

Παρακολούθηση Ποιότητας Αέρα στις Πόλεις

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Τμήμα Επιθεώρησης Εργασίας

<http://www.airquality.gov.cy>

Περιεχόμενα

- Εισαγωγή
- Νομοθετικό Πλαίσιο
- Δίκτυο Παρακολούθησης ΠΑΑ
- Αποτελέσματα Μετρήσεων ΠΑΑ
- Αποτελέσματα Εκπομπών από Οχήματα

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Ξέρετε ότι ...

- ο αέρας που αναπνέετε περιέχει **πολλούς ρύπους**;
- η ατμοσφαιρική ρύπανση έχει **πολλές πηγές** (ανθρωπογενείς και φυσικές);
- οι ατμοσφαιρικοί ρύποι είναι **αόρατοι** και **ταξιδεύουν** πολλά χιλιόμετρα;
- η ατμοσφαιρική ρύπανση είναι **θανατηφόρα**, είναι αίτιο καρκίνου, καρδιακών και αναπνευστικών νοσημάτων;
- η ατμοσφαιρική ρύπανση **καταστρέφει τα δάση** και **σκοτώνει τα ψάρια**;
- η ατμοσφαιρική ρύπανση προκαλεί **κλιματική αλλαγή**;

Πονοκέφαλος και άγχος (SO_2)

Επιπτώσεις στο κεντρικό νευρικό σύστημα (ΑΣ)

Ερεθισμός ματιών, μύτης και λαιμού,
αναπνευστικά προβλήματα (O_3 , ΑΣ, NO_2 , SO_2)

Καρδιαγγειακές παθήσεις (ΑΣ, O_3 , SO_2)

Επιδράσεις στο αναπνευστικό σύστημα (ΑΣ):

Ερεθισμός, φλεγμονή και λοιμώξεις

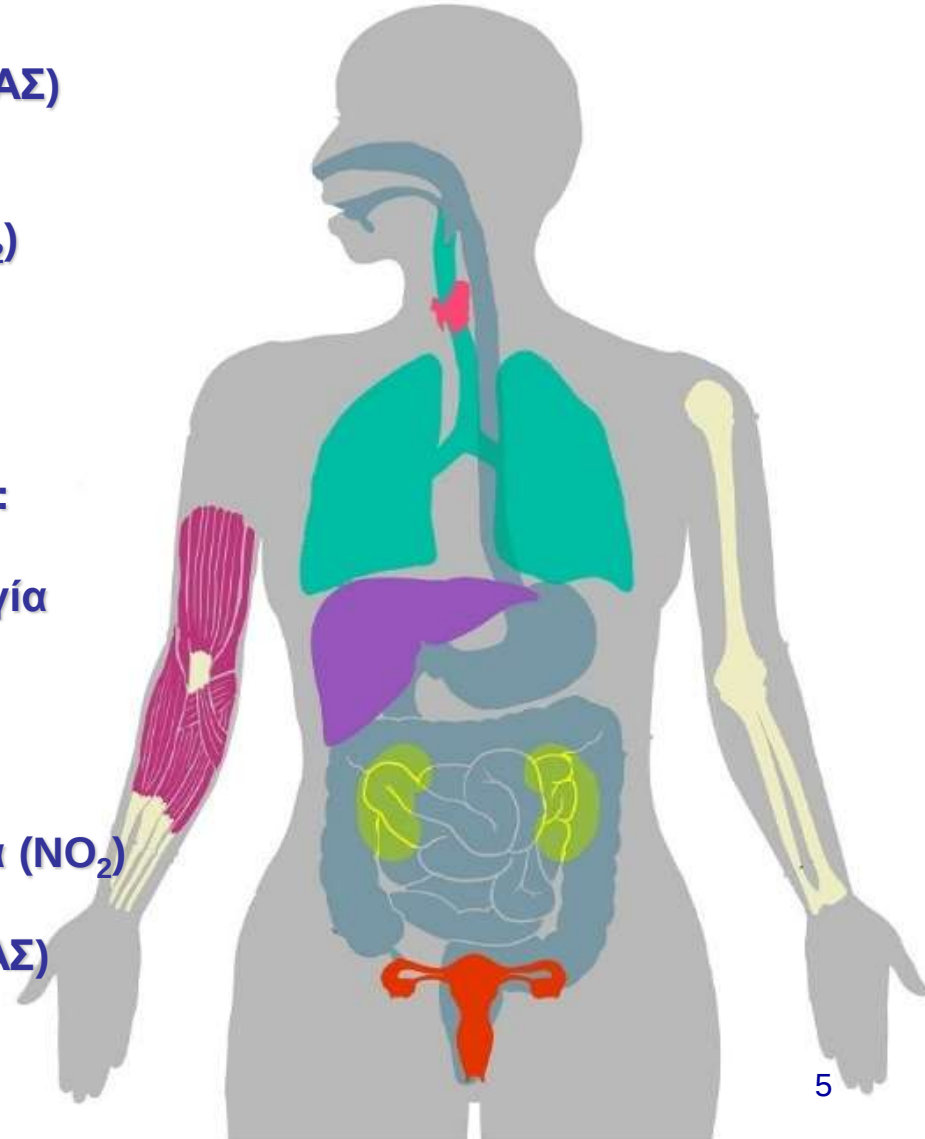
Άσθμα και μειωμένη πνευμονική λειτουργία

Χρόνια αποφρακτική πνευμονοπάθεια

Καρκίνος πνεύμονα

Επιδράσεις στο ήπαρ, τη σπλήνα και το αίμα (NO_2)

Επιπτώσεις στο αναπαραγωγικό σύστημα (ΑΣ)



New low-emission zones in Sweden

The first time the United Nations' government announced that since 1 January 2000, non-residents will be able to purchase the same amount of land as residents, it was a landmark decision. It was the first time in 120 years that the government is actually selling and not just leasing non-residents' land. The decision is a landmark, and it is a step in the right direction.

"Non-residents are buying land in the past," says the director of the National Land Commission, "but they are buying very small plots. We are now giving the same rights to the government and they have been buying in the past. We can now build a house in the past, but we can now build a house in the past. We can now build a house in the past, but we can now build a house in the past."

Diesels in low-emission zones?

more than 30 per cent of firms in America report no sales today don't count. On 11/11, however, looking at the road and the 100,000 people from the commercial sector is almost half.



the 1990s, the U.S. economy has been in a period of rapid growth and technological innovation. This has led to a significant increase in the demand for skilled labor, particularly in the fields of science, technology, engineering, and mathematics (STEM). The U.S. government has responded to this demand by implementing various policies to attract and retain foreign talent in these fields. One such policy is the H-1B visa program, which allows U.S. employers to hire foreign workers with specialized skills that are not readily available in the domestic labor market. The H-1B program has been a key component of U.S. immigration policy for decades, and it continues to play a vital role in the U.S. economy today.

[illegible]

Climate targets for trucks and cars in the making

The European Parliament is looking for more evidence of standards for use and abuse by 2005. Though some more work is needed to determine the vehicle fleet by 2005, the current information for use and abuse is as follows:

[illegible][illegible]

Such differences may suggest that the interpretation of the data is not straightforward, and that the results may be sensitive to the assumptions made.

