



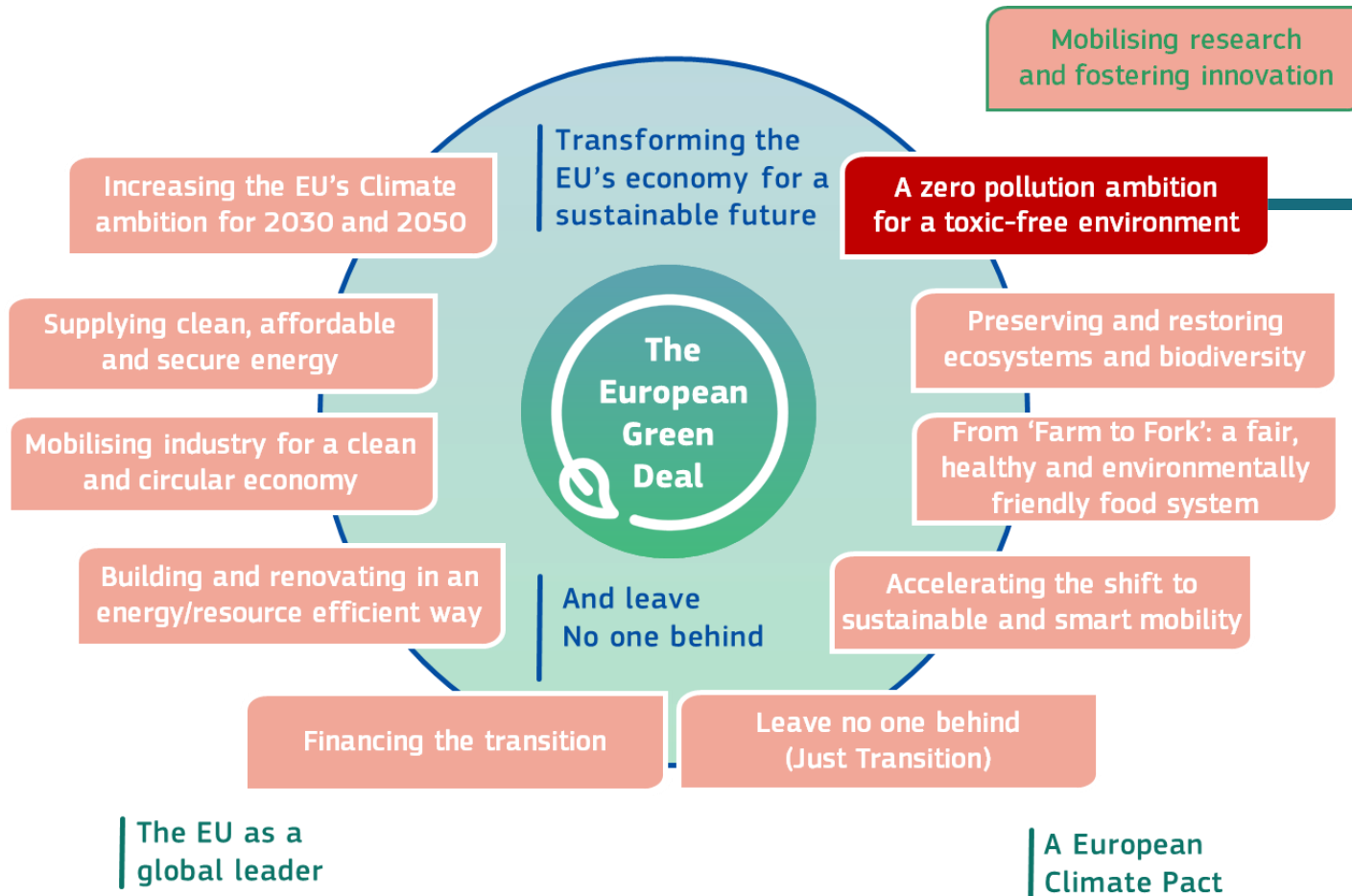
Light Pollution

Setting the scene at the European level

International Workshop: Light Pollution 2022
Brno, 26/10/2022



Light pollution in the European Green Deal and the 8th Environment Action Programme



One of the 8th EAP priority objective:

