



populair

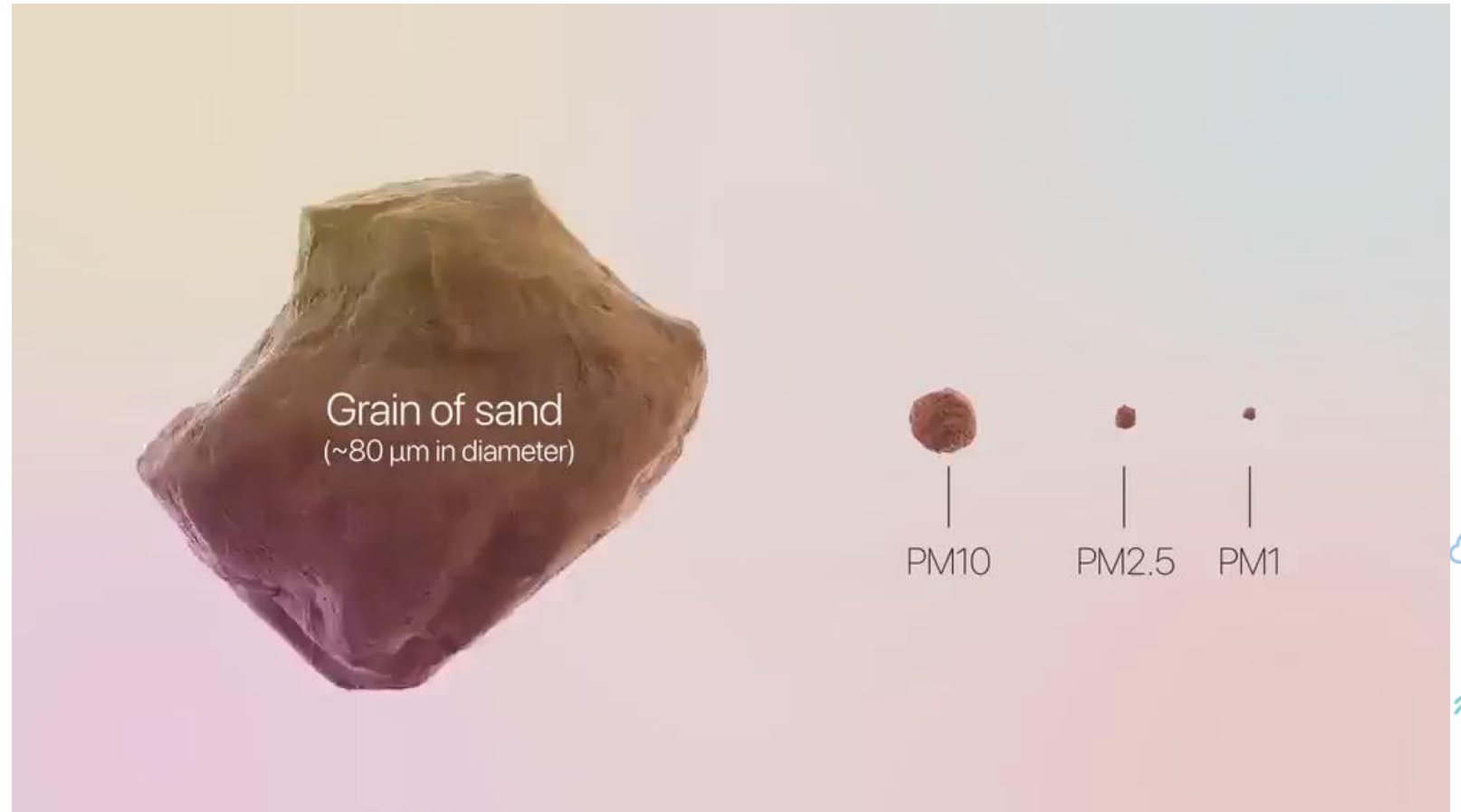
What's the (particulate) matter?

The Who, What, When, Where and How of Particulate Matter (PM)

WHAT ARE PM?

What are PM ?

