

Night Light
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NIGHT LIGHT

**Improving regional policies to reduce light pollution and
protect and valorise dark night skies**

Action Plan of the Nature Park Our

Hosingen, December 2019

PART I – General Information

Project: INTERREG Europe NIGHT LIGHT

Improving regional policies to reduce light pollution and protect and valorise dark night skies

Partner organisation: **Nature Park Our**

(Syndicat pour l'aménagement et la gestion du Parc naturel de l'Our)

Country: LUXEMBOURG

NUTS 2 level: Luxembourg

NUTS 3 level: Luxembourg

Legal representative: Emile Eicher – President of the Nature Park Our

Website: www.naturpark-our.lu

Contact person: Laurent Spithoven

Email address: laurent.spithoven@naturpark-our.lu

Phone number: +352/908188-642

Nature Park Our

The Nature Park Our is located in the Ardennes, on the northern edge of Luxembourg, in the area where Belgium, Germany and Luxembourg meet. Eight municipalities, on a surface area of 420 km² and with about 23,000 inhabitants, have come together with the aim of creating a sustainable balance between nature conservation and the economic development of the region.

The nature park strives to make a contribution to improving the quality of life through various projects in the areas of climate protection, nature conservation, agriculture, culture, tourism, environmental education and services for the member municipalities and their inhabitants.

PART II – Policy context

1 The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

2 Name of the policy instrument addressed:

- Climate Pact

3 Geographical coverage of the policy instrument:

- national

4 Further details on the policy context and the way the action plan should contribute to improve the policy instrument:

a) Background

The *Climate Pact* is a national policy instrument to promote the Luxembourg government's targets in terms of climate protection on a local and regional level. The law of September 13, 2012 determines the creation of an official pact between the state and the municipalities. This climate pact enables government funding of the climate policy efforts of the municipalities to reduce energy consumption and greenhouse gas emissions within the municipal territory and at the same time to stimulate investments, economic activities and the labour market.

The Climate Pact was launched by the Ministry of the Environment, Climate and Sustainable Development. The municipalities that want to participate are free to take the Climate Pact individually or together, in inter-municipal cooperation. The pact is sealed by a convention between the state and each municipality involved. In this way, the municipalities declare their willingness to strive for the European Energy Award® (EEA) and to handle a sensible energy balancing system at the municipal level within two years. The state in turn guarantees financial and technical support in the implementation process.

The Nature Park Our member municipalities adopted the Climate Pact in 2013 to structure their development policy and stimulate local economic activity. This implementation of the pact offers an *opportunity to improve local interventions to reduce negative effects of artificial light emission* on landscape, biodiversity and ecology in the Nature Park Our. At the starting point of the NIGHT LIGHT project, the nature park municipalities had little experience in this field, but the importance is increasingly recognised, as light emissions increase in the rural landscape.

Luxembourg's landscape is the most fragmented in Europe (European Environmental Agency, 2009). Growing light pollution from agglomerations and infrastructure across the territory affects the Nature Park Our and dark skies get more and more uncommon in the area. In 2009, the international year of astronomy, a small sensitisation campaign named "Dark Sky" first raised political awareness of light pollution effects in the region of the Nature Park Our.

For the 8 municipalities of the nature park region the artificial lighting of towns and settlements by night in the rural landscape is an important issue. On the one hand because costs for public lighting often account for up to 25 % of their municipal budgets. On the other hand, because political awareness of the negative effects of light pollution on landscape and nature is now slowly emerging. However, the actual ecological effects of light pollution in the nature park area have not been fully analysed yet.

The awareness on the ecological importance of avoiding light pollution is still limited among inhabitants and communities in the region. **Coordinated action**, with local, regional and national agents is needed to reduce light pollution effects on landscape and nature in the Nature Park Our and allow inhabitants and visitors to once again enjoy natural darkness at night.

Through **interregional learning and regional stakeholder mobilisation** within the NIGHT LIGHT project the Nature Park Our aims **to improve the national Climate Pact** through the development of new projects to:

- increase public engagement in preventing light pollution and protecting dark skies;
- reduce light emissions in the municipalities;
- facilitate sustainable dark-sky tourism developments in the region (NATURA2000 areas).

