

Regulations against light pollution in France and Germany

What are the reasons?

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of Vereinigung der Sternfreunde
Kommission Lichtverschmutzung der
Astronomischen Gesellschaft



Bridge of the two banks: Strasbourg(F) – Kehl (D)

Aim: Protection of Night Sky

La Palma/Teneriffa/Spain

Lombardy/Italy

Slovenia

Energy savings

also EU Ecodesign Directive for lighting:

reduce electricity use of 336 TWh \approx 132 mio. t CO₂

incandescent / mercury / fluorescent bulbs

-> LED

energy efficient -> rebound effect -> brighter!



Tenerife

France: Energy saving

Grenelle Law 2013

Electricity spent for lighting 56 TWh

Reduction 2 TWh ~ 250 000 t CO₂

curfew of facade illumination, shops from 1h

offices 1 h after end of use



Energy savings

Decree of 2018, valid since 1.1.2020:

Article 2 (curfew): as mentioned

Article 3 (reduction of light imissions):

ULOR (upward light output ratio) < 1%,

95% in solid angle $3/2 \pi$ sr (cone 75.5°)

correlated colour temperature ≤ 3000 K

Limit luminous flux 10 (Parks), 25 lm/m², 35 lm/m²

Article 4 (observatories, nature parks)

ULR = 0

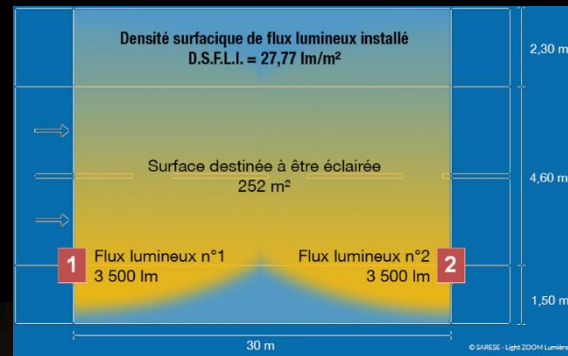
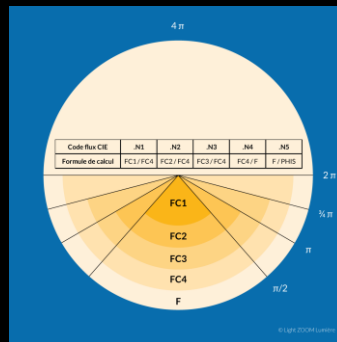
cct ≤ 2400 K, in municipalities ≤ 2700 K

no light on water

no sky beamer > 100 000 lm

Article 8 (change)

Luminaires with ULR > 50% (globes) retrofitted till 2025



<https://www.ecologie.gouv.fr/arrete-du-27-decembre-2018-relatif-prevention-reduction-et-limitation-des-nuisances-lumineuses>

Initiative ANPCEN

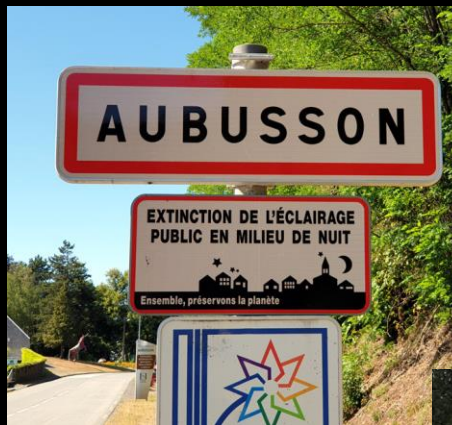
Association Nationale pour la Protection du Ciel
et de l'Environnement Nocturnes
National Association for the protection of the sky
and the night environment

Villes et Villages Etoilés

2020: 364 municipalities

and

13 000 (of 36500) villages switch off 23/0 and 5/6



Germany: Insect Decline (Insektensterben)

during 27 years
75 % decline of insect biomass
in nature protected areas

Federal Government
action program:
reduce light pollution!

