

The Po Valley experience

*Achieving compliance with air quality standards
as soon as possible*

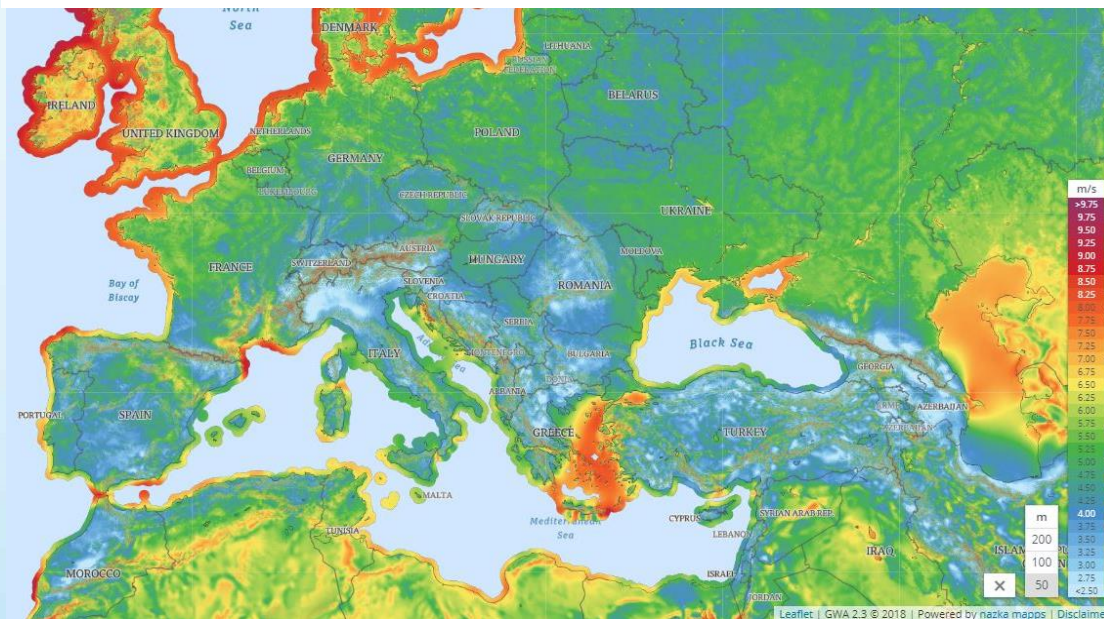
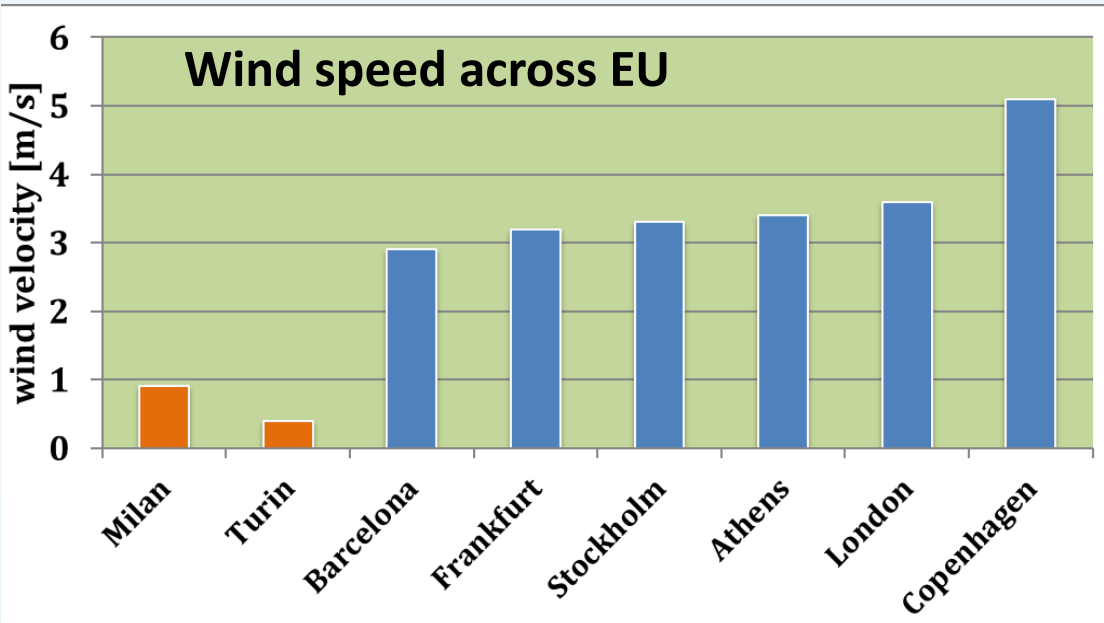
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ARSO ENVIRONMENT
Slovenian Environment Agency