“pursuing **zero pollution**, including in relation to harmful chemicals, in order to achieve a toxic-free environment, including for air, water and soil, as well as in relation to **light and noise pollution**, and protecting the health and wellbeing of people, animals and ecosystems from environment-related risks and negative impacts”

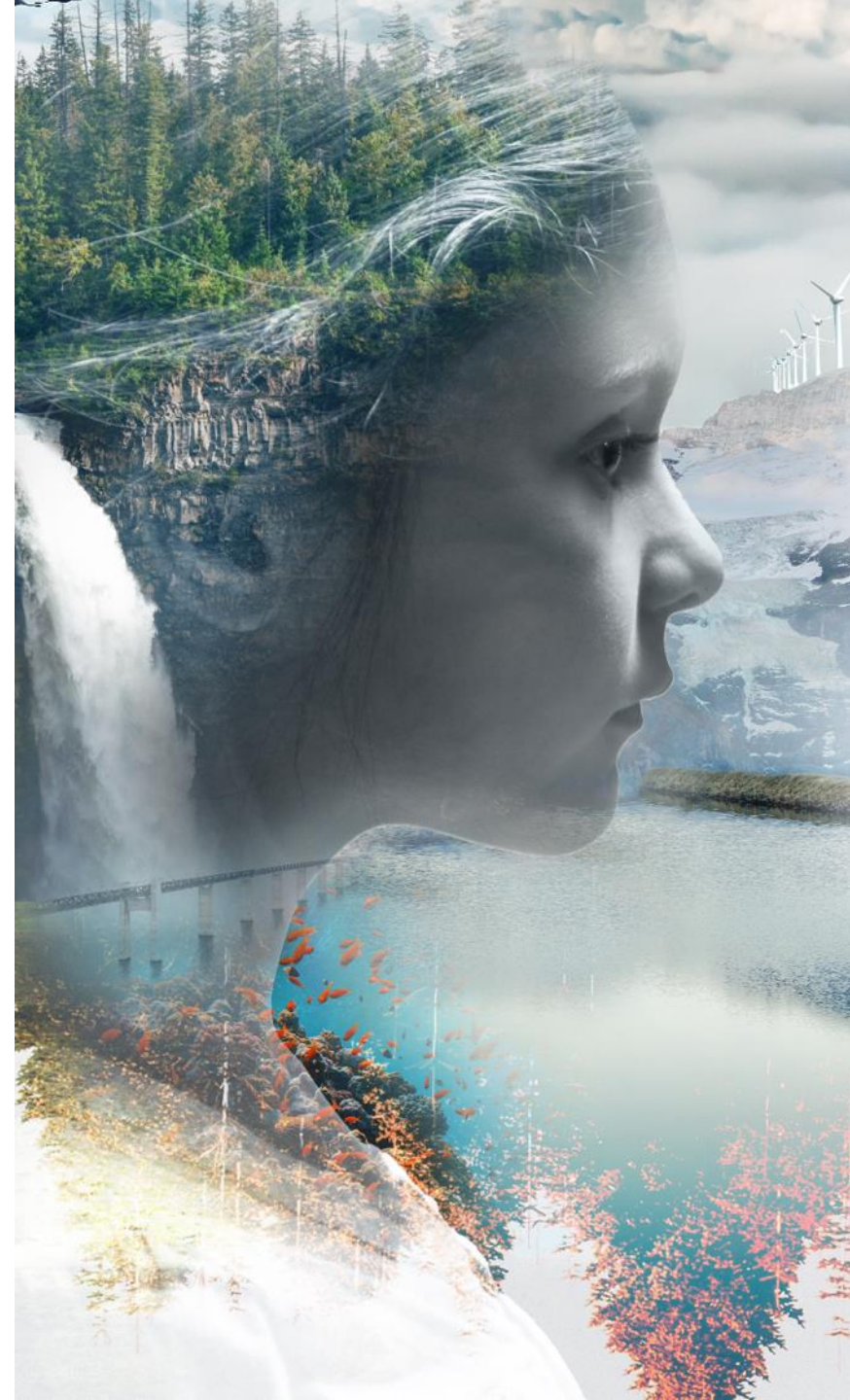
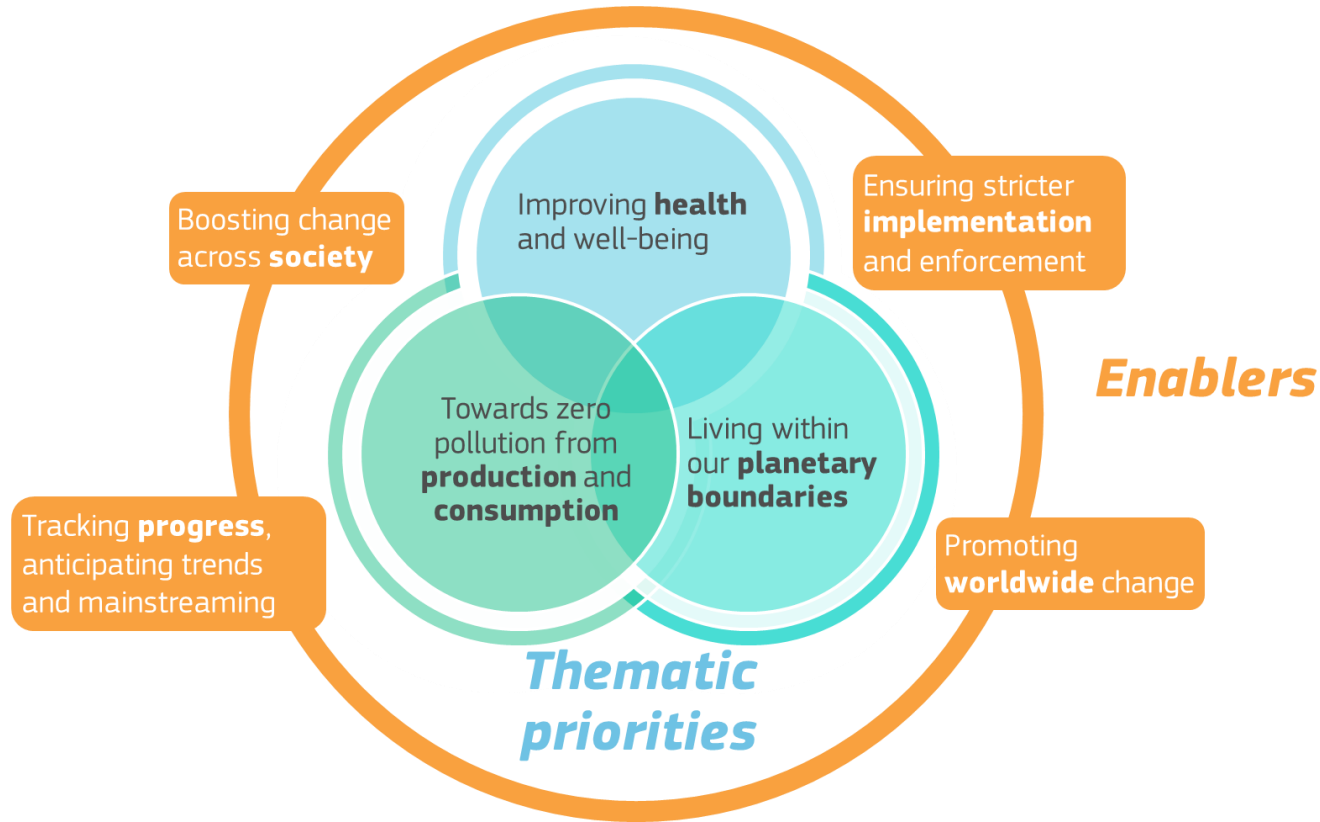


