

Italian regional laws on light pollution

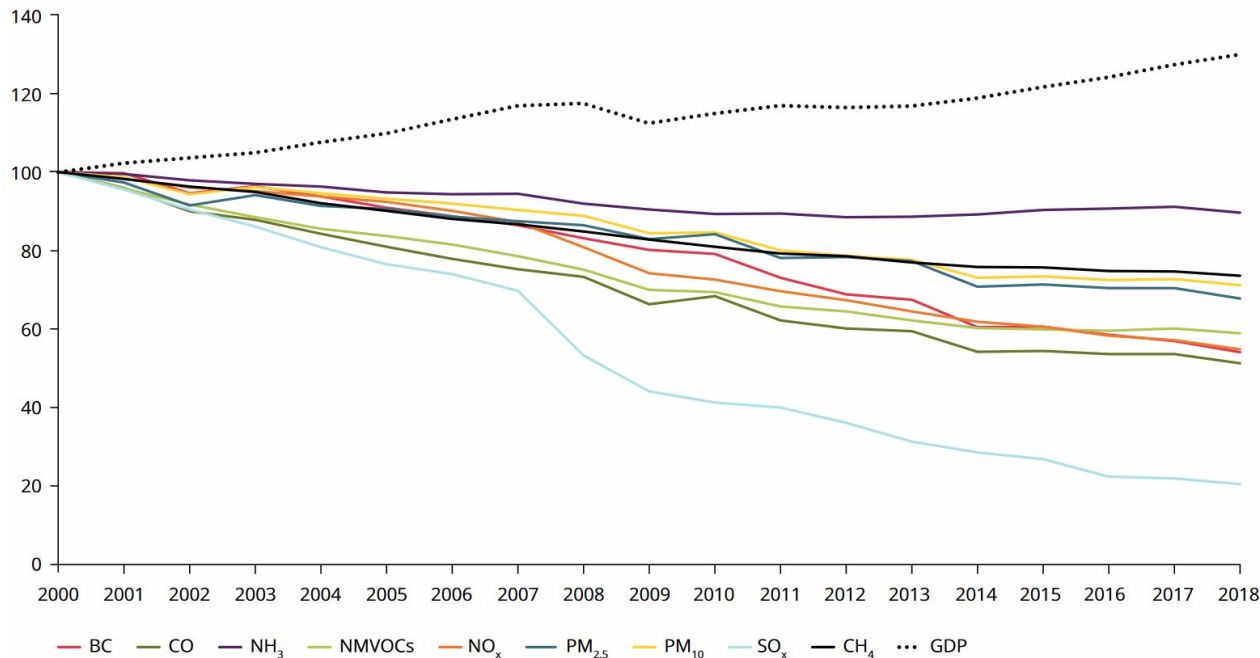
Necessary, but not sufficient!

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What happens to air pollutants?

Index (% of 2000)