As a side effect, these projects also make a positive contribution to regional energy efficiency.

b) 1st steps

During Phase 1 of the NIGHT LIGHT project (2017-2019) the Nature Park Our tried to involve their regional stakeholders as much as possible within the interregional exchange process. The stakeholders that attended the **interregional meetings** (policy learning seminar and peer review meetings) made an effort to inform the regional stakeholders during a large number of regional working group meetings about the constructive interregional exchanges they experienced. The interregional learning and regional stakeholder mobilisation within the NIGHT LIGHT project allowed stakeholders in the Nature Park Our to identify proven practices from other EU regions and design an action plan for reducing light emissions from local municipalities.

The management committee of the Nature Park Our decided to invest in the commission of Dr. Lukas Schuler, President of Dark Sky Switzerland, to conduct a **study analysis on light pollution** sources in the brightest zones of the nature park at night. The research was finalized by the end of the 2018. The results provided important specifications concerning lighting sources in the region that priority contribute to light pollution. The objective character of the results will help to convince lighting owners to optimise their infrastructure.

Due to the intervention of the Nature Park Our, light pollution was integrated as a parameter of threat into the national **NATURA2000 management plans** by the Ministry of the Environment, Climate and Sustainable Development in 2018, including a superior definition of protective measures. From that moment on, the authorisation procedure of future construction projects in the particular Natura2000 areas have to be completed by impact studies on light pollution.

Furthermore, the Nature Park Our was invited to actively participate in the national working group of the Ministry of the Environment, Climate and Sustainable Development, to elaborate a **National Guide for good outdoor lighting** for municipalities and private enterprises to reduce light pollution. In 2018, the new guideline was presented to the public during a press conference, followed by a workshop for representatives of all the national municipalities (over 70 participants), which included the presentation of the lighting masterplan of the nature park municipality *Clervaux* and the Night Light project as good practice examples.

The **Peer Review Meeting** in the Nature Park Our in May 2018 was the highlight of the first NIGHT LIGHT project phase and a huge success. The regional stakeholder group welcomed a very professional peer group. During their intensive review program, the peers showed a lot of interest towards the concerns and challenges of the local, regional and national stakeholders. Their findings and contributions led to very interesting discussions and interactions. The highly professional input of the peers was reflected by an extraordinary interest of all the participating stakeholders to contribute to the Night Light process by setting up the most realistic and effective action plan possible. The peer review meeting created a lot of enthusiasm and constructive dynamics among the regional stakeholder group.

PART III – Details on the actions

1) ACTION 1 – Integration of the light pollution topic to the national Climate Pact policy instrument

This prior action is aiming specifically the implementation of the main objectives of the NIGHT LIGHT project into the national policy instrument Climate Pact. The objectives to be implemented concern the reduction of light pollution and the protection of dark night skies.

a) Relevance to the project

Initial discussions have already been held with the managing authorities of the national Climate Pact (Myenergy GIE, Ministry of the Environment, Climate and Sustainable Development) on the implementation of this action, which resulted in the integration of the National Guide for good outdoor lighting into the Climate Pact Management System (c.f. PART II, 1st Steps). In order to convince the national coordinators of the Climate Pact of the importance of integrating the subject of light pollution in their national program, a number of regional NIGHT LIGHT activities and results were decisive: the invitation of the representatives of Myenergy and the responsible Secretary of State for Sustainable Development Camille Gira for the NIGHT LIGHT kick-off event on 7 March 2017, with the presentation of the Night Light project and the European partner regions; the involvement of the representatives of Myenergy in the peer review meeting from 14 to 18 May 2018 in the Nature Park Our, participating in the peer interviews and the NIGHT LIGHT conference of 16 May 2018 with the presentation of first municipal and regional pilot projects to control light pollution (e.g. light master plan of Clervaux, analysis of the brightest sites in the Nature Park Our, etc.); Communication of the peer review report to the representatives of Myenergy and the relevant ministry, with express recommendations of the peers to incorporate the objectives of the NIGHT LIGHT project into the national Climate Pact program.