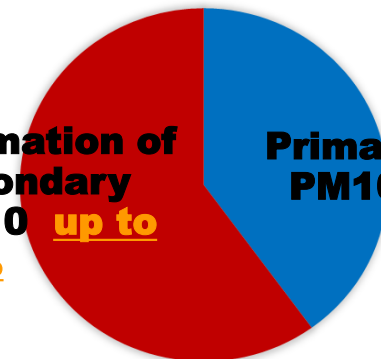


In the Po Valley exceptional meteorological conditions occur due to the particular topography: the average **wind speed** and consequently the Thermal Inversion Height that makes **unfavorable** the conditions of **pollutants dispersion**, compared to the rest of Europe. No geographical area in Europe has such a wide extension with these characteristics



**Formation of
secondary
PM10 up to
70%**

**Primary
PM10**



Actions in the Po valley

continuity of actions in a large-scale territory

Regional actions

Plans and laws

PRQA 2005, law 24/06, MSQA 2007, PRIA 2013 and 2018 (Lombardy) - PAIR 2014 and 2017 (Emilia Romagna) - PRQA 2000, 2017, 2019, law 15/18 (Piedmont) - PRTRA 2004 e 2016 (Veneto)

Some emblematic measures

- Authorizations and limits for all kind of plants, also domestic heating, not only large plants (from 1988 to 2009)
- Carbon and oil ban for domestic heating (from 2002)
- Methane distribution network in 98% of territories in some regions
- Large-scale traffic limitation (from 2008)
- Ban for low-efficiency households biomass burning (from 2008)
- Zero emission balance and new limits for biomass combustions in industry (from 2011)

NOTE: many measures for industry are more stringent and done before than national and European provisions, e.g. DPR 59/2013, Dir. 2010/75/ EU (LCP), Dir. 2015/2193 (MCP) and BATconclusion, Decision 2017/1442

Po Valley actions

Agreement 2005, 2007, 2013 and 2017

An example in Europe of a large-scale technical, administrative and political coordination



Po Valley Agreement 2017

Lombardy, Emilia Romagna, Piedmont, Veneto, IT State

Sector	NO _x	NH ₃	PM ₁₀	NMVOC
Energy production and refineries	7 %	0 %	1 %	0 %
Residential combustion	9 %	0 %	55 %	8 %
Industrial combustion	15 %	0 %	3 %	1 %
Production processes	3 %	0 %	3 %	5 %
Extraction and distribution of fuels	0 %	0 %	0 %	3 %
Solvent use	0 %	0 %	1 %	25 %
Road Transport	53 %	2 %	23 %	7 %
Other mobile sources	11 %	0 %	5 %	1 %
Waste treatment and disposal	1 %	1 %	0 %	0 %
Agriculture	1 %	97 %	6 %	18 %
Other sources and sinks	0 %	0 %	2 %	32 %