- PM₁₀
- PM_{2.5}
- PM₁



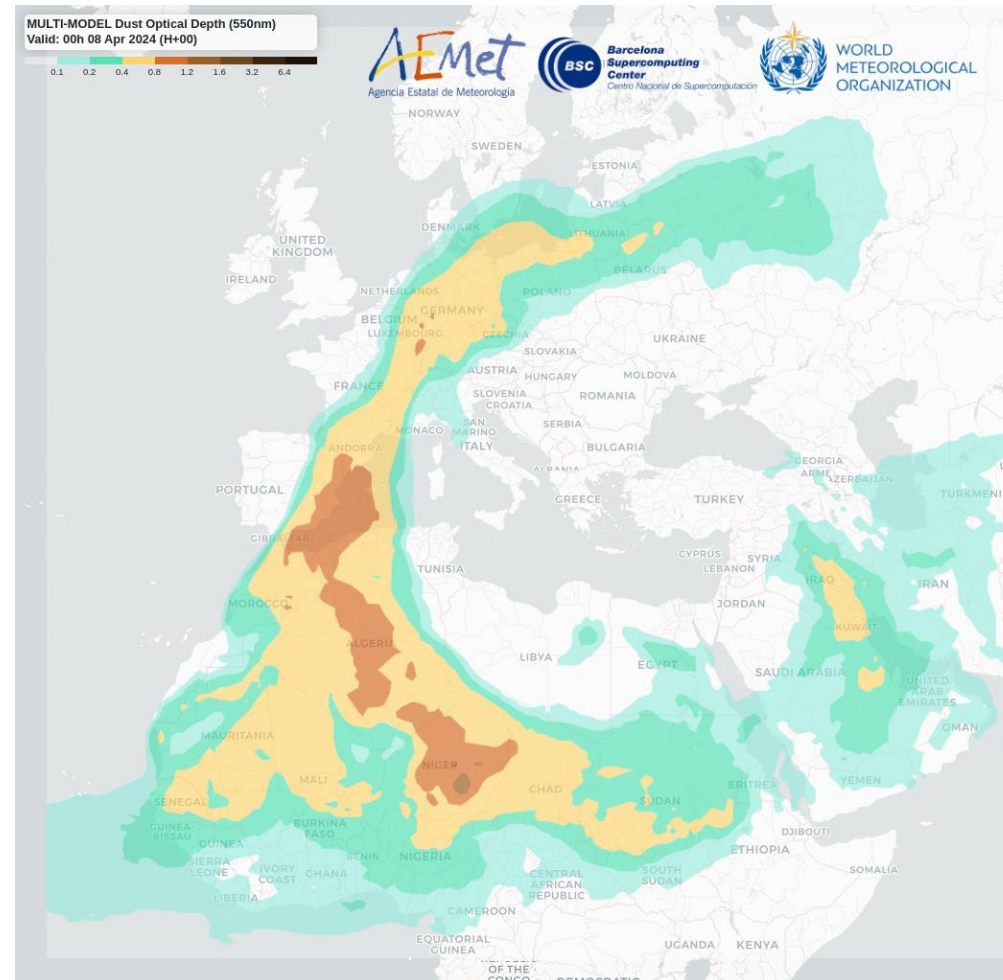
Source: <https://atmotube.com/atmotube-pro>

Where do the PM come from?

- Natural



- Manmade (Anthropogenic)



Source : Barcelona Dust Regional Centre (WMO).
Optical Depth 550nm 08 Apr 2024 + 3 days

A young boy with dark, wavy hair is shown from the chest up. He is wearing a blue backpack over a grey and blue patterned shirt. He is looking down and to the right, with his right hand near his mouth, appearing to be in deep thought or listening intently. The background is a blurred outdoor setting with wooden structures and a sandy area.