The 11 management practices in the "super-sustainable" group, or the "best practice" group, were selected on the basis of the following criteria: (1) the practice was considered to be the most effective in the management of the system; (2) the practice was considered to be the most sustainable; (3) the practice was considered to be the most profitable; (4) the practice was considered to be the most socially acceptable; (5) the practice was considered to be the most environmentally friendly; (6) the practice was considered to be the most economically viable; (7) the practice was considered to be the most socially acceptable; (8) the practice was considered to be the most environmentally friendly; (9) the practice was considered to be the most economically viable; (10) the practice was considered to be the most socially acceptable; (11) the practice was considered to be the most environmentally friendly.

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Action needed to cut PM from tyres and brakes

A recent report from the UK Air Quality Expert Group (AQEG) warns about the increasing importance of non-exhaust emissions (NEE) from road traffic. NEE refers to tiny particles released into the air from brake wear, tyre wear, road surface wear and resuspension of road dust when vehicles are driving on roads. No legislation is currently in place to specifically limit or reduce these particles.

sources will also require reductions in non-renewable emissions, rather than simply focusing on lowering carbon emissions, said the ADPC.

The reports have put public employees back into the spotlight, and the public is asking questions.

Lab 4:

It is estimated that NEC particles currently constitute 60 and 77 per cent (by mass), respectively, of primary PM_{10} and $PM_{2.5}$ emissions from road transport in the UK (7.4 and 9.5 per cent of all UK primary PM_{10} and $PM_{2.5}$ emissions), and will become more dominant in the future. Achieving further improvements in PM_{10} and $PM_{2.5}$ air quality in relation to road transport



The legislation is currently in place to specifically limit industrial particles from being

London launches ultra-low emissions zone

Green groups have hailed the start of an ultra-low emissions zone (ULEZ) in London that sets the toughest vehicle emission standards for any urban air quality scheme in the world. As from 8 April, only petrol cars that meet the Euro 4 standard and diesel vehicles that meet the tighter Euro 6/VI standard will be exempt from paying a daily charge of £12.50, with lorries, buses and coaches that fail to meet emissions limits paying £100 a day.

The ULEZ was intended to enter force next year but London

mayor Sadiq Khan brought it forward as part of a package of measures to tackle air quality, and plans to expand it substantially in 2021. Data shows the ULEZ improving air quality even before it was introduced by organisations and businesses, with many moving to cleaner fleets to avoid the cost. Roadside measurements of nitrogen dioxide (NO₂) within the zone have dipped by 20 per cent.

The ULEZ, combined with a pack of other measures being put in place by the mayor, is expected to deliver compliance with EU NO₂ limits within six years.

Source: *Euclid Europe Daily*, 8 April 2019.

Source: Erids Europe Daily, 8 April 2019

France found guilty of breaching NO₂ limits

The European Court of Justice (ECJ) has ruled that France "systematically and persistently" breached EU limits for nitrogen dioxide (NO₂) across 12 urban areas, including Paris, Marseille, Strasbourg, Nice and Toulouse. The limits should have been met in 2010.

The ECJ referred to article 23 of the Air Quality Directive, which states that measures must be taken to ensure that the exceedance time is kept "as short as possible". It also said that it was "irrelevant" whether the breaches

were by intent, neglect or attributable to technical or structural difficulties.

The ruling was a clear win for the Commission, which took the case to the ECJ as the final step of its infringement process. It also sets the tone for a spate of other dirty air cases against member states that include Germany, UK, Italy and more recently Spain and Bulgaria which are still pending a decision.

Source: Ends Europe Daily, 24 October 2019
ECJ press release: <https://curia.europa.eu/jcms/upload/docs/application/pdf/2019-10/cp190132en.pdf>

Diesel cars cause high health costs

Recent research by scientists at the University of Oxford and University of Bath suggests that the health damage effects associated with diesel vehicle emissions are around 20 times greater than electric vehicles and at least five times greater than those associated with petrol vehicles.

The study generated location-specific per-vehicle costs calculated for cars and vans over an estimated 14-19-year lifespan. For inner city areas such as inner London, the research suggested that

the average cost to the NHS and society of a car is UK£7,714 over its lifetime, while the health damage cost from diesel cars is UK£16,424 and vans 24,555.

Battery electric cars and vans are between £1,682 and 1,443 - the lowest cost, while researchers suggested

that petrol damage costs are UK£2,327 and 10,101 for cars and vans, respectively. Source: AirQualityNews, 6 June 2018

The report "The health costs of air pollution from cars and vans": <https://www.cleandairday.org.uk/Handlers/Download.ashx?ID=7eb71636-7d06-49cf-bb3e-76f105e2c631>

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Νομοθετικό Πλαίσιο

- Οι περί της Ποιότητας του Ατμοσφαιρικού Αέρα Νόμοι του 2010 και 2017 (Ν. 77(I)/2010 και Ν. 3(I)/2017)
- Οι περί της Ποιότητας του Ατμοσφαιρικού Αέρα (Αρσενικό, Κάδμιο, Υδράργυρος, Νικέλιο και Πολυκυκλικοί Αρωματικοί Υδρογονάνθρακες στον Ατμοσφαιρικό Αέρα) Κανονισμοί του 2007 και 2017 (Κ.Δ.Π. 111/2007 και Κ.Δ.Π. 38/2017)
- Οι περί της Ποιότητας του Ατμοσφαιρικού Αέρα (Οριακές τιμές Διοξειδίου του Θείου, Διοξειδίου του Αζώτου, Σωματιδίων, Μολύβδου, Μονοξειδίου του Άνθρακα, Βενζολίου και Όζοντος στον Ατμοσφαιρικό Αέρα) Κανονισμοί του 2010 και 2017 (Κ.Δ.Π. 327/2010 και 37/2017)
- Οι περί της Ποιότητας του Ατμοσφαιρικού Αέρα (Ετήσια Ανώτατα Όρια Εκπομπών για ορισμένους Ατμοσφαιρικούς Ρύπους) Κανονισμοί του 2004 έως 2017 (Κ.Δ.Π. 193/2004, Κ.Δ.Π. 379/2005, Κ.Δ.Π. 25/2012 και Κ.Δ.Π. 212/2017).

Κύριες Πρόνοιες Νομοθεσίας

- Δίκτυο Παρακολούθησης (Σταθμοί)
- Καθορισμός ρύπων υπό παρακολούθηση
- Οριακές τιμές για προστασία του πληθυσμού
- Οριακές τιμές για προστασία της βλάστησης
- Όρια ενημέρωσης/συναγερμού
- Εθνικά Ανώτατα Όρια Εκπομπών
- Σχέδια Δράσης
- Τεχνική Επιτροπή

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Τύποι Σταθμών

- **Κυκλοφοριακός Σταθμός**

Ο σταθμός τοποθετείται σε περιοχές με αυξημένη κυκλοφοριακή κίνηση, για τμήμα δρόμου μεγαλύτερο των 100 μέτρων και απόσταση ίση ή μεγαλύτερη από 25 μέτρα από κύριο κυκλοφοριακό κόμβο και μικρότερη από 10 μέτρα από το πεζοδρόμιο (Χείριστο σενάριο).

- **Οικιστικός Σταθμός**

Ο σταθμός τοποθετείται σε κατοικημένη περιοχή ώστε οι μετρούμενες συγκεντρώσεις ρύπων να αντιπροσωπεύουν το σύνολο των πηγών ατμοσφαιρικής ρύπανσης που επηρεάζουν την περιοχή εγκατάστασης του σταθμού (Σχολεία).