b) Nature of the action

On 08.10.2018, in a meeting with representatives of Myenergy GIE and the Ministry of the Environment, Climate and Sustainable Development, the Nature Park Our was able to convince the responsible authorities for the coordination and implementation of the policy instrument Climate Pact, which was targeted by the Night Light project, to anchor light pollution and its control from 01.01.2019 on within the catalogue of measures of the Climate Pact. The Climate Pact thereafter assesses participating municipalities (meanwhile all 102 Luxembourg municipalities) in the future positively in the implementation of measures in accordance with the guideline for good light, published by the Ministry in June 2018. This concerns 3 of the total of 78 Climate Pact measures and represents a financial incentive for a Climate Pact community (assessment determines the degree of certification of a municipality and its financial state support) for the concrete implementation of measures against light pollution. In doing so, the nature park and the Ministry expect a gradual practical application of the guideline throughout the country of Luxembourg and, perhaps more importantly, an almost inevitable confrontation of the municipality leaders with the problem of and solutions for light pollution.

c) Stakeholders involved

- Ministry of the Environment, Climate and Sustainable Development - managing authority of the national Climate Pact
- Myenergy GIE - coordination of the national Climate Pact
- 102 municipalities – Climate Pact signatories

d) Timeframe

- already implemented

e) Indicative costs

- none

f) Indicative funding sources

- none

2) ACTION 2 – Independent "lighting consultant" for the Nature Park Our municipalities, enterprises and households

The creation of a regional and independent lighting consultant position has been defined by the regional stakeholder group as a key element for the long-term anchoring and success of the NIGHT LIGHT initiative within the region of the Nature Park Our. As an interface and point of contact for the municipalities, regional and state administrations as well as for enterprises and citizens, this initiative of a "carer" is of central importance.

a) Relevance to the project

The action has been generated on the basis of good practice identified and presented in the project and the main findings of the peer review held in the Nature Park Our in May 2018. The project idea arose in the regional working group NIGHT LIGHT, after a participant of the peer review meeting in Avila in April 2019 drew attention to the initiative of Avila County to set up a facility to show exemplary outdoor lighting infrastructure for sensitisation and awareness-raising of municipalities and enterprises. During the peer review meeting in the Nature Park Our, the international peers perceived a communication gap between experts and local community and recommended to include lighting companies and technical actors within the regional process and to focus on capacity building for training technicians as well as raising public awareness through educational activities.

b) Nature of the action

The position of an independent lighting consultant bundles the following responsibilities:

- Development, implementation and management of a regional lighting consultancy service for individuals, businesses and municipalities in the Nature Park Our;
- Initiation, coordination, animation, monitoring and documentation of the implementation of various measures aimed at reducing light pollution and improving the energy efficiency of lighting in the territory of the nature Park municipalities;
- Professional advice and support as well as supervision of public and private projects for the renovation, optimization and installation of lighting infrastructures in accordance with the requirements of the national guide for outdoor lighting;
- Information and assistance to the various stakeholders on possible funding for the measures to be implemented;
- Advice to households on indoor and outdoor lighting technologies that respect health and the environment, as well as energy-efficient technologies;
- Development of information and awareness materials for different target groups to deal with lighting and avoid light pollution;
- Contact person and intermediary for all the different regional players and partners of the Nature Park Our on the lighting theme;
- Transfer of knowledge in the field of lighting, light pollution and environmental and climate protection.

c) Stakeholders involved

- Nature Park Our – coordination & funding
- Regional stakeholder group NIGHT LIGHT – supervision
- Ministry of Energy and Spatial Planning – co-funding
- Member municipalities of the Nature Park Our – active cooperation
- Guichet unique PME – regional contact point for companies
- Lighting companies – technical support
- National Public Building Administration – technical support
- National Road Management Administration – technical support
- National College of Architects and Consulting Engineers – technical support
- National Sites and Monuments Service – technical support

d) Timeframe

- 3-year pilot phase, which started in October 2019

e) Indicative costs

- Total of 440.000 €

f) Indicative funding sources

- Nature Park Our – 50%
- Ministry of Energy and Spatial Planning – 50%

3) ACTION 3 – Development of a monitoring program for artificial light immissions in NATURA 2000 protected areas