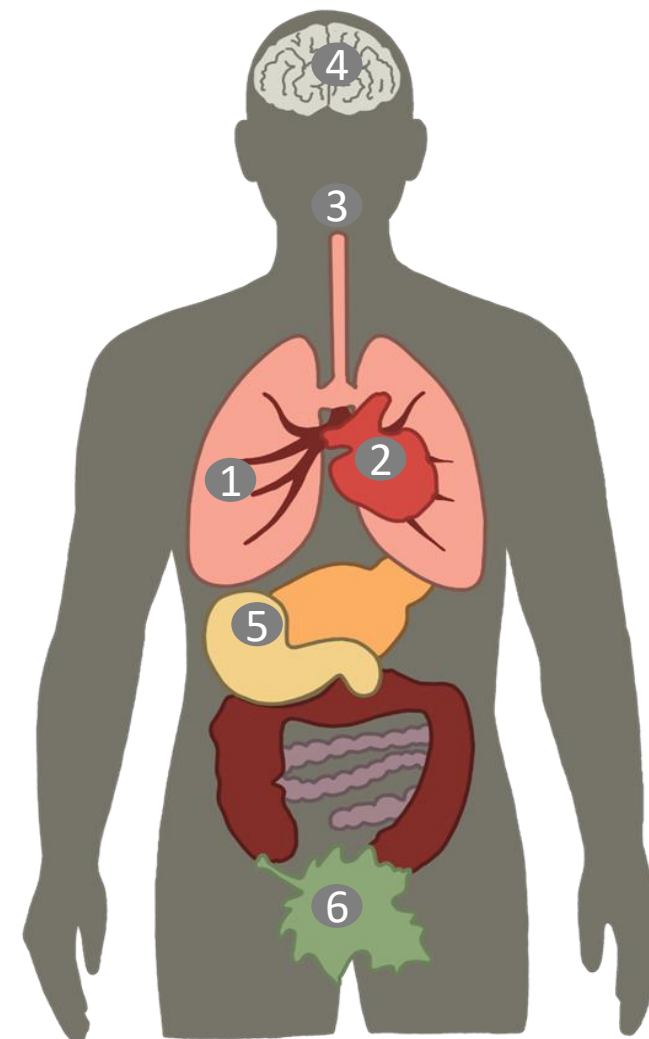
WHY MEASURE PM?

Why do we measure PM?

- They cause harm
- Most vulnerable are children, older people and those with pre-existing health conditions
- $\geq 83\%$ of urban citizens in the EU are exposed above safe levels for all pollutants*
- $\geq 1,200$ deaths in people under 18 years of age are estimated to be caused by air pollution every year in EEA countries**

*except SO_2 , according to 2021 WHO air quality guideline values, Source : [EEA](#)

** Source: [Air pollution and children's health](#)

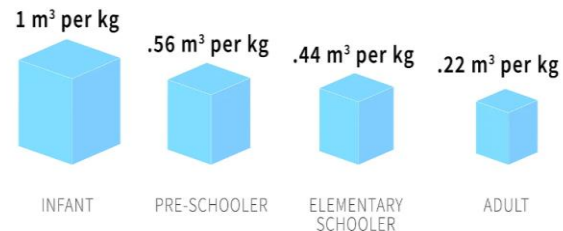


Why do we measure PM?

- Children breathe at lower level of breathing zone
- Their respiratory system is still evolving
- Children breathe more air per kg of their weight