The most from wood

TRANSPORT

RESTRICTION TO DIESEL VEICHLES CIRCULATION

ENERGY

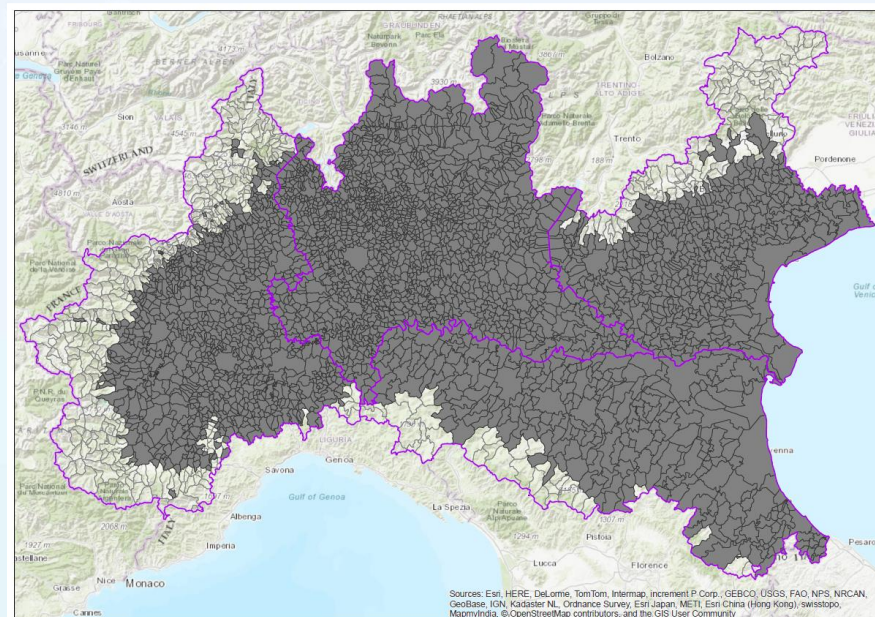
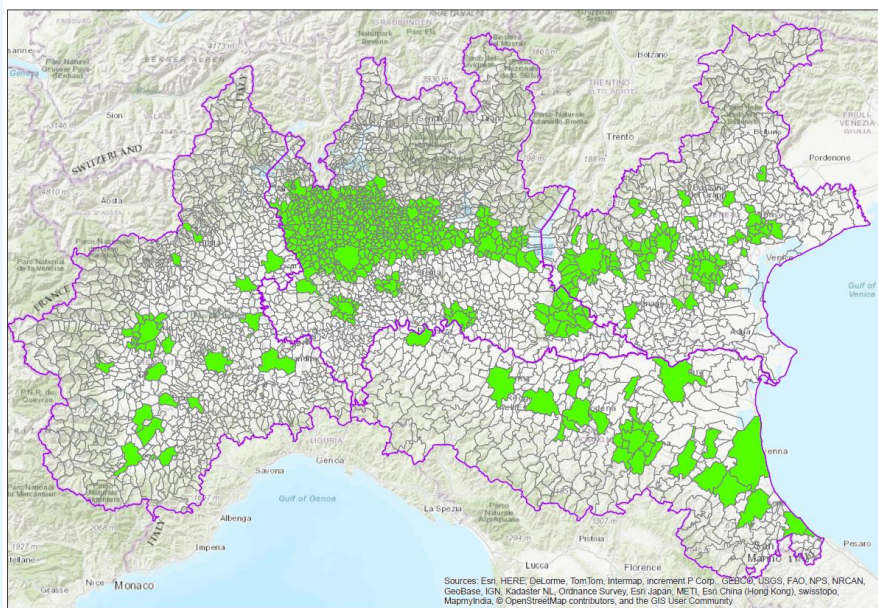
RESTRICTION TO THE USE OF BIOMASS LOCAL SPACE HEATERS