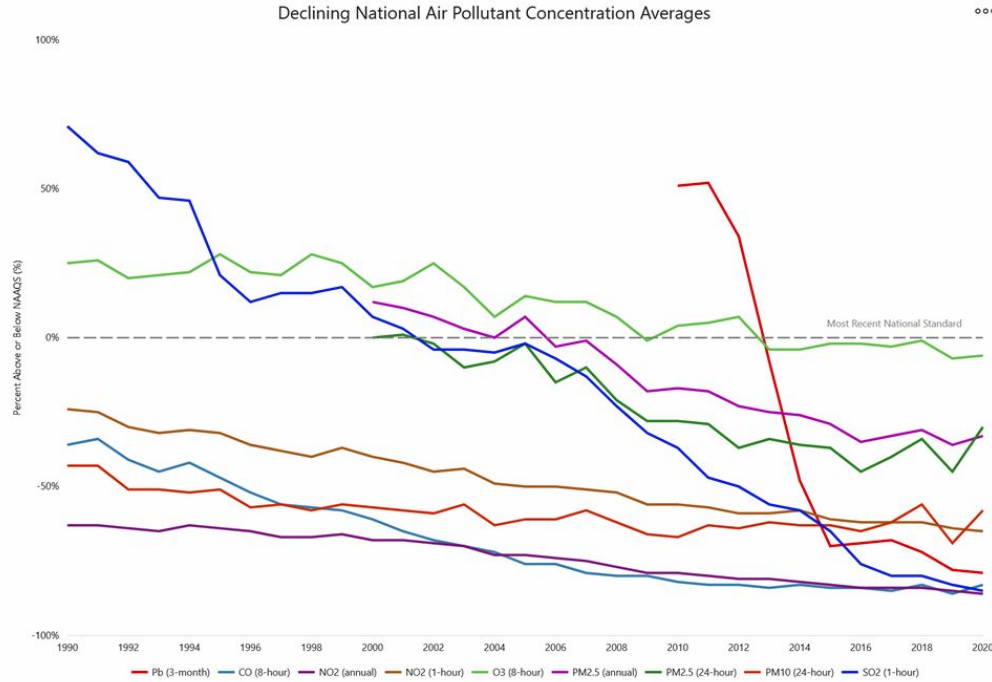


European Environment Agency



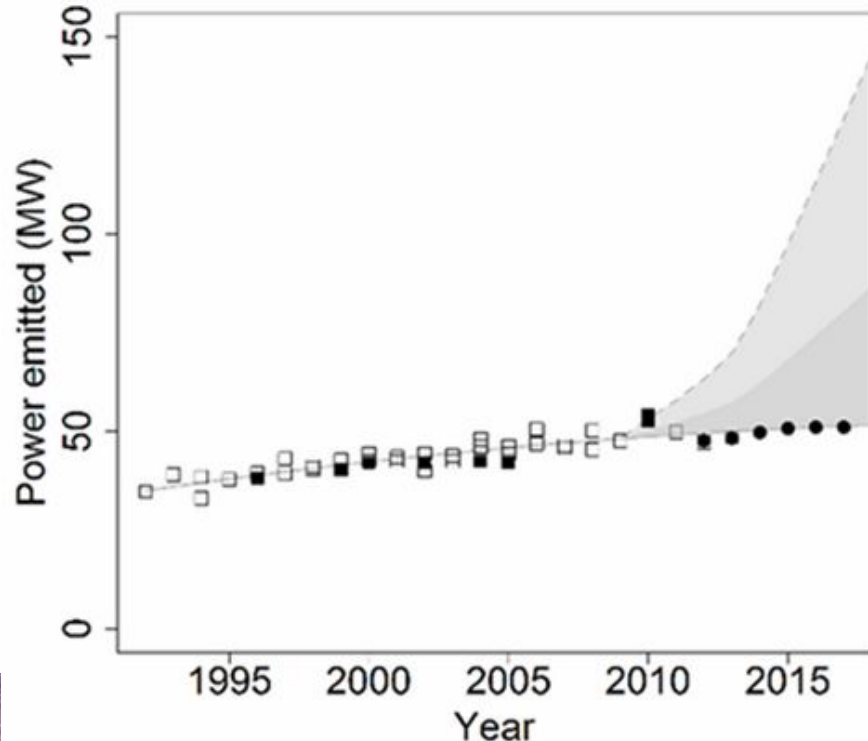
<https://www.eea.europa.eu/publications/air-quality-in-europe-2020-report>

What happens to air pollutants?



<https://gispub.epa.gov/air/trendsreport/2021/#introduction>

What happens to light pollution, instead?



Increase due to:

- Installed power increase
- Increase in efficiency of new lamps replacing olders
- Higer blue content of LEDs
- Result:
+49% to +270% from 1992 to 2017



Italian regional laws

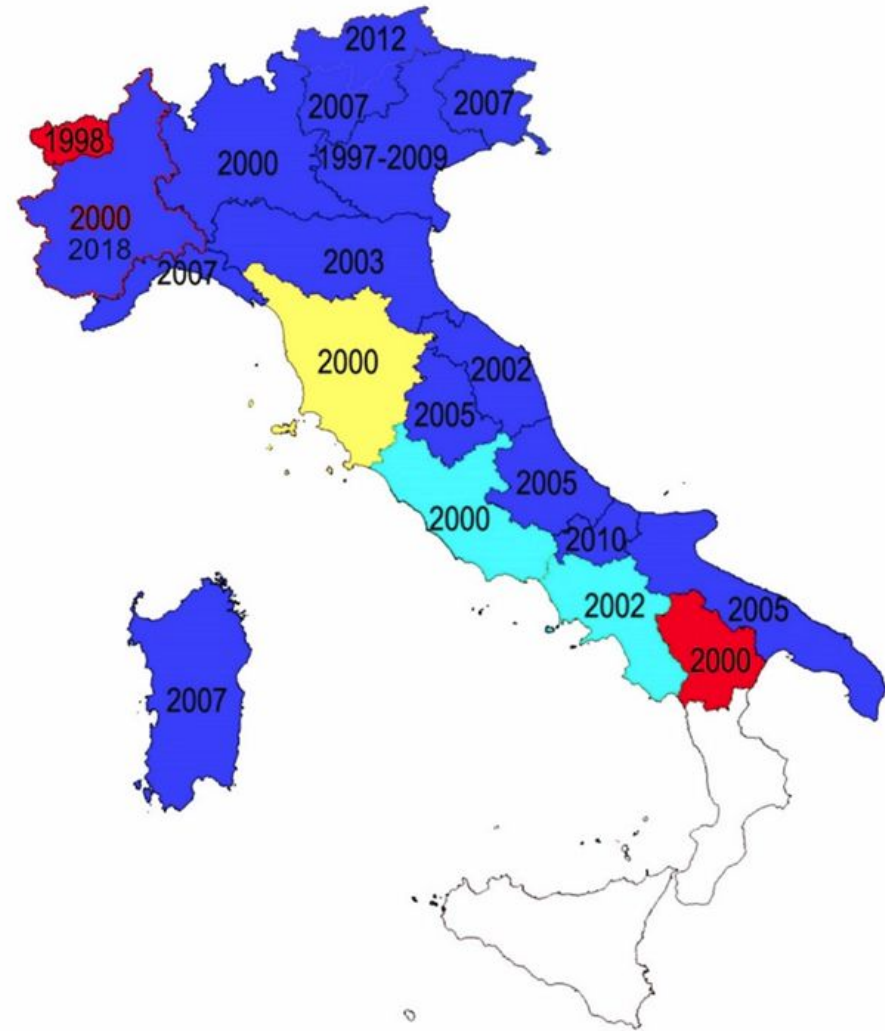
Blue: 0% ULOR (fully shielding)