Regional Laws



Krefelder Studie Hallmann et al , 2017

AKTIONSPROGRAMM

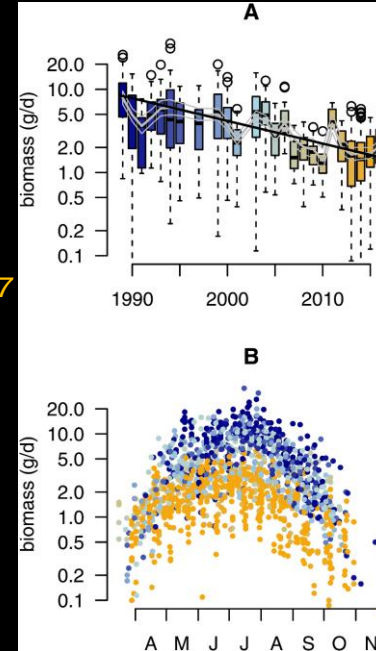
INSEKTENSCHUTZ!

Diese Maßnahmen* helfen Insekten:

- ✓ Ausweitung von **Hecken und Feldrainen**
- ✓ Einsatz von **Pestiziden reduzieren**
- ✓ Bessere Förderung für **insektenfreundliche Kommunen**
- ✓ Mehr **extensiv genutztes Grünland**
- ✓ **Lichtverschmutzung** eindämmen
- ✓ **Naturschutzgebiete** stärken
- ✓ Mehr Geld für **Naturschutz in der Landwirtschaft**

Foto - mauritius images/imageBROKER/Thomas Götzfried
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*Auswahl aus den am 20.06.2018 vom Kabinett beschlossenen Eckpunkten.



Bayern (Bavaria), 2020

Referendum „Artenvielfalt & Naturschönheit in Bayern“

„Save the bees“, 2019

State Nature Protection Law

Art. 11a Himmelstrahler und Beleuchtungsanlagen

Disturbance of insects by artificial light must be reduced

Artificial lighting near protected areas must be permitted

Sky beamers are forbidden



State Immission Law

Art. 9 Vermeidbare Lichtemissionen

Facade illumination of public buildings switch off at 23:00

Illuminated advertising outdoor is prohibited (except restaurants)



Baden-Württemberg, 2021

Nature Protection Law Baden-Württemberg

§21 Beleuchtungsanlagen, Werbeanlagen, Himmelsstrahler

Facade illumination public buildings

22 – 6 Uhr switched off

April – Sept. totally switched-off

Street lighting

new must be „insect friendly“

retrofitted till 2030

no illuminated advertising outdoors, except:

relevant for traffic (petrol stations, parking, ...)

rest stations on motorways

Heidelberg castle



Baden-Württemberg

„Insect friendly“ (Explanations Ministry, 11.05.2021):

time limited use (only when necessary)

cct max. 3000 K (Na, ww LED), no UV

light directed only downwards

closed luminaires (no ingress)



Test illumination Düsseldorf

Federal Nature Protection law

24.06.2021

https://www.bgbl.de/xaver/bgbl/media/C0531504570297605C76D68FBD B859F3/bgbl121s3908_80118.pdf

§23 (4)

Illumination of roads and paths and illuminated advertising in nature protected areas, national parks, core zones of biosphere reserves **is forbidden**.

§41a

New illumination of roads, buildings, advertising ... must be installed that wild living species are protected against negative impacts of light emission.

Regulations have to be formulated (2 years?)



Not regulated:

what and when will be illuminated?

non-public lighting

size and luminance of luminous areas ($50/100 \text{ cd/m}^2$)

far reaching lights (e.g. glare, light domes)

Control of the law ("lighting police")



Possibilities of Regulations:

Lighting masterplans (municipality)

construction permits





DARK & QUIET SKIES

Thank you for
your
attention!

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