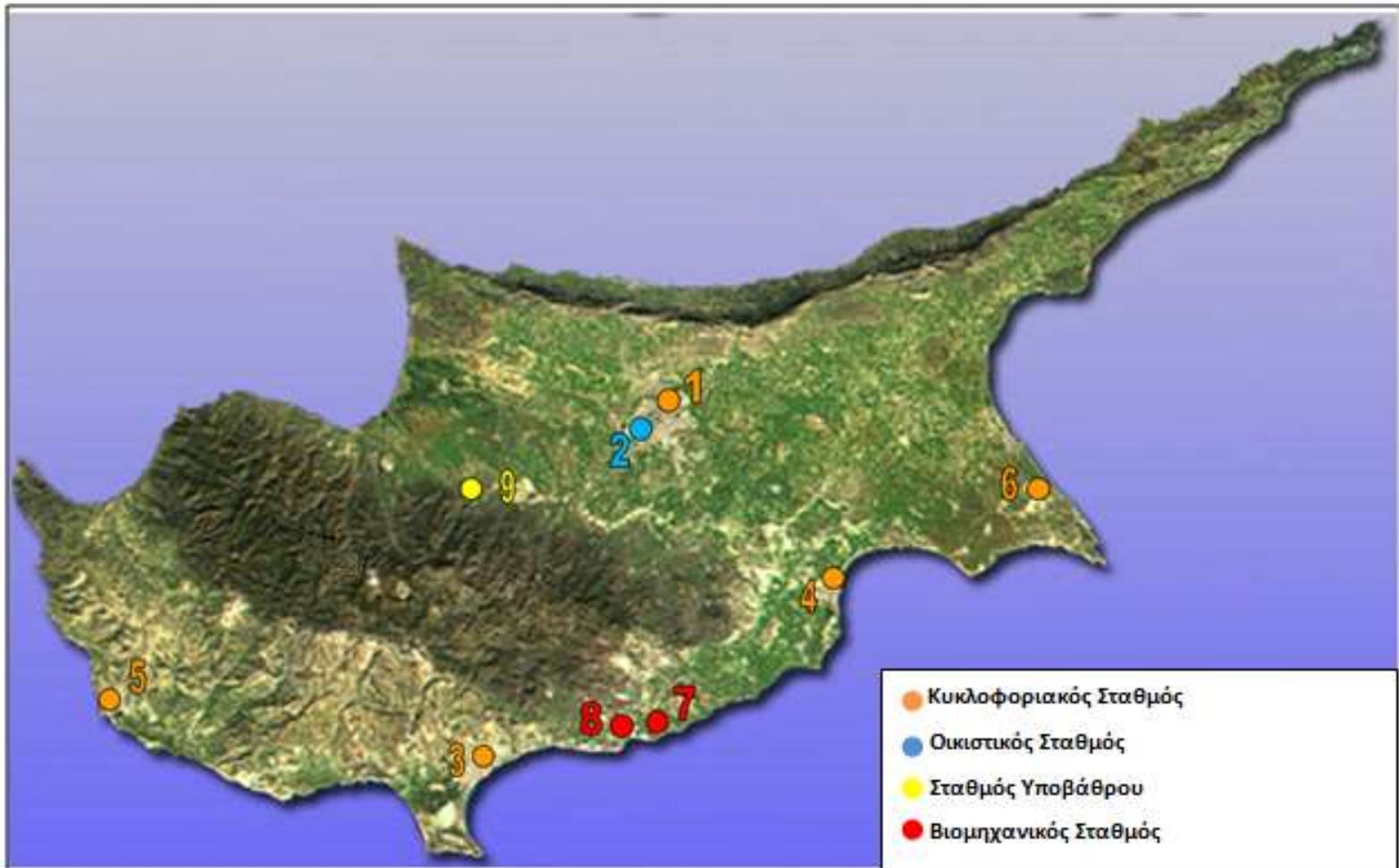
- **Βιομηχανικός Σταθμός**

Ο σταθμός είναι αντιπροσωπευτικός συγκεντρώσεων ρύπων που προέρχονται από βιομηχανικές πηγές (περιοχή Ζύγι – Βασιλικό).

- **Σταθμός Υποβάθρου**

Ο σταθμός τοποθετείται σε τοποθεσία που δεν επηρεάζεται από βιομηχανικές ή άλλες ανθρωπογενείς πηγές. Ο σταθμός να βρίσκεται περισσότερα από 20 km μακριά από γνωστές πηγές ρύπανσης και περισσότερα από 5 km μακριά από κατοικημένες και βιομηχανικές περιοχές, αυτοκινητόδρομους ή κύριους δρόμους από τους οποίους διέρχονται πάνω από 50000 αυτοκίνητα ανά ημέρα. Οι μετρήσεις του σταθμού είναι ενδεικτικές αερομεταφερόμενων ρύπων και αντιπροσωπεύουν τις τιμές υποβάθρου που θα πρέπει να λαμβάνονται υπόψη για την προστασία της βλάστησης και των οικοσυστημάτων.

Δίκτυο Σταθμών Παρακολούθησης



Σταθμός Παρακολούθησης



- Οξείδια αζώτου (NO , NO_2 , NO_x)
- Όζον (O_3)
- Διοξείδιο του θείου (SO_2)
- Αιωρούμενα Σωματίδια (AS_{10} , $\text{AS}_{2,5}$)
- Μονοξείδιο του άνθρακα (CO)



- Βενζόλιο (C_6H_6)
- Μετεωρολογικές Παράμετροι
(Διεύθυνση και ταχύτητα ανέμου,
θερμοκρασία, υγρασία)

Λειτουργία Συστήματος Παρακολούθησης Ποιότητας του Αέρα



**ΔΙΚΤΥΟ ΠΑΡΑΚΟΛΟΥΘΗΣΗΣ
ΤΗΣ ΠΟΙΟΤΗΤΑΣ ΤΟΥ ΑΕΡΑ**

**ΚΕΝΤΡΙΚΟ ΣΥΣΤΗΜΑ ΕΛΕΓΧΟΥ ΤΩΝ
ΜΕΤΡΗΣΕΩΝ**



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ΜΕΣΩ ΙΣΤΟΣΕΛΙΔΑΣ**
<http://www.airquality.dli.mlsi.gov.cy/>



