take into account how ozone uptake is affected by climate, soil and plant factors.

MALTA

Malta's Written Comments on the Ambient Air Quality Directive

Following the call for written comments as issued by the Presidency after the WPE of 9 March 2023 (WK 3449/2023), Malta would like to submit the following comments.

Article 12:

Malta supports the text in Article 12(2) and highlights the need to acknowledge and account for "*factors including the transboundary nature of ozone pollution and meteorological conditions*". The impact that transboundary ozone has on Malta is scientifically proven. In this light, the elevated ozone levels, coupled with specific meteorological conditions of the Mediterranean basin will pose a great challenge for Malta to comply with ozone target values. This will require global efforts to reduce ozone precursors.

Malta believes that the text in Article 12(4) is not in line with the overall spirit of the Directive. The term "*shall endeavour to achieve and preserve […] in line with the air quality guidelines published by the WHO and below the assessment thresholds laid down in Annex II*" is in essence obliging Member States to abide by the WHO guidelines or assessment thresholds (which are equivalent). We believe that this requirement might lead to legal uncertainty with respect to compliance with limit values which are less stringent than WHO guidelines. Furthermore, the proposed text might also lead to confusion with stakeholders and the general public, which are led to believe that Member States need to legally comply with WHO guidelines. In this light, legal clarity is called for and Malta suggests that the spirit of the text in the current Directive is retained and reference to WHO guidelines and assessment thresholds removed.

Article 13:

Malta places a general scrutiny reservation on this Article.

With respect to Article 13(1), Malta is in the process of analysing the proposed limit values in detail, however, as preliminary feedback, Malta is in a position to confirm that it will be unable to reach the proposed daily and annual limit values for PM_{10}, following deduction of natural sources. The same applies to the annual limit value for nitrogen dioxide (NO_2). Reaching these stringent limit values will necessitate major changes to the national transport policy, which might bring about disproportionate costs, potentially resulting in unequal impact and unequal exposure on low-income families, which also goes against the spirit of the Directive's amendments.

With respect to Article 13(2), Malta would like to reiterate our comments on Article 12(2). Malta will be able to experience a lowering of its ozone concentrations, only if global measures in reducing ozone precursors are implemented.

Concerning article 13(3), MT would like to request clarification as to the legal implications if the average exposure reduction obligation is not achieved as from 2030, particularly if a Member State complies with the LV. Will the LV cease to exist as of the 1st of January 2030 and be replaced by the Average Exposure Reduction Obligation (AERO) for $PM_{2.5}$ and NO_2 on the same date? MT would like further clarifications on which value is applicable before 2030, i.e. the AERO or LV?

Article 15:

Reference is made to the introduction of alert thresholds for short-term measures on pollution peaks. Malta requests clarification on the overall scope of this requirement. Is it meant to inform the general public on past short-term pollution peaks? With respect to the exceedance of 3 consecutive hours for SO_2 and NO_2 and 3 consecutive days for $PM_{2.5}$ and PM_{10}, what is the way forward when the level is not exceeded in the fourth hour/day of measurement?

Article 16

Malta calls for a guidance document for the deduction of natural sources from $PM_{2.5}$. It is indeed proven that an important contribution of the annual $PM_{2.5}$ concentration in Malta is driven by sea salt and Saharan dust[1]. Malta would like to request clarification on whether the re-suspension of dust on roads, which is of primary natural origin (Saharan dust and sea salt), can also be deducted from PM concentrations.

[1] Mark M. Scerri, Konrad Kandler, Stephan Weinbruch, Eduardo Yubero, Nuria Galindo, Paolo Prati, Lorenzo Caponi, Dario Massabò, Estimation of the contributions of the sources driving PM2.5 levels in a Central Mediterranean coastal town, Chemosphere, Volume 211, 2018, Pages 465-481.