BAN TO THE USE OF BIOMASS FOR ENERGY EFFICIENCY DIRECTIVE PURPOSES

AGRICULTURE

BAN TO THE USE OF PRACTISES WITH HIGH AMMONIA EMISSIONS

Po Valley Agreement 2017



Traffic limitation

2018 → Euro 3

2020 → Euro 4

2025 → Euro 5

Municipalities	712
Inhabitants	13.836.960
Area (km ²)	21.616
Vehicles involved (2018)	1.737.383

Domestic biomass heating:

Ban <"2 stars" from 2018 and "3 stars" from 2020

Only installation of generators of class > "3 stars" from 2018 and "4 stars" by the end of 2019

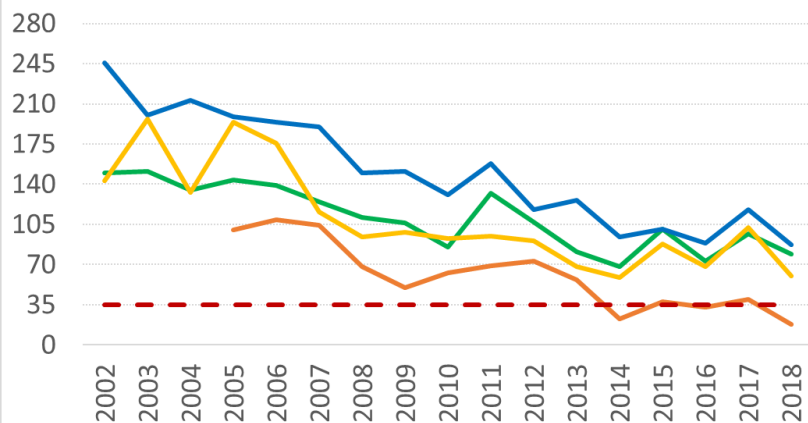
Regional Funds for Air Quality

FUNDS FOR AIR QUALITY 2005-2020 (millions of €)

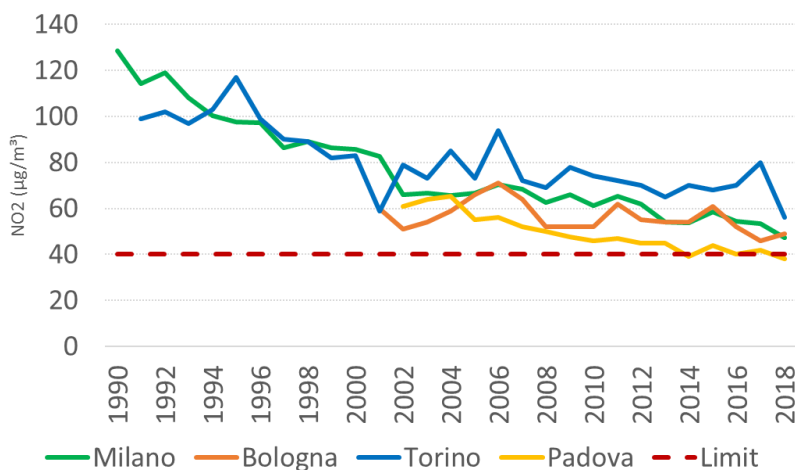
<i>Sector</i>	Emilia-Romagna	Lombardia	Piemonte	Veneto	4 Regions
TRANSPORT	1 810	7 822	3 625	256	13 513
ENERGY + INDUSTRY	451	482	293	508	1 734
AGRICULTURE	156	112	36	98	403
TOTAL	2 417	8 416	3 955	862	15 651

Emissions Concentrations trends

PM10: Number of daily exceedances



NO2: annual mean



PM10 reduction (µg/m³/y)