**ΠΛΗΡΟΦΟΡΗΣΗ ΚΟΙΝΟΥ
ΜΕΣΩ ΕΦΑΡΜΟΓΗΣ ΓΙΑ
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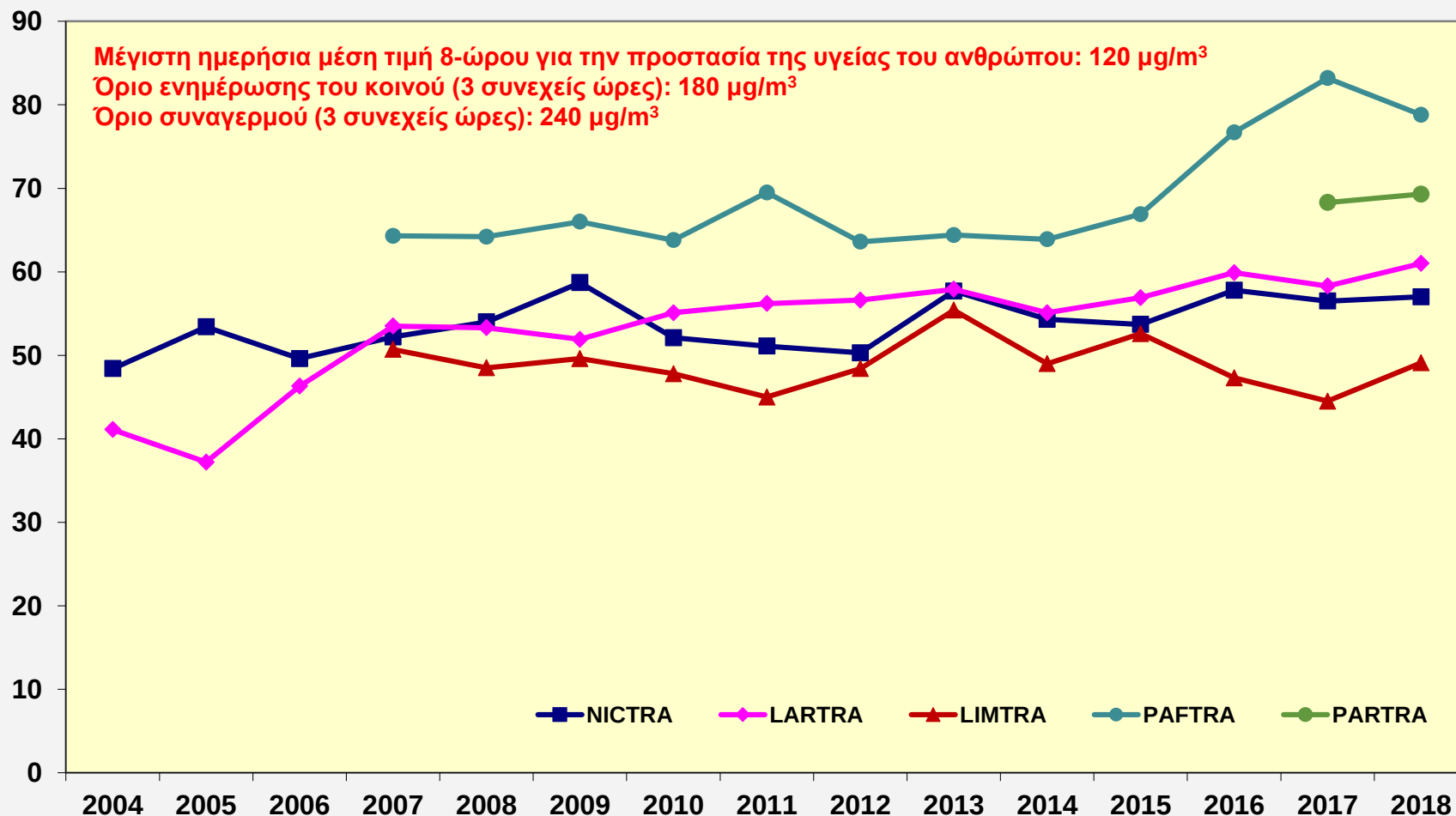
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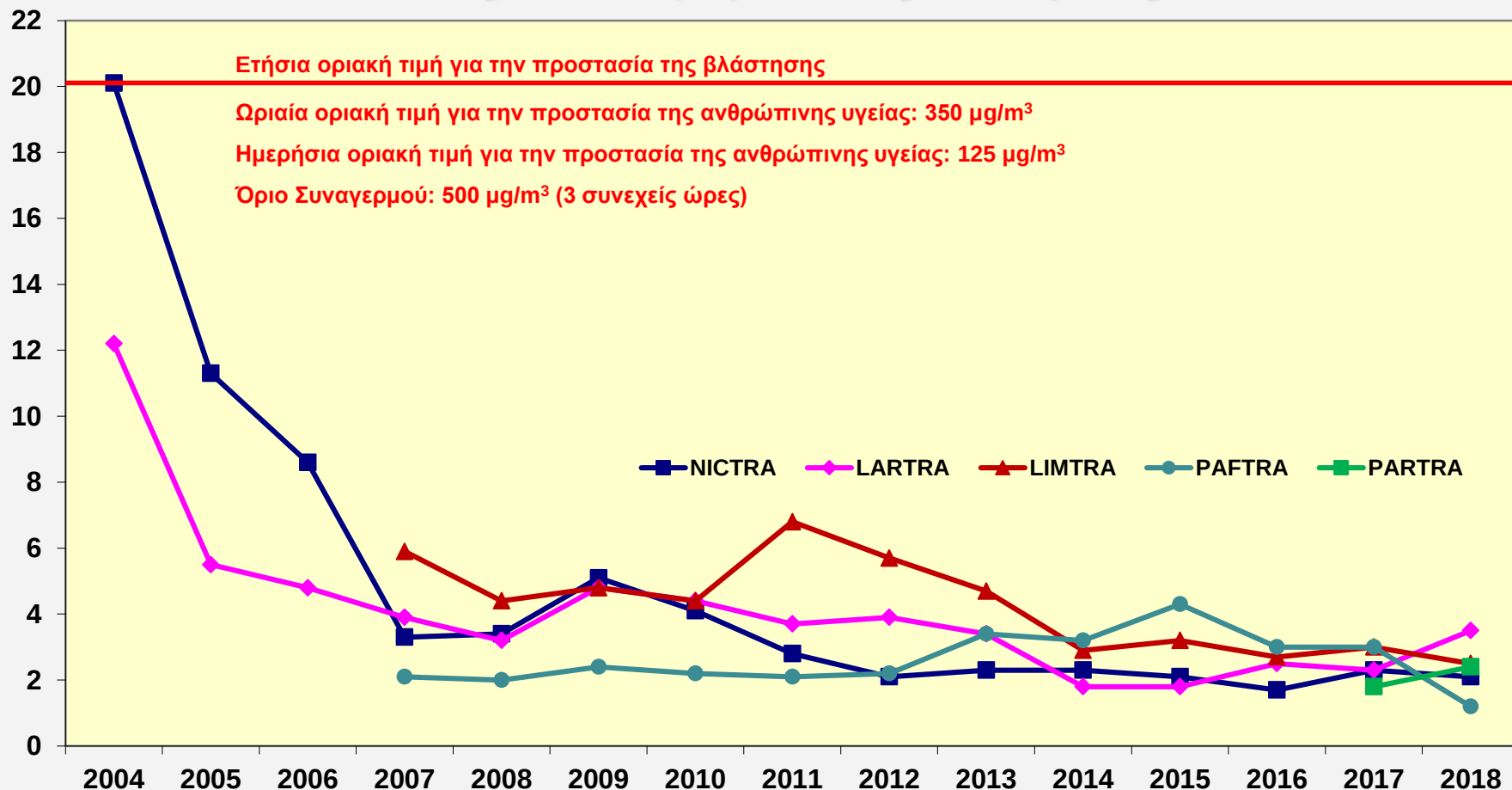