Light blue: 0% with some exceptions

Yellow: <3% ULOR

Red: generic laws with no technical prescriptions

White: no laws



The Lombardia law 'revolution'

- 25000 signatures collected to push the law approval
- March 27, 2000: approval of the law
- For the first time a law against light pollution:
 - Imposes fully shielding for both public and private outdoor lights
 - Is applied in all its territory (not in some 'protected areas')
- And this happened in one of the most developed/industrialized regions of the World, with about 10 million inhabitants and 22% of GDP of Italy

If it works there, it must work everywhere
- Lombardia's law was the forerunner of most other Italian regional laws, of the Slovenia one, of the Starlight Initiative prescriptions rules, of the Chilean norma luminica and so on.

General rules in the laws

- Fully shielding (for both private and public lights)
- Limits in lighting levels (based on the minimum levels indicated by norms e.g. EN 13201)
- Historic buildings can be lighted from bottom, but with curfew (midnight) and limits in illuminance or luminance for historic buildings (e.g. 15 lux)
- Limits in luminance and curfew for lighted advertising signs
- Very weak control of blue light (because most of the laws are old)
- No control in the total amount of ALAN produced

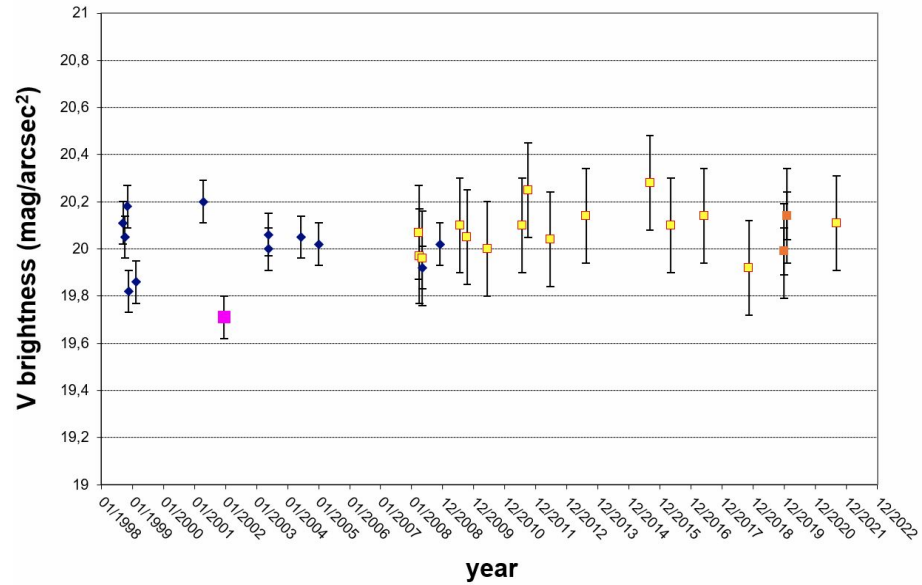
After more than 20 years of laws

The night sky seems not to be worsening, despite a doubling in the ALAN produced.

This demonstrates that the 'single installation' approach is not sufficient to decrease light pollution.

We need, in addition to the strong prescriptions on single installations, a red-lines approach

Total sky brightness at San Benedetto Po Observatory



Two **complementary** strategies to reduce ALAN and LP to the desired sustainable levels:

- a) Control at the level of single light source or single light installations (e.g. as in the abovementioned existing Italian regional laws)
- b) Control over the territory via allocation of admissible quota of ALAN driven by the fulfillment of red-lines target of indicators of LP (the allocable emission of light must depend on the environmental target indicators, imposing a strong reduction over time)

The ways to make points a) and b) effective will depend on the general strategies used at the country level (e.g. top-down laws imposing rules with fines for who will not comply; incentives to shut-off, reduce, remove, change installations toward less impacting ones; photon-tax: who pollutes pays...).



**DARK
& QUIET
SKIES**

Thank you for
your
attention!

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