Annual mean
90.4 percentile

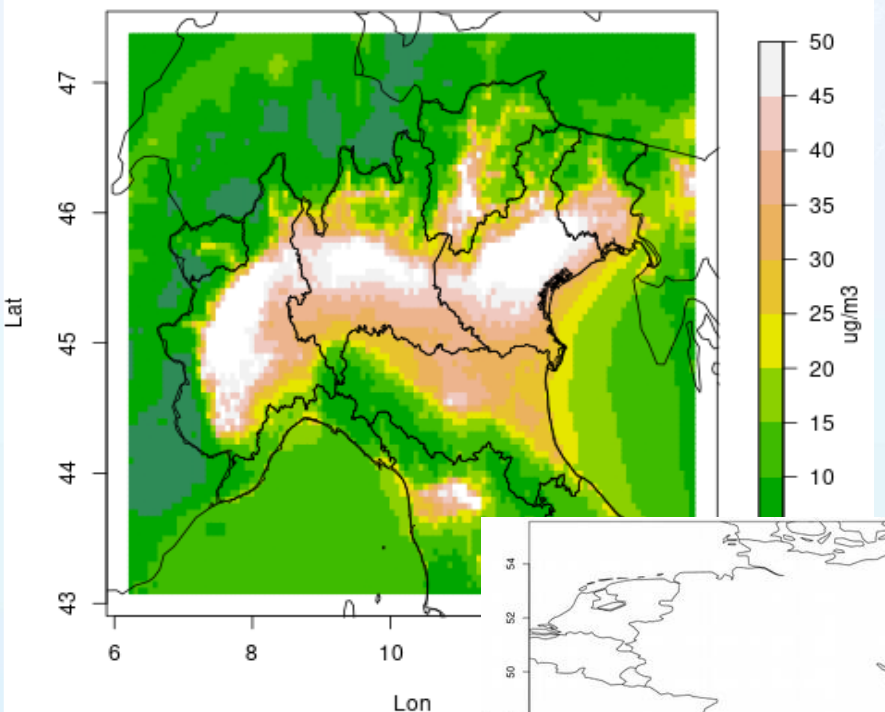
	Milano	Bologna	Torino	Padova	EU-28
Annual mean	-1.5	-1.4	-2.0	n.a.	-0.6/-0.9
90.4 percentile	-2.6	-2.4	-3.3	-2.9	-0.9/-1.4

“ On average, urban background stations registered decreases of – 0.6 and – 0.9 µg/m³/year, respectively, in annual mean and 90.4 percentile values of PM10, whereas for urban traffic sites the average changes reached –0.9 and –1.4 µg/m³/year. The decrease in PM10 concentrations was particularly marked in Italy, Portugal and Spain.”

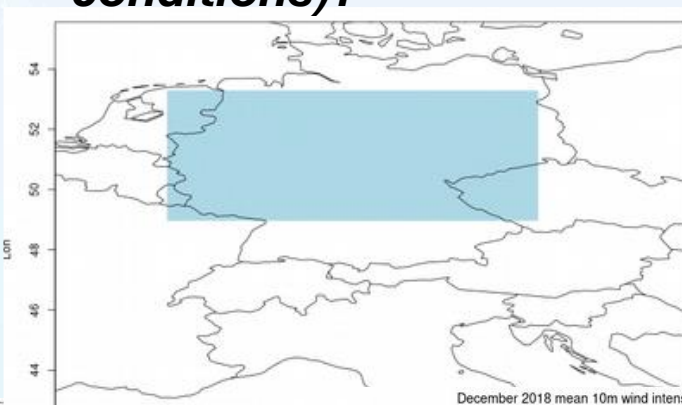
EEA Air Quality Report n. 28/2016

As soon as possible?