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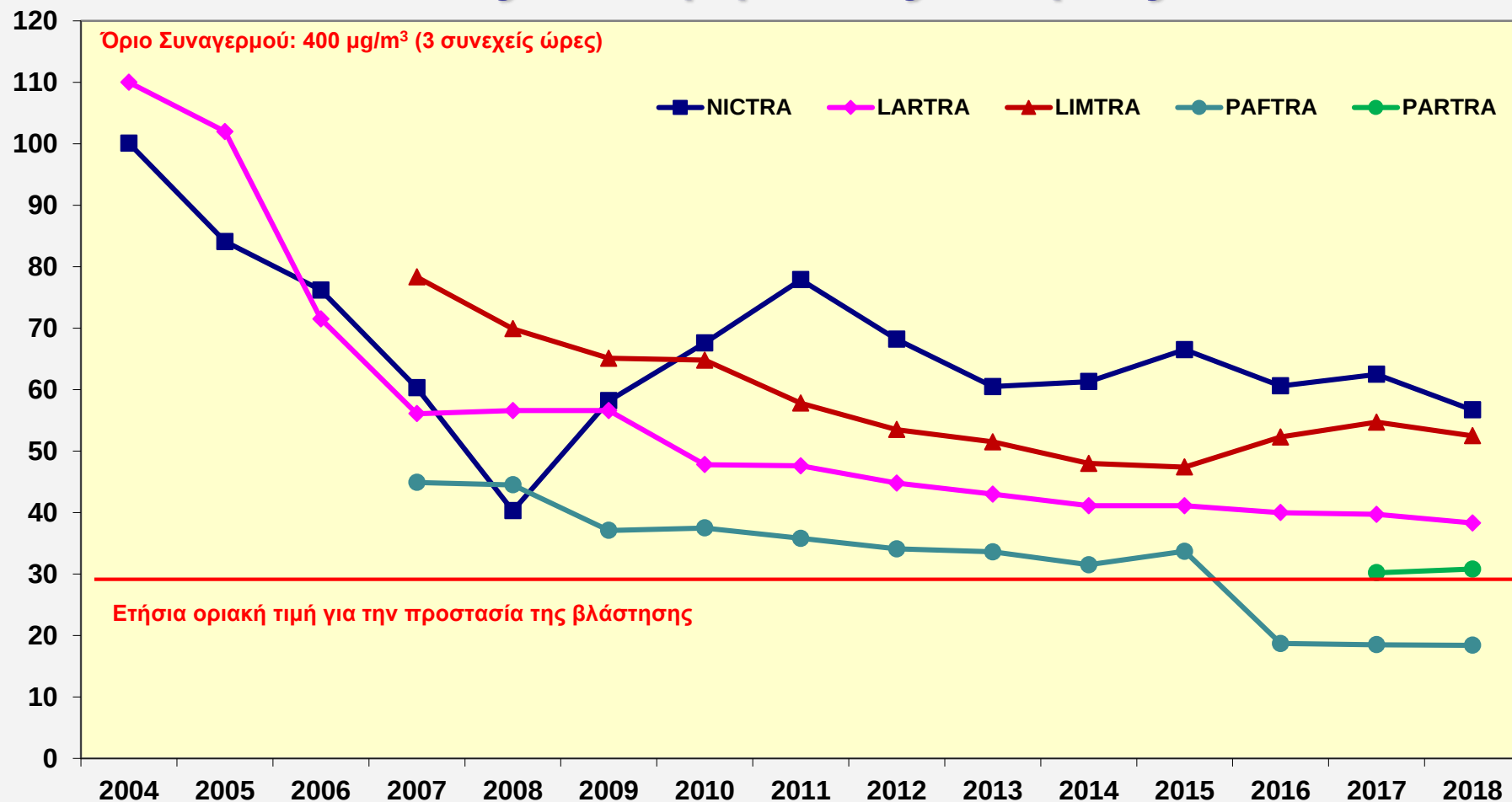
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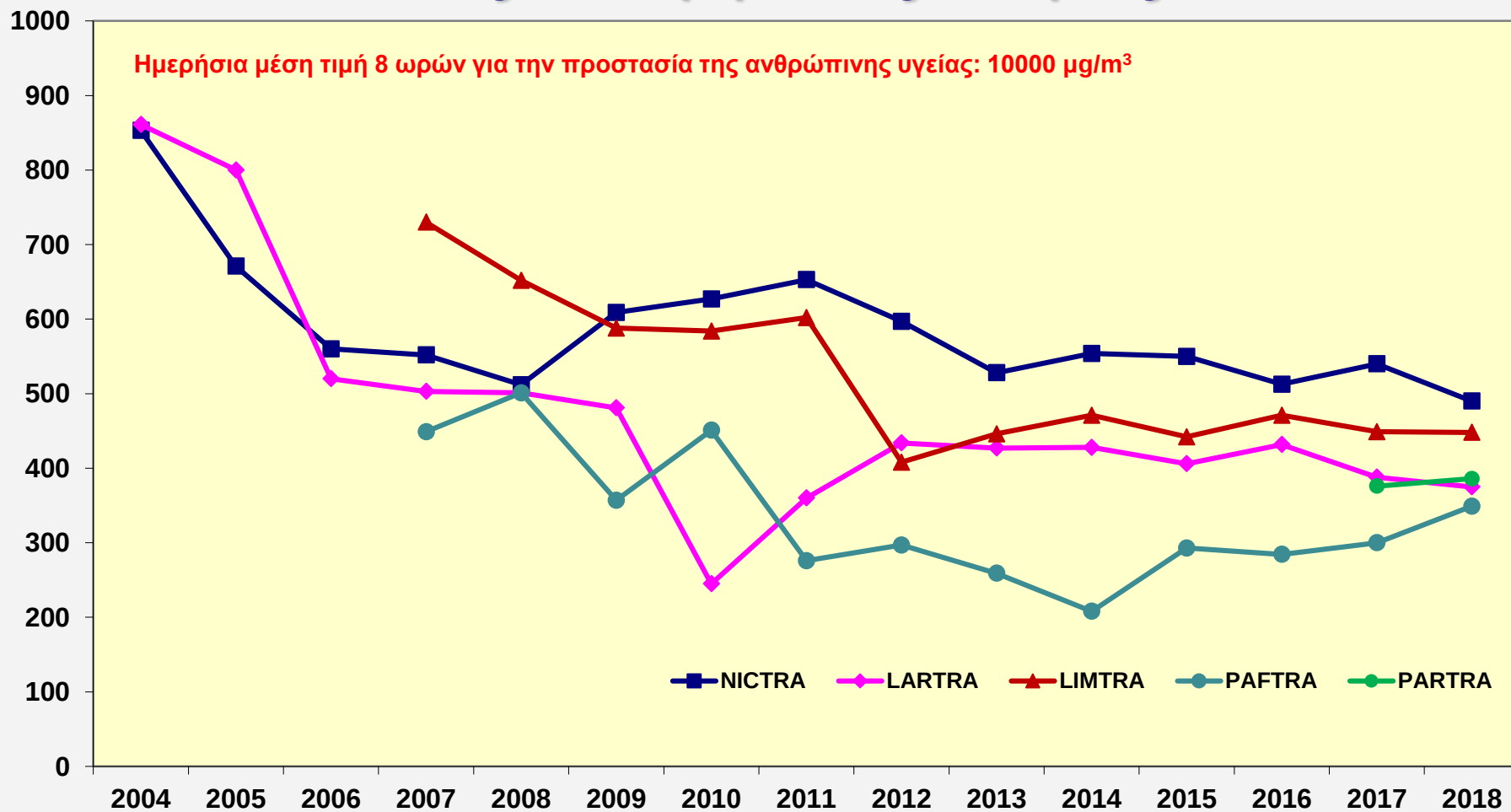
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