The **zero pollution vision** for 2050

“Air, water and soil pollution is reduced to **levels no longer considered harmful to health and natural ecosystems** and that **respect the boundaries our planet can cope with**, thus creating a toxic-free environment.”



Action Areas

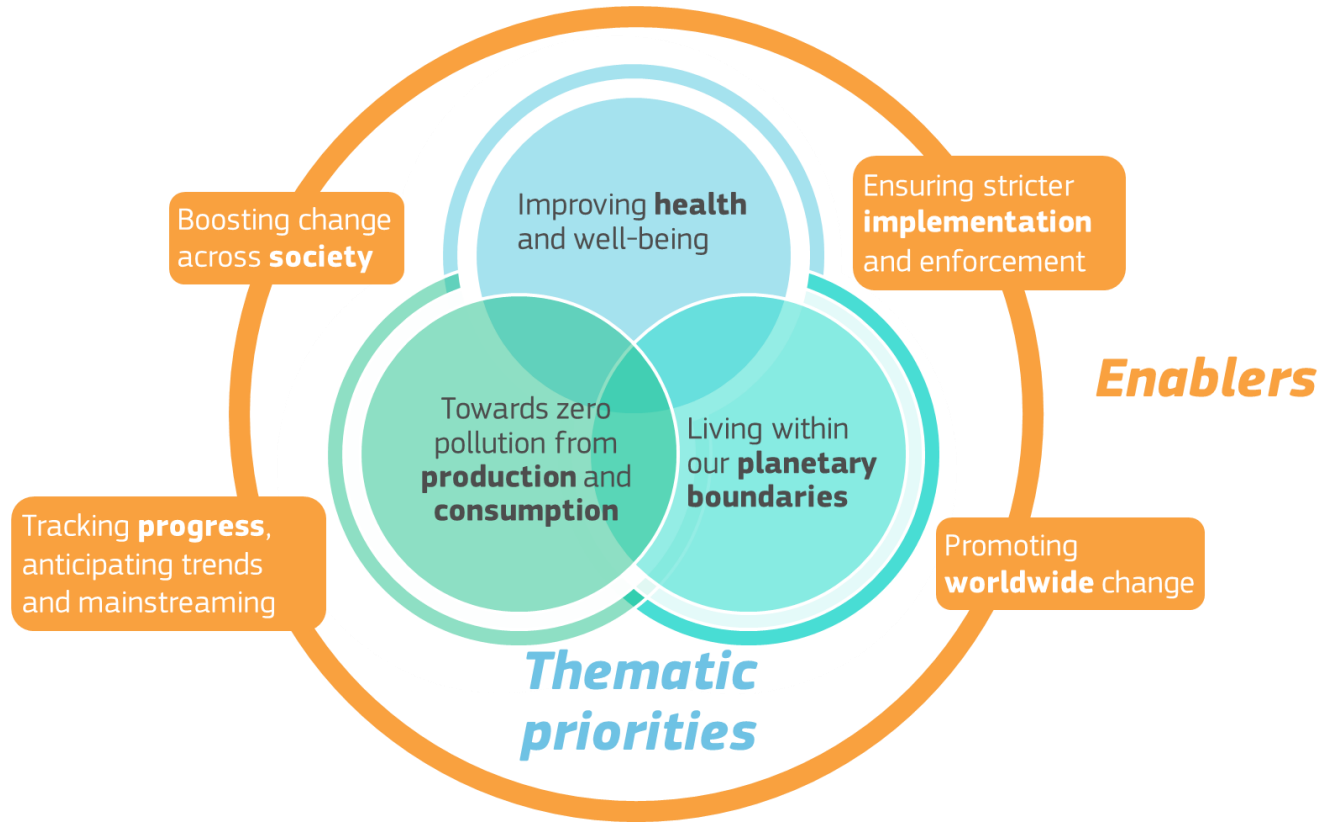


Zero Pollution Package of 26 October 2022:

- Revised Ambient Air Quality Directive
- Updated list of water pollutants under the Water Framework Directive
- Modernised Urban Wastewater Treatment Directive



Action Areas



Zero Pollution Monitoring and Outlook:

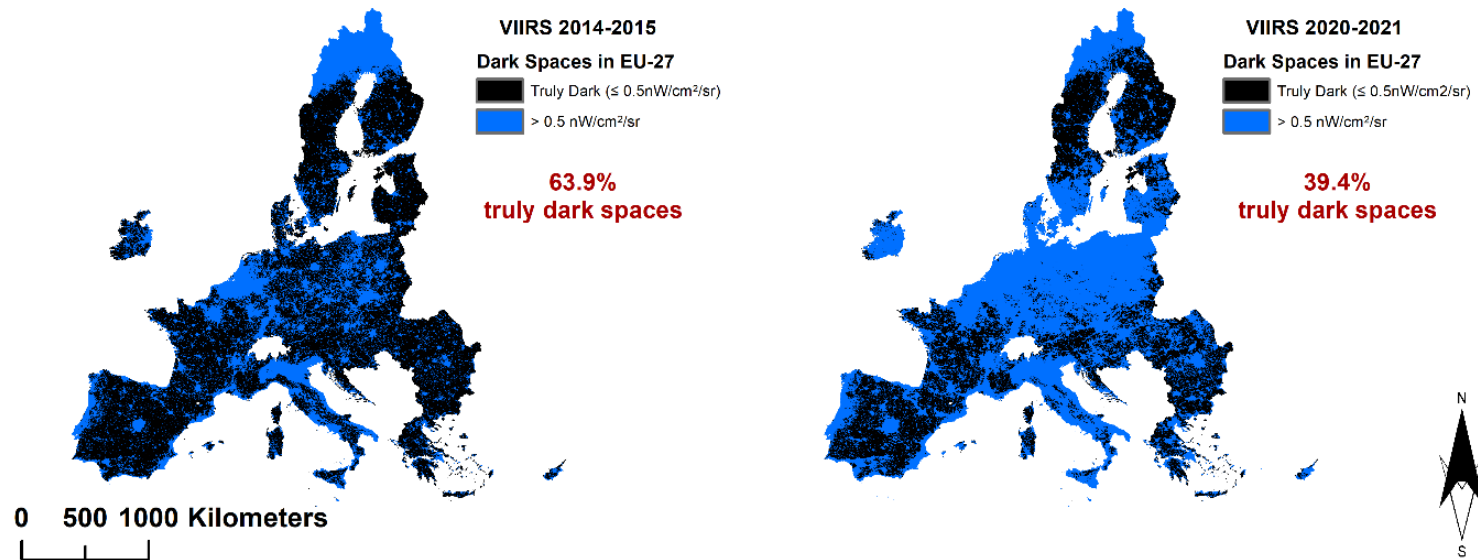
- continue supporting research on pollutants and types of pollution of emerging concern such as light pollution and its impacts on biodiversity
- help translate 'early warnings' into recommendations on pollutants of increasing concern based on the latest research findings



How big is the problem?

Comprehensive overview prepared by ETC be half of EEA which feeds into the Zero Pollution Monitoring

- Increasing evidence on light pollution
- Still many open questions, e.g. on scale and impacts



Source: European Topic Centre on Health and Environment on behalf of EEA (2022) : Review and Assessment of Available Information on Light Pollution in Europe → see presentation of Kaja Widmer (Swiss Tropical and Public Health Institute) in panel 3