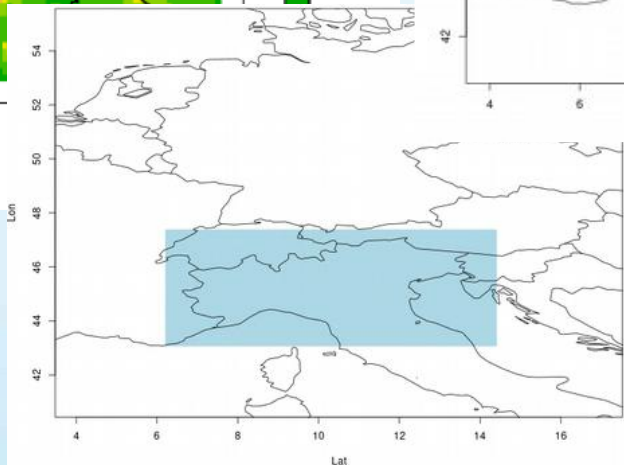
Mean december 2018 Pm10 concentration (ug/m3)



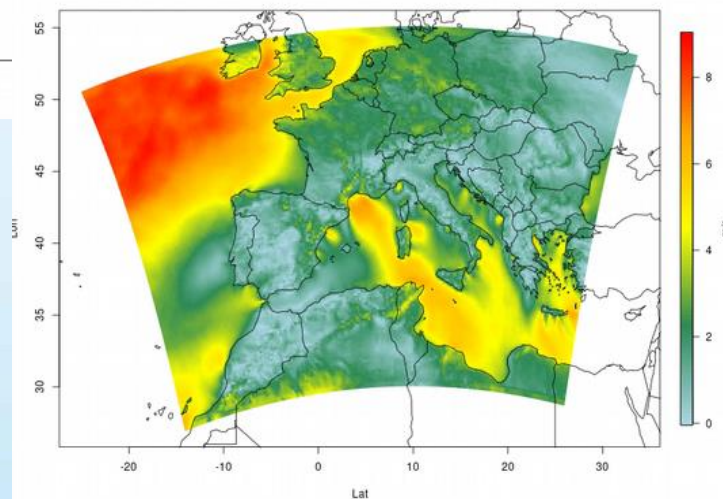
What if Po Valley were in Central Europe (with those meteorological conditions)?



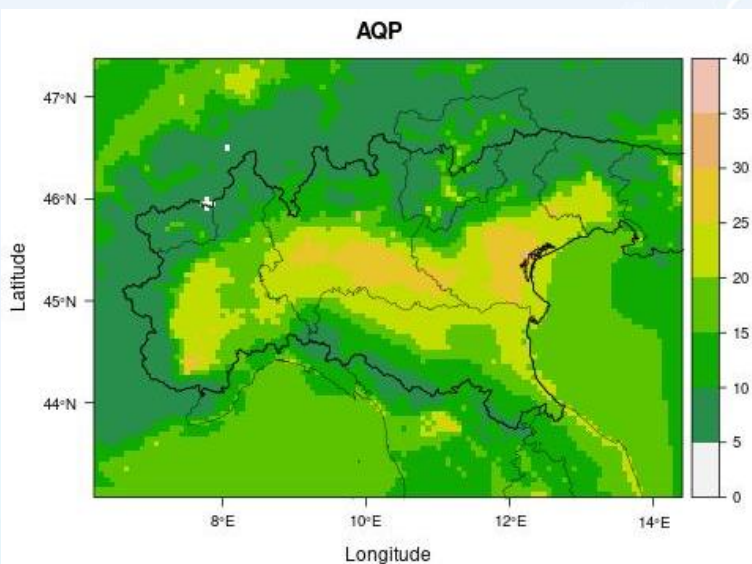
December 2018 mean 10m wind intensity ((m/s))