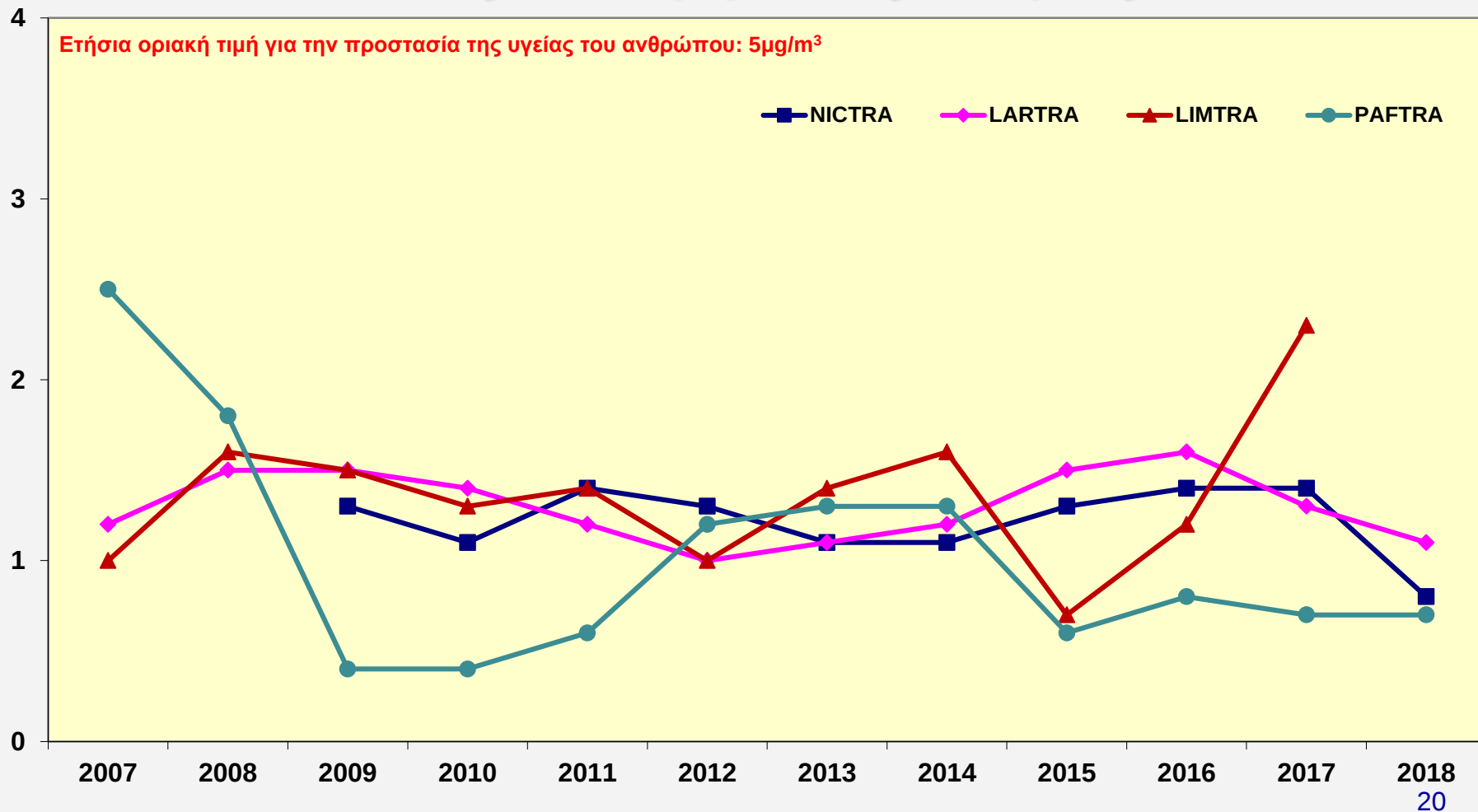
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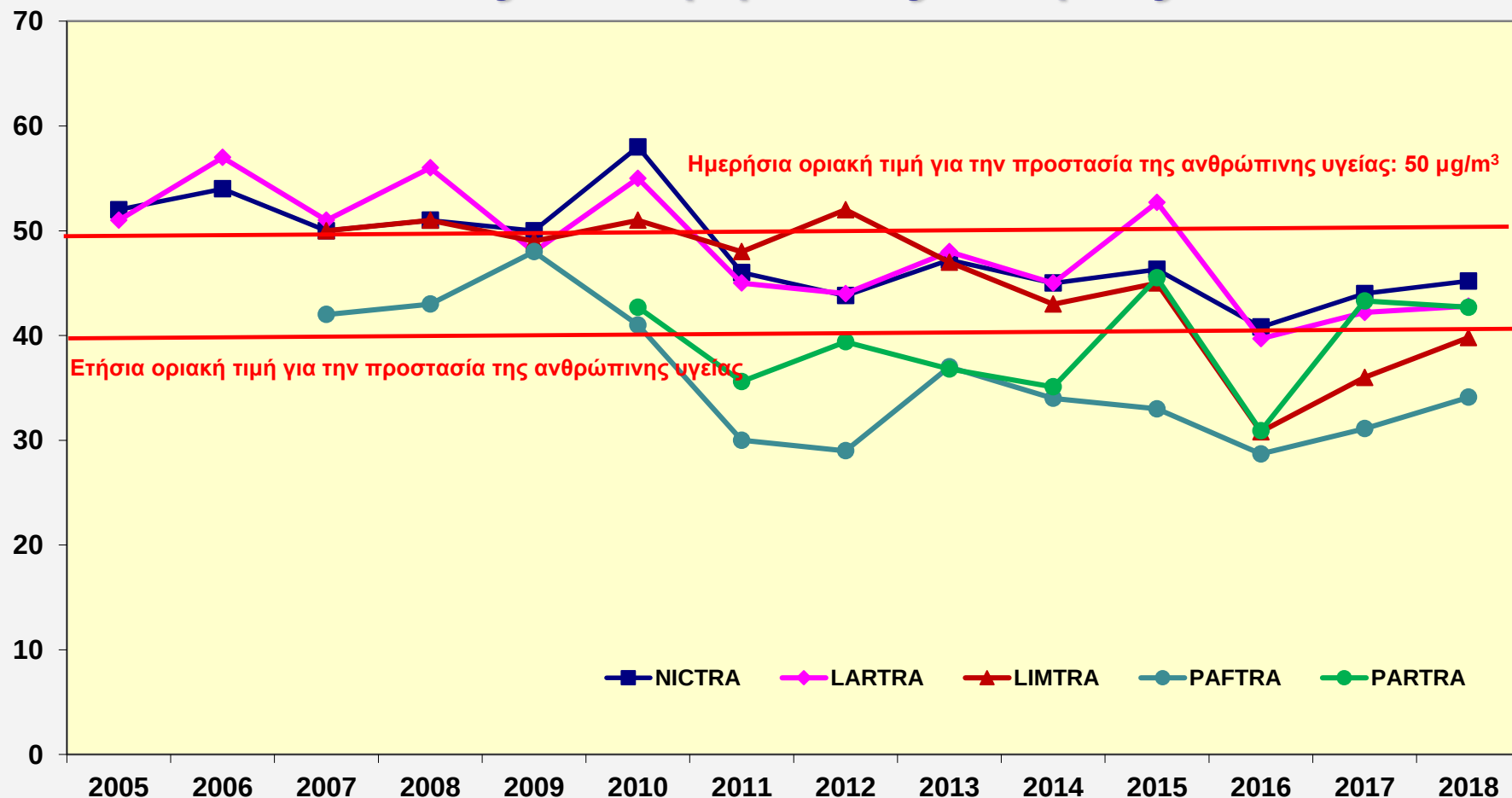
Ετήσιες μέσες τιμές συγκέντρωσης ($\mu\text{g}/\text{m}^3$) CO στους κυκλοφοριακούς σταθμούς