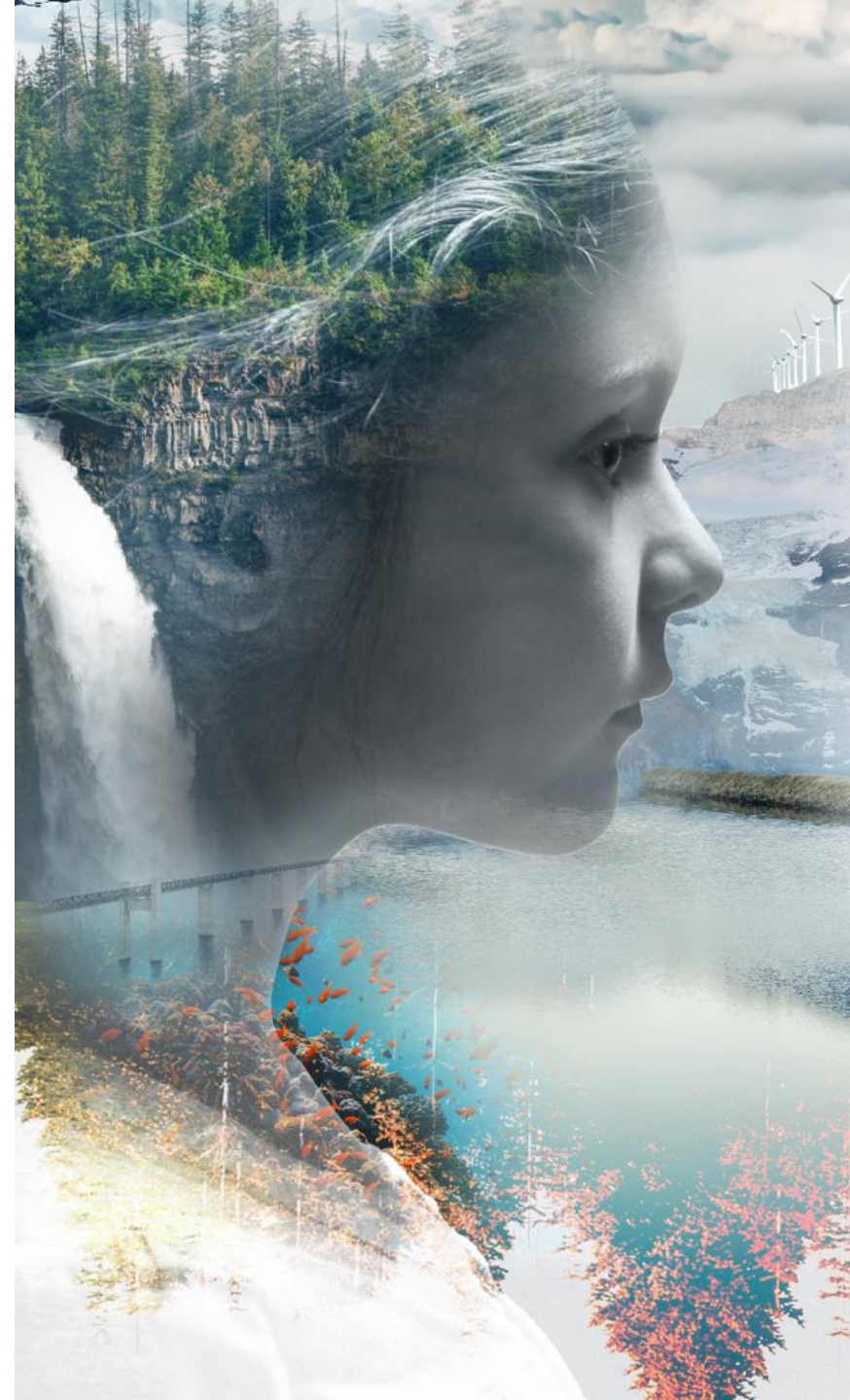




Light pollution in EU policies

In addition to the 8th EAP and the Zero Pollution Action Plan, light pollution already plays an important role in the following policies:

- Biodiversity Strategy, Birds and Habitats Directives and Pollinators Initiative
- EIA/SEA Directives assessing environmental impacts
- Energy efficiency and eco-design and Low Voltage Directive
- Green Public Procurement
- Sustainable Finance Regulation (Taxonomy) - light pollution is listed in the definition of pollution





Light pollution and biodiversity

- To achieve EU Biodiversity Strategy targets, **Member States will need to develop national commitments for action for certain nocturnal species** protected under the EU nature directives reducing, *inter alia*, the negative impacts of light pollution, where this is identified as a significant pressure.
- Article 6.2 of the Habitats Directive also requires **Member States to take the necessary measures to avoid significant disturbance of protected species in Natura 2000 sites**, which, where relevant, is applicable to light pollution.
- However, **Member States have not highlighted light pollution as a key pressure** on protected species in the context of their reporting under the Birds and Habitats Directives.





Light pollution and pollinators

- Light pollution is of concern for pollinators
- Consultative process in preparation of EU Pollinator Initiative review included expert workshop on pollinators and light pollution in April 2022
- Experts made recommendations for action and national, regional and local level (see workshop [report](#))
- Pollinator Conservation Guidelines through which light pollution mitigation is promoted are available for cities ([link](#)), citizens ([link](#)) and businesses ([link](#))
- Revision of the EU Pollinators Initiative planned for end 2022





Light pollution and environmental assessments

The **Environmental Impact Assessment (EIA)**

Directive applies to certain projects and it requires an assessment of likely significant effects of the projects on the environment, including on human health and biodiversity including

- an estimate of expected light emissions of a project and
- a description of the likely significant effects resulting from light pollution.