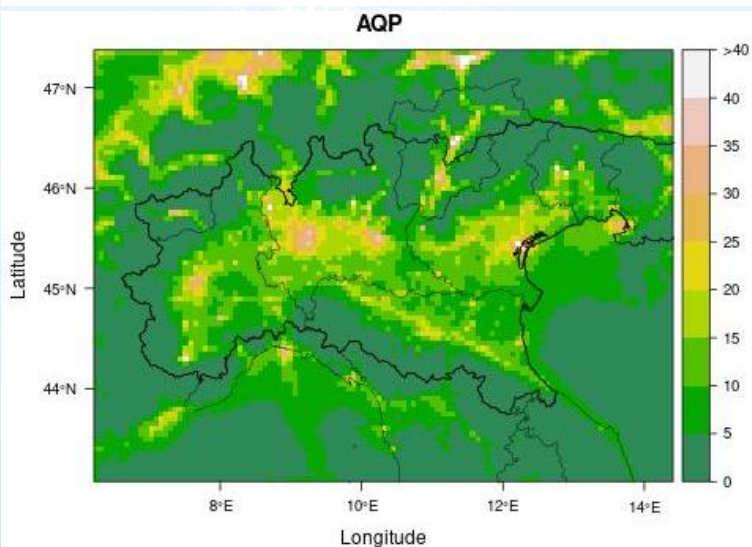
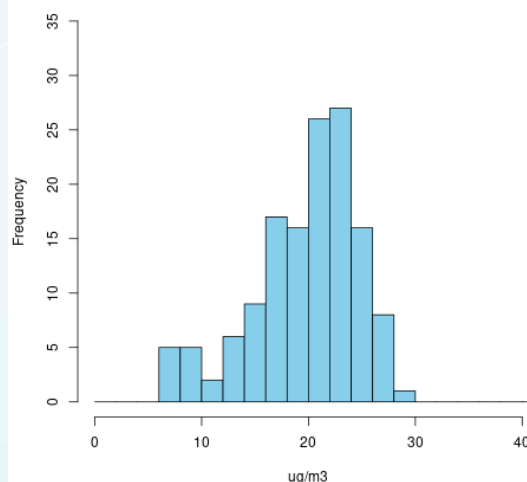
The pollution levels are about:
PM10: 50-70%
NO2: 40-60%



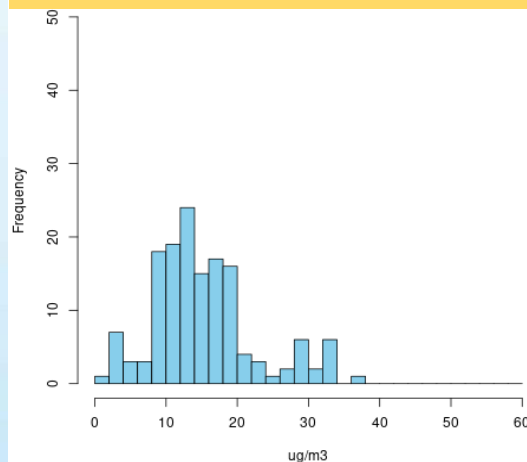
Compliance with **PM10** and **NO2** standards