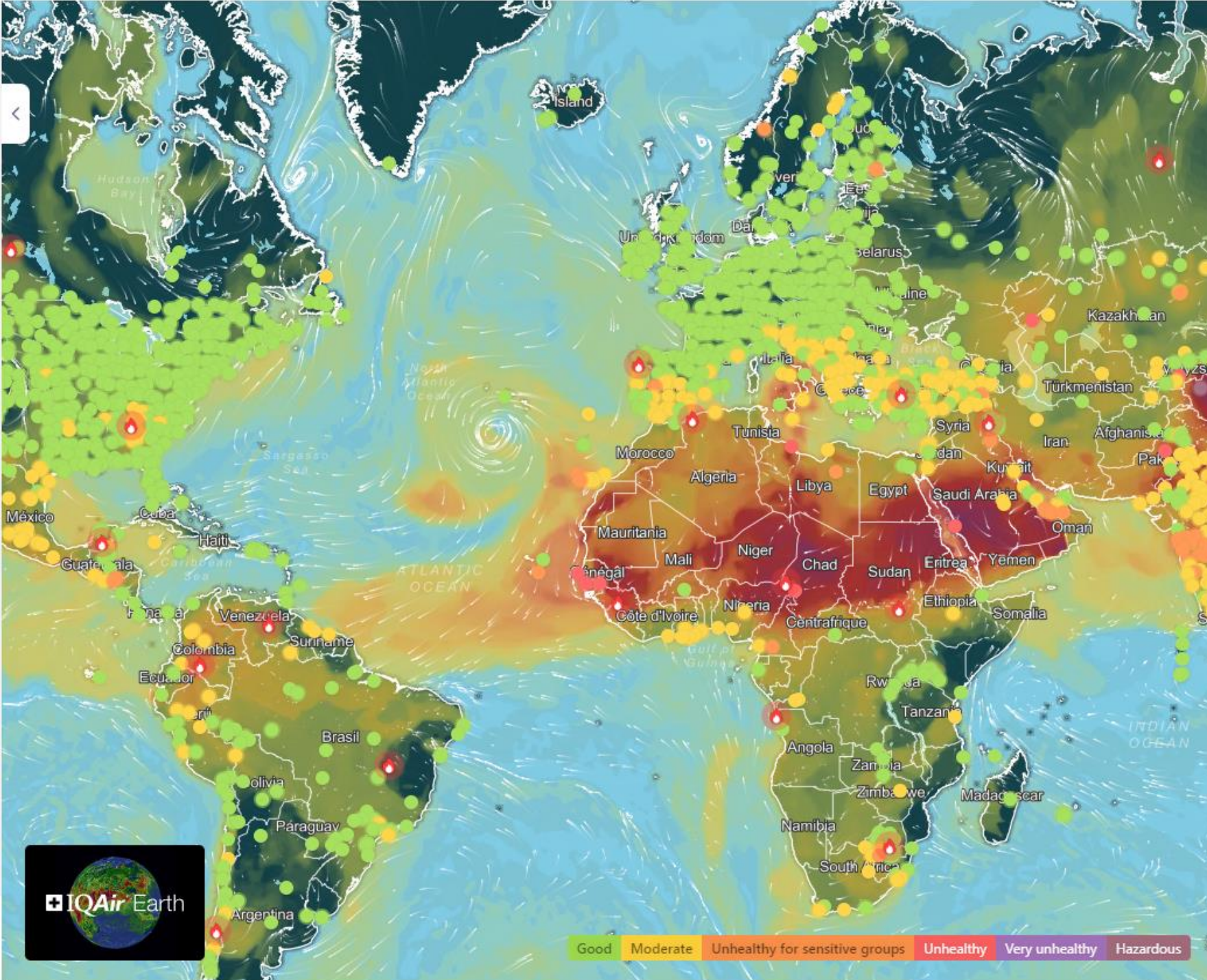


Average daily air inhalation per kilogram, by age



Source: EPA Exposure Factors Handbook, author calculations

THE WHY AXIS

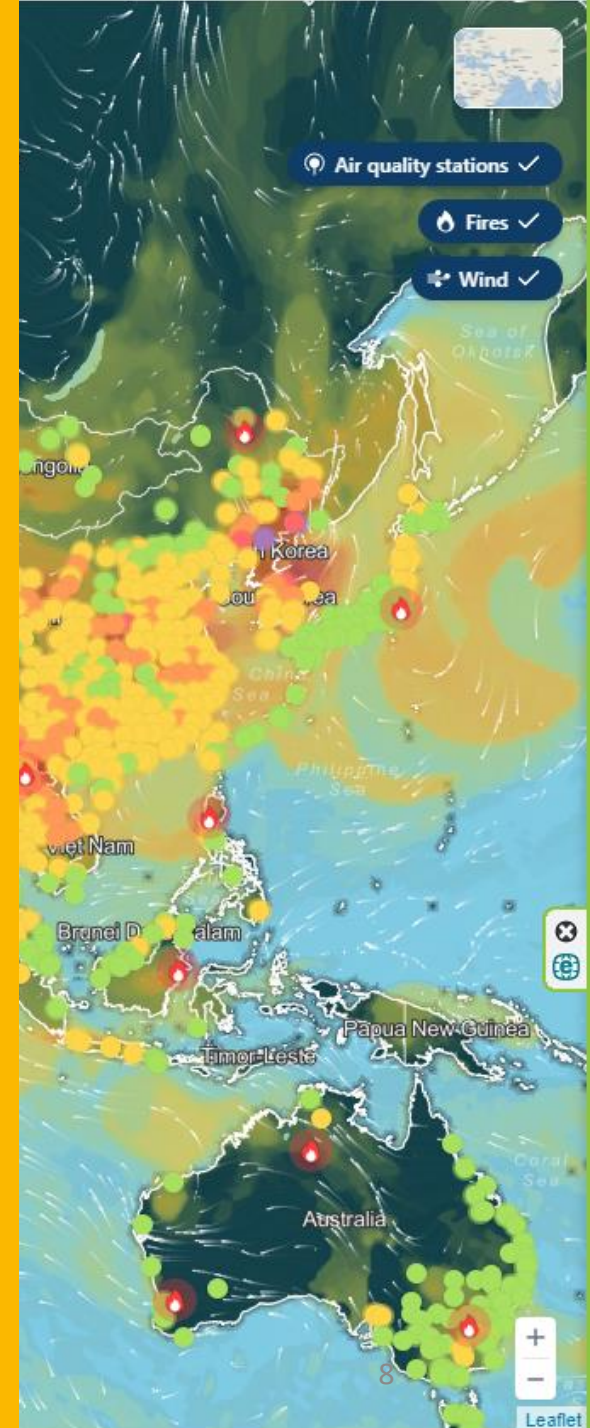


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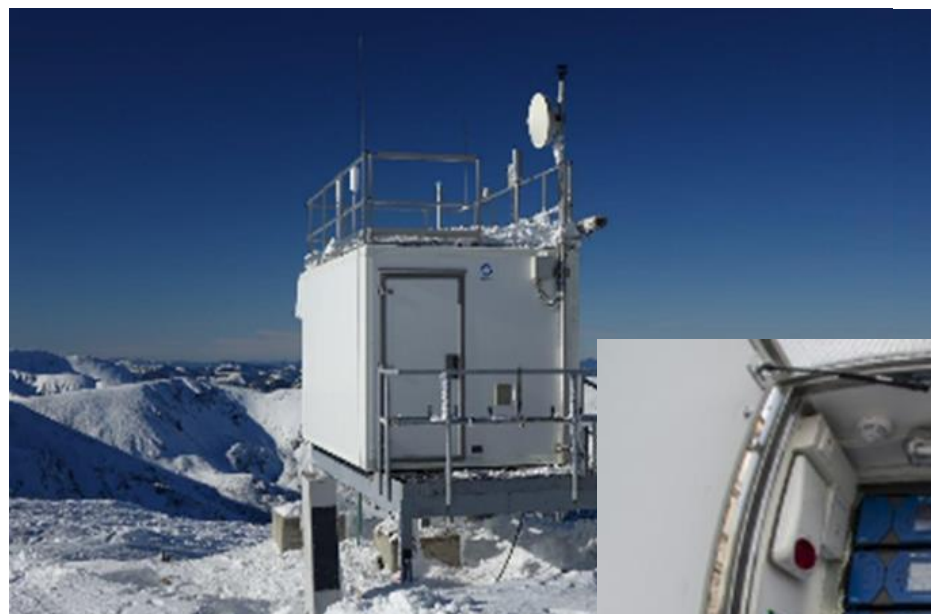
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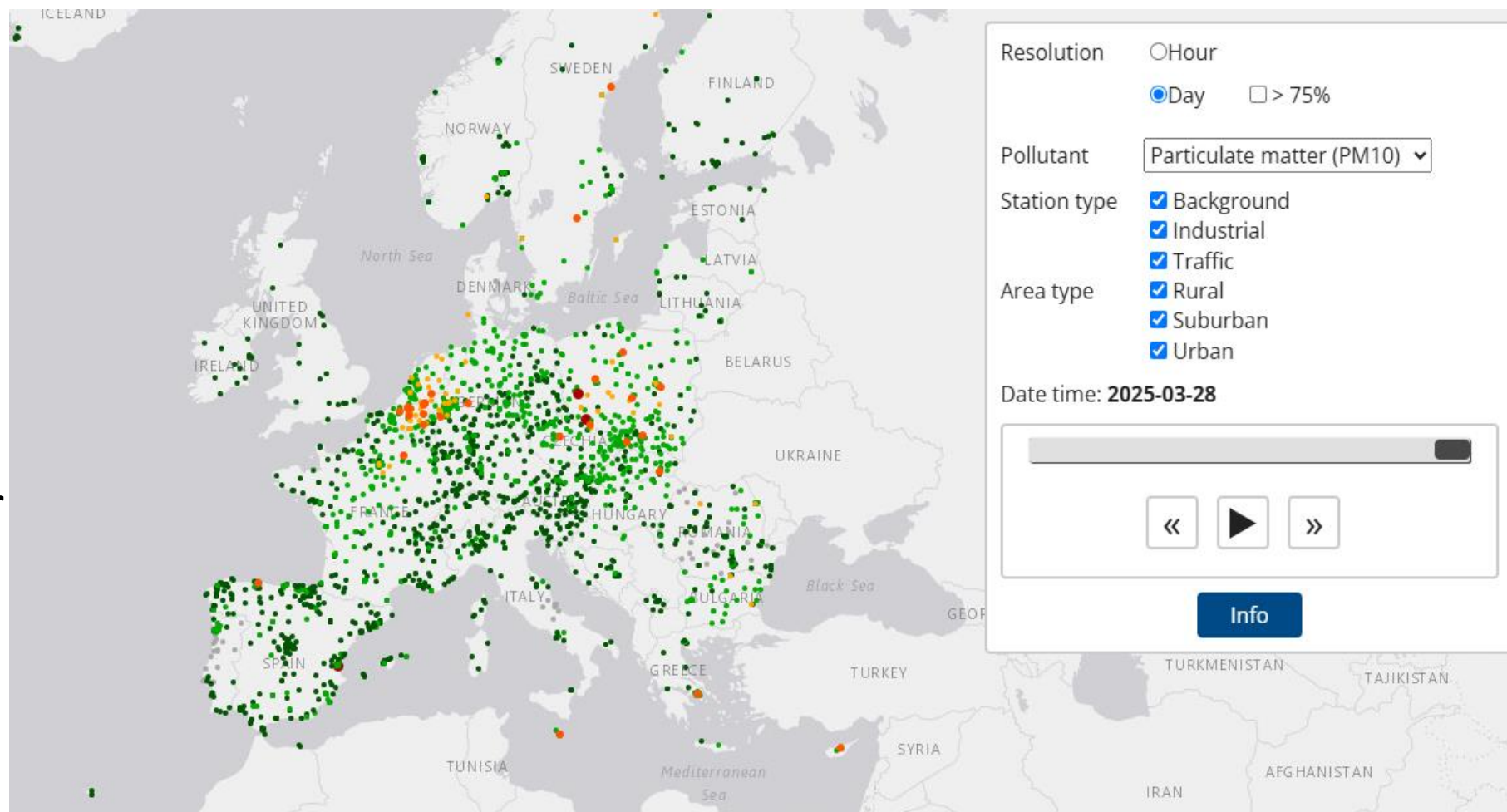
How do we measure PM ?

- Automatic monitoring stations
- Certified reference grade equipment



How do we measure PM ?

- ≥ 4000 AQ monitoring stations
- Station type
- Area type
- Monitoring program (other pollutants)



Source: <https://www.eea.europa.eu/en/analysis/maps-and-charts/up-to-date-air-quality-data>



WHAT NOW?



What can be done with the results?

- Areas with poor air quality can be identified
- Specific measures to be adopted in order to safeguard adequate air quality standards
- New stringed legislation*
- New daily LV for $PM_{2,5}$...25 $\mu g/m^3$ (max 18 times p.a.)
- New yearly LV for $PM_{2,5}$ 20 \rightarrow 10 $\mu g/m^3$
- New daily LV for PM_{10} ...45 $\mu g/m^3$ (max 18 times p.a.)
- Annual PM_{10} LV 40 \rightarrow 20 $\mu g/m^3$

*Valid from 01.01.2030



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Thank you for your attention
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