Ετήσιες τιμές συγκέντρωσης ($\mu\text{g}/\text{m}^3$) C_6H_6 στους Κυκλοφοριακούς Σταθμούς

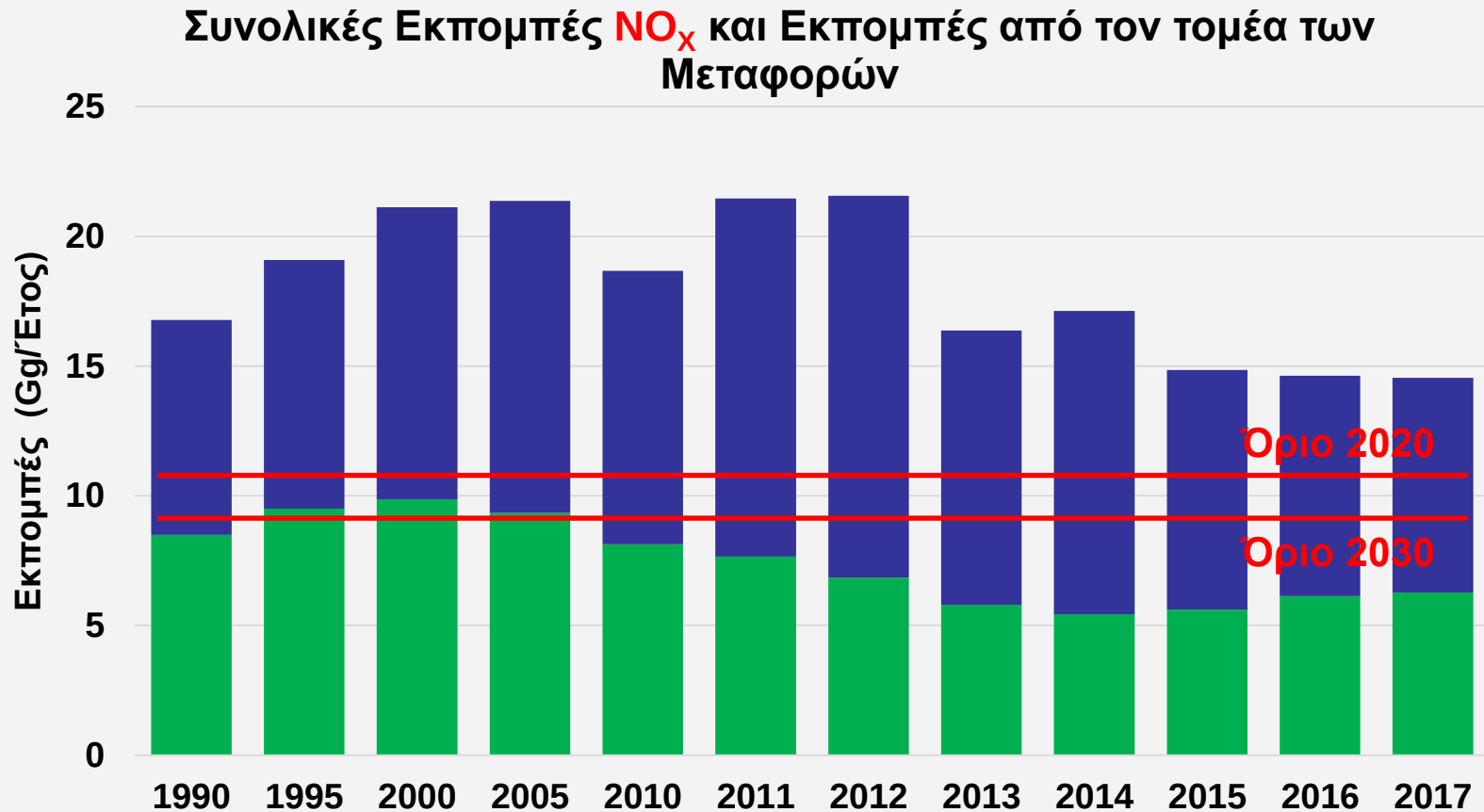


Ετήσιες μέσες τιμές συγκέντρωσης ($\mu\text{g}/\text{m}^3$) AS_{10} στους κυκλοφοριακούς σταθμούς