PM10 Annual mean



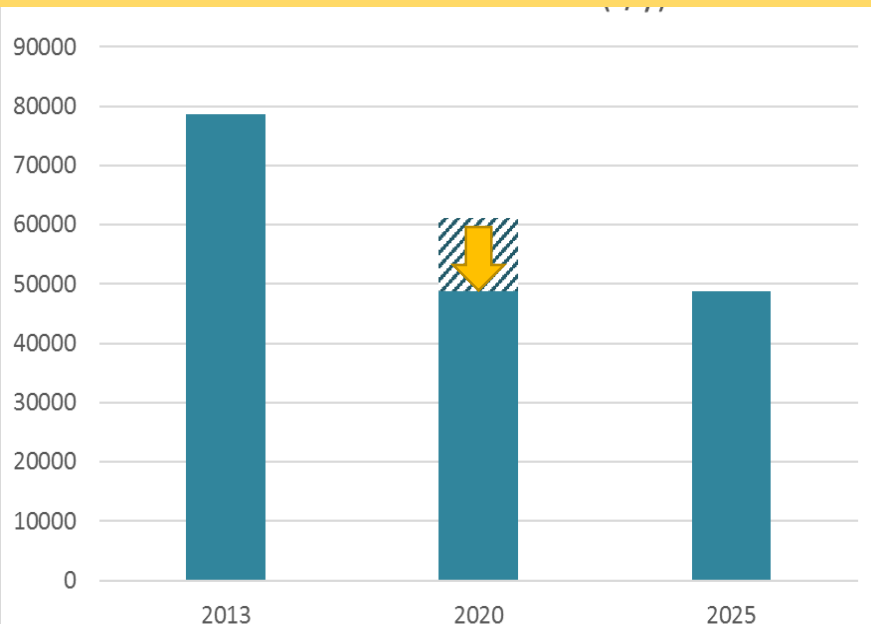
NO2 Annual mean



**Integrated Project
LIFE PrepAIR
involves a
substantial
achievement of air
quality limits within
2025 for Po Valley
Scenarios of the
Regional plans
state the
compliance with air
quality standards
for each region**

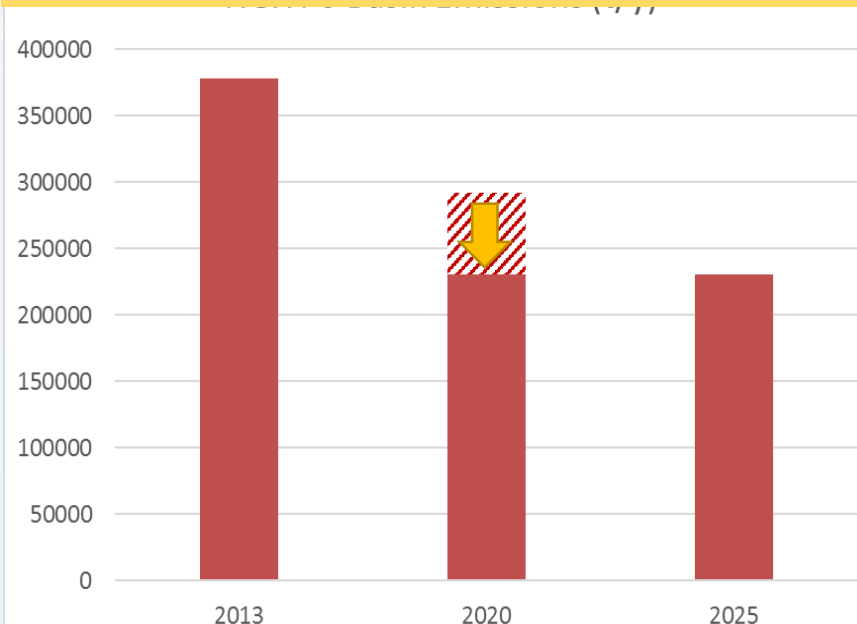
As soon as possible

PM10 PO Basin Emissions (t/Y)



/// CLE2025 + Po Basin Plans

NO2 PO Basin Emissions (t/Y)



/// CLE2025 + Po Basin Plans

***Faster
?***

- Immediate application of all measures of the air quality plans
- Total ban of vehicle circulation for 14 million people to compensate the reduction expected with the application of European and national legislation (Current LEgislation CLE) by 2025

How could the EU help?

- **European Structural Funds** strongly directed to air quality objectives
- Redistribution of the EU **resources for specific areas**, reflecting, in a proportional way, the actual costs of rehabilitation
- More **integration** and coordination between sectorial **policies** to reduce emissions at source (climate change, agriculture, energy ...)
- Setting up a scheme of **incremental periodic targets** of reductions for pollutants
- Evaluating the «**soon as possible time**» in consideration to the relevance of the emissions reduction already obtained and to what is necessary for the compliance
- **Revision and integration of the Nitrates Directive** in coherence with **the Air Quality Directive** and valorization of **zootechnical waste as a resource**
- The new Air Quality Directive should consider the social and economic impacts providing a new air quality **assessment study**
- Review and anticipation of **Ecodesign** Directive limits for domestic biomass plants
- Reduction of NOX emissions of circulating diesel vehicles up to Euro6 (e.g. promoting the use of SCR **filter** Selective Catalyst Reduction)