Similarly, light pollution is to consider under **SEA Directive for plans and programmes** if light pollution significantly affects biodiversity or human health.





Light pollution and energy efficiency

- Energy efficiency first principle applies to every legislative, investment and planning decision
- Light pollution and energy efficiency can go hand in hand, e.g. better orientation of lights.
- Commission proposed to reduce energy consumption of public bodies by 1.7% annually (as part of Energy Efficiency Directive revision)
- Public lighting decided at local level...no EU regulatory action but rather promoting 'good practices' such as smart public lighting
- Covenant of Mayors is running a "[energy saving sprint](#)" which includes improving public lighting





Light pollution and products

- Ecodesign Directive focusses on energy efficiency of lighting products and on their performance, this can contribute indirectly to help reduce light pollution
- Some work on lighting products planned in [Ecodesign Work Plan 2022-2024](#)
- Low Voltage Directive sets standards for lighting equipment and some standards cover health effects from lighting (e.g. EN 62471 or EN 60335).
- Green Public Procurement (GPP) covers criteria for road lighting and [traffic](#) signals. These criteria include recommendations and provisions to request lighting products compatible with dimming controls, to avoid upward light, limit blue light emissions, and switch off lighting in closed parks.





Light pollution – EU-funded research

- CORDIS database includes many results for EU-funded research projects on light pollution since 2005 (*some 71 results on interim reports, news articles etc*)
- Focus varies (astronomy, energy efficiency); increasing number on biodiversity / ecosystems.
- Human health impacts less explored in EU-funded research

Some ongoing projects

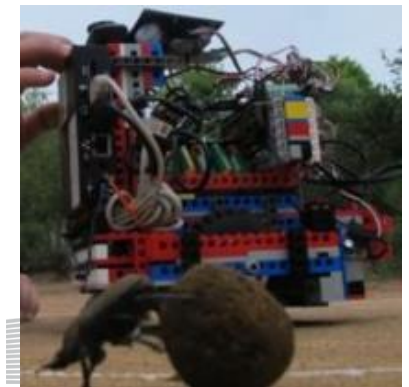
ENLIGHTENMe: Innovative policies for improving citizens' health and wellbeing addressing indoor and outdoor lighting (primarily urban: Bologna, Amsterdam, Tartu) www.enlightenme-project.eu (Horizon 2020)

CHRONO: reviewing causes and consequences of chronotype disruption caused by electronic devices, artificial light and work-related pressures of 24-hour economy (European Research Council).

CORALAN: impacts on coral of artificial light at night (Horizon 2020)

EXPANSE: improving urban population health (Horizon 2020 – considering whole “exposome” but little focus so far on light)

CITISENSE, UltimateCOMPASS (European Research Council): how organisms' communication / navigation alters in different states of light (*pictured: robot analysing dung beetle navigation using cues from the sky*)





Future research



Horizon Europe possibilities –
2023/24 Work Programme (due by December)

Cluster 1 health – human health impacts

2023-24 WP likely to support ongoing research on *human exposome* (all impacts of environmental exposure – European Human Exposome Network (EHEN)), and role of environmental pollution in *non-communicable diseases* – *link to light pollution could be made*

Cluster 6 natural resources, agriculture, environment – biodiversity impacts

2023-24 WP likely to support research on *biodiversity impacts* of light (and noise) pollution





Conclusions

- Light pollution is receiving increasing attention at EU level
- Many policies and existing legislation can already be used to address light pollution, so far not used enough
- Evidence base is still growing, better understanding on scale and impacts of light pollution at national level needed





Join the “Zero Pollution Stakeholder Conference”

- 14 December 2022
- Open hybrid meeting of the Stakeholder Platform – [livestream available](#)
- Presentation and discussion of the first Zero Pollution Monitoring and Outlook Report and the 3rd Clean Air Outlook
- Registration open – click [here](#)





Thank you!

More information:

- [Zero Pollution webpage](#)
- [Zero Pollution Stakeholder Platform](#)
- [Green Week 2022 Session: “Who pays for pollution?”](#) (recording)

Your input is welcome!