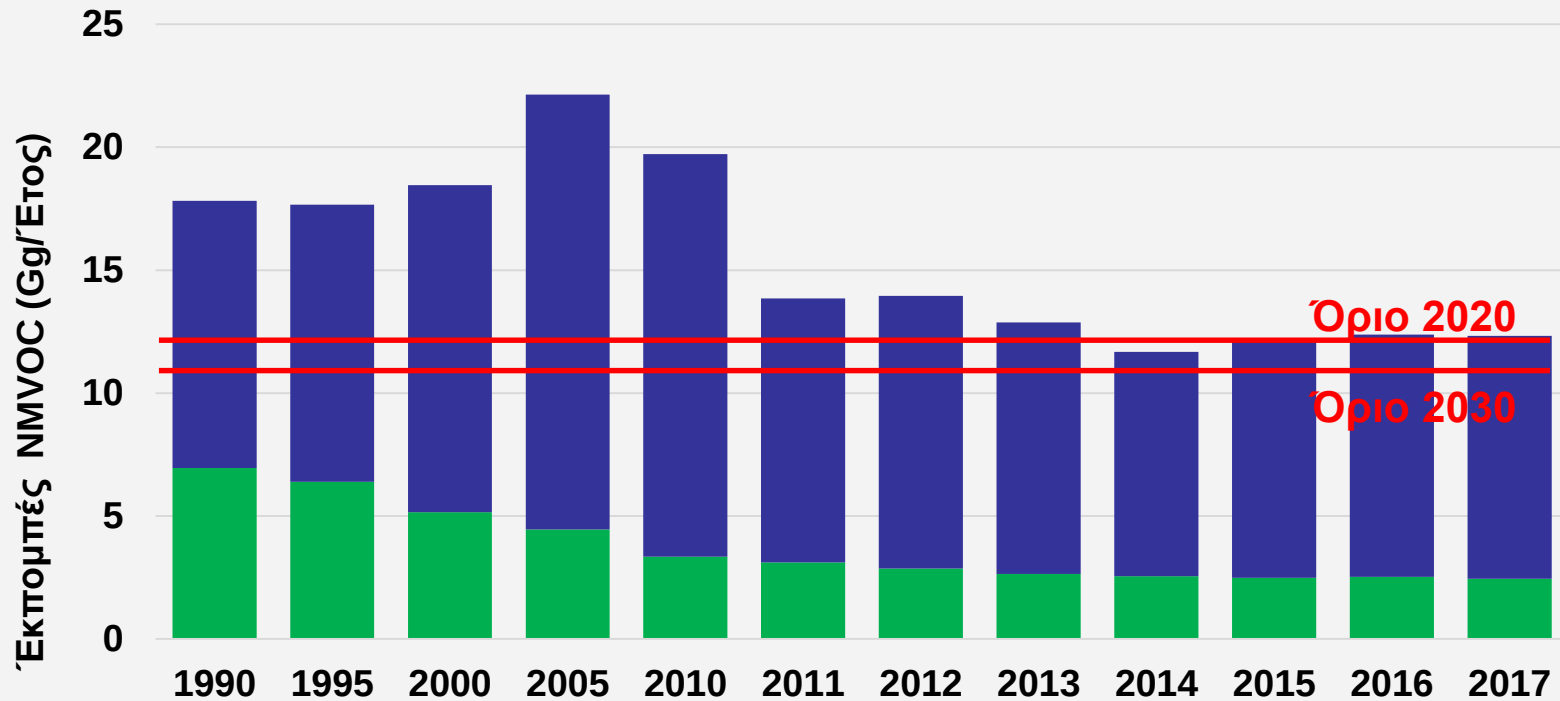


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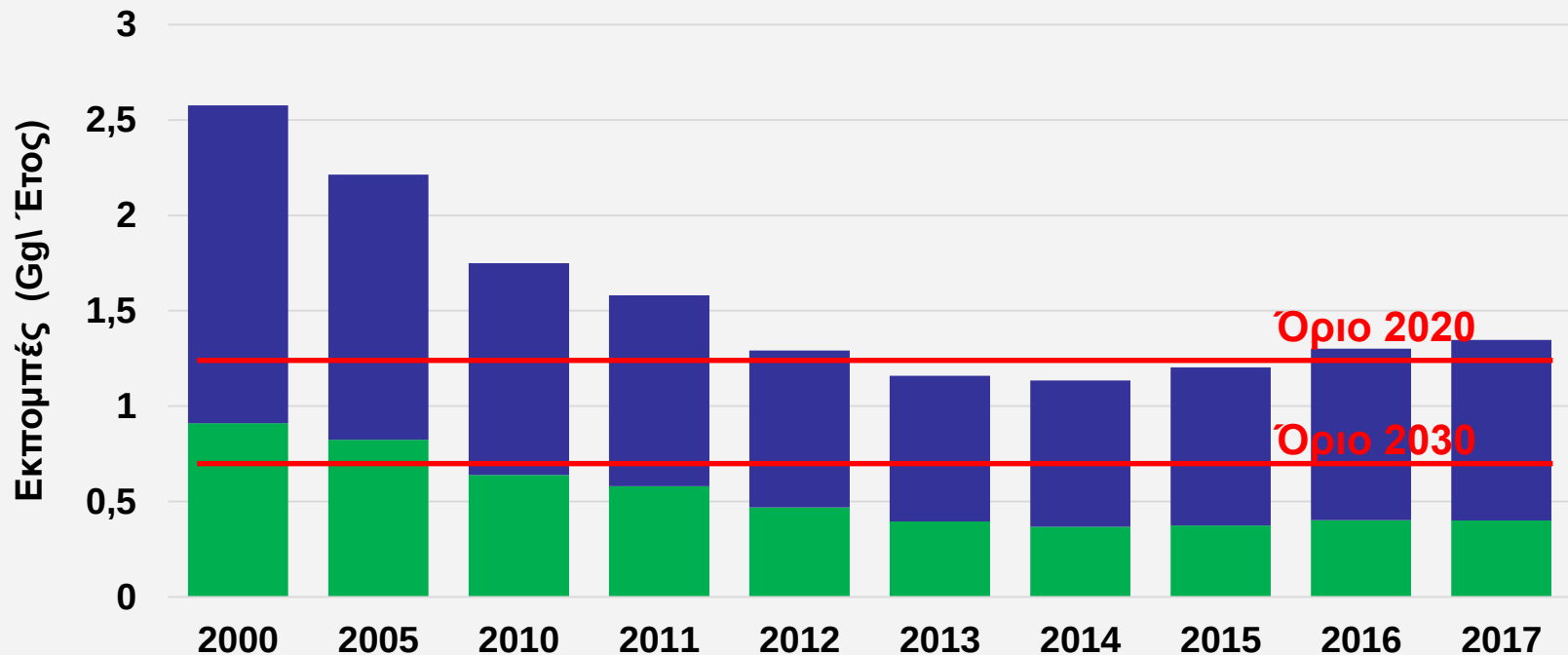
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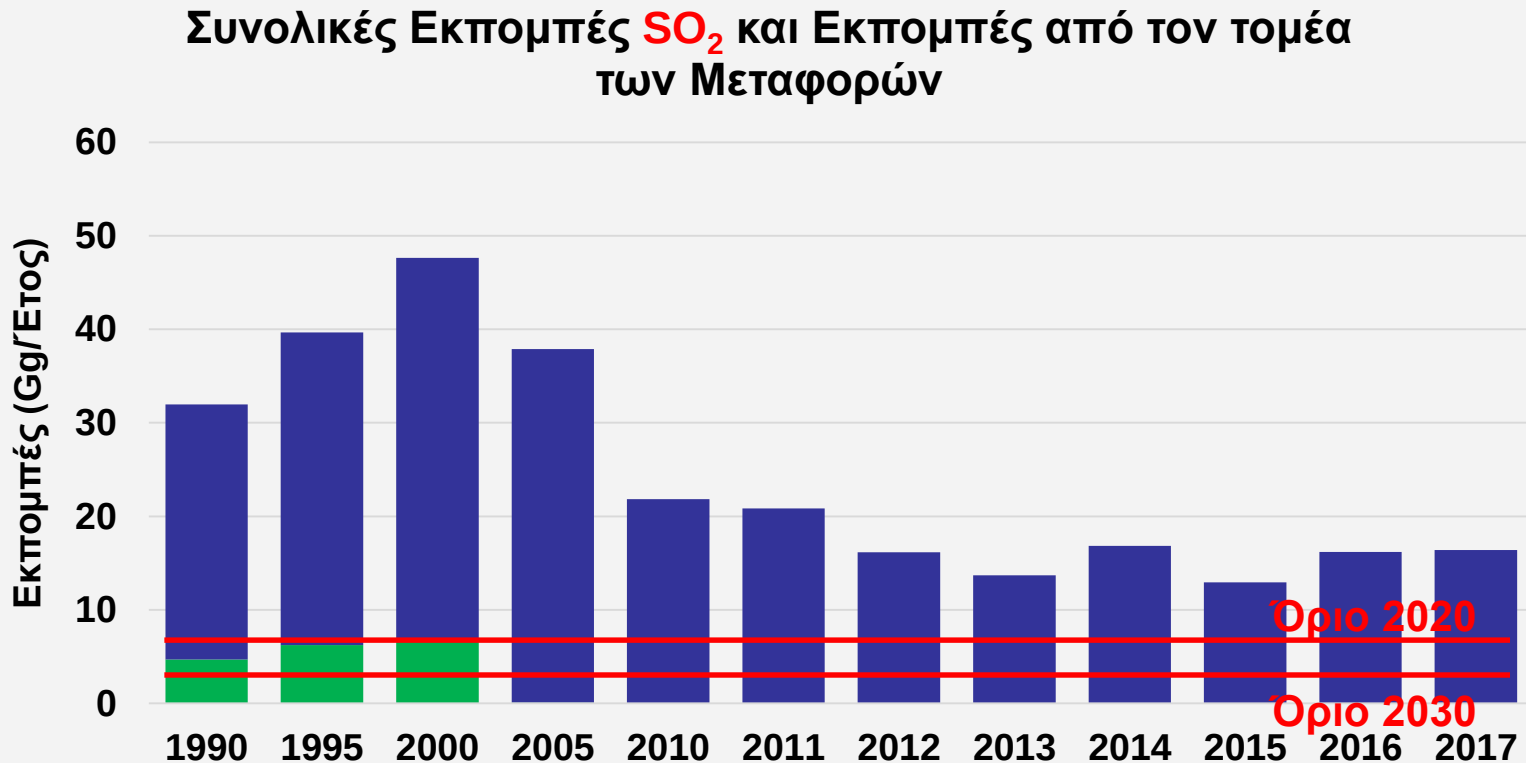


Συνολικές Εκπομπές **NMVO**C και Εκπομπές από τον τομέα των Μεταφορών



Συνολικές Εκπομπές $PM_{2,5}$ και Εκπομπές από τον τομέα των Μεταφορών







Ευχαριστώ για την προσοχή σας