A national study on light pollution in Luxembourg published in 2017 made clear, that this often-underestimated environmental problem has demonstrably increased in recent years. In the coalition agreement of the Luxembourgish Government parties, the reduction of light pollution and the promotion of "better lighting" are named as priority goals under point 28 "Sustainable development, climate and protection of natural resources". Particular attention should be paid to the negative impacts of excessive artificial lighting on natural areas worthy of protection, such as the Flora-Fauna-Habitat (FFH) areas, since these represent an essential function as a retreat for endangered animal and plant species. One of the main objectives of the Habitats Directive is to preserve or restore the habitats and species covered by this directive in a favourable state of conservation.

In the process of renewing the national management plans for the NATURA2000 areas in the Nature Park Our region in 2018, light pollution was identified as a risk factor for these FFH areas worthy of protection and special measures for impact reduction were defined (cf. PART II, 1st Steps). In accordance with the objectives of the national Kyoto Fund and in the foreground of a new national energy and climate plan, as well as the local and regional climate protection efforts of the climate pact municipalities in the Nature Park Our, the containment of light pollution makes a significant contribution to increasing energy efficiency in lighting infrastructures and reducing them greenhouse gas emissions. According to the national guideline for good light (2018), by setting nightly switch-off times and by optimizing the alignment, quantity and quality of artificial lighting sources, a permanent energy saving of up to 80% can be achieved.

The aim of this action is the targeted collection of data on artificial light immissions in the NATURA 2000 areas in the Nature Park Our and their geographic analysis to determine the light pollution emitters. The data collected will be used to determine and analyse the degree of light pollution in protected areas to conclude its negative effects, and to derive specific measures to reduce light pollution.

a) Relevance to the project

The action has been generated on the basis of good practice identified and presented in the project and the main findings of the peer review held in the Nature Park Our in May 2018. The project idea arose in the regional working group NIGHT LIGHT after a participant of the peer review meeting in Hajdú-Bihar County in September 2017 drew attention to the initiative of Hortobágy National Park to set up a monitoring system for light pollution to be able to make statements in the future about the effect of technical measures in lighting infrastructures to reduce light pollution. During the peer review meeting in the Nature Park Our in May 2018, the international peers recommended light pollution monitoring measurements in the protected areas of the Nature Park Our to better assess and communicate the effects of future measures to reduce light pollution.

b) Nature of the action

In order to better monitor the reduction or increase of light pollution in threatened locations in the nature park, an all-sky camera will be installed. The fisheye optics captures the whole sky at the location above and up to the horizon and documents the influence of light pollution every night, especially the light bells of the more distant places on the horizon. By skilfully choosing the location, a time series not just of the darkness above the location, but also of the influences of the more distant places can be captured. An additional benefit of the recordings is the possible use for meteorology (clouds) and astronomical research (falling stars and meteorites). Active amateur astronomers will be brought on board of the projects as beneficiaries of the data and as support to give maintenance of the systems (contamination of the glasses, reaction in the event of malfunction), so that the nature park has only to provide the infrastructure (electricity, internet connection, data server). Topographic and atmospheric models could be developed, that enable forecasts in addition to analysis: the monitoring system can also be used to learn about changes in light emissions for the future planning or location of lighting infrastructures, so that the impact can be minimized on areas worth protecting.

c) Stakeholders involved

- Nature Park Our – coordination & funding
- Regional stakeholder group NIGHT LIGHT – supervision
- Ministry the Environment, Climate and Sustainable Development – co-funding
- Luxembourg Amateur Astronomers Association – technical support
- National Forestry and Nature Administration – technical support
- National Museum of Natural History – technical support

d) Timeframe

- Long-term analysis (4 years, start March 2020)

e) Indicative costs

- Total of 150.000 €

f) Indicative funding sources

- Nature Park Our – 50%
- Ministry the Environment, Climate and Sustainable Development – 50%

PART IV – Monitoring process

Monitoring activities

The Nature Park Our will monitor the implementation of the actions defined in this Action Plan to see the progress and determine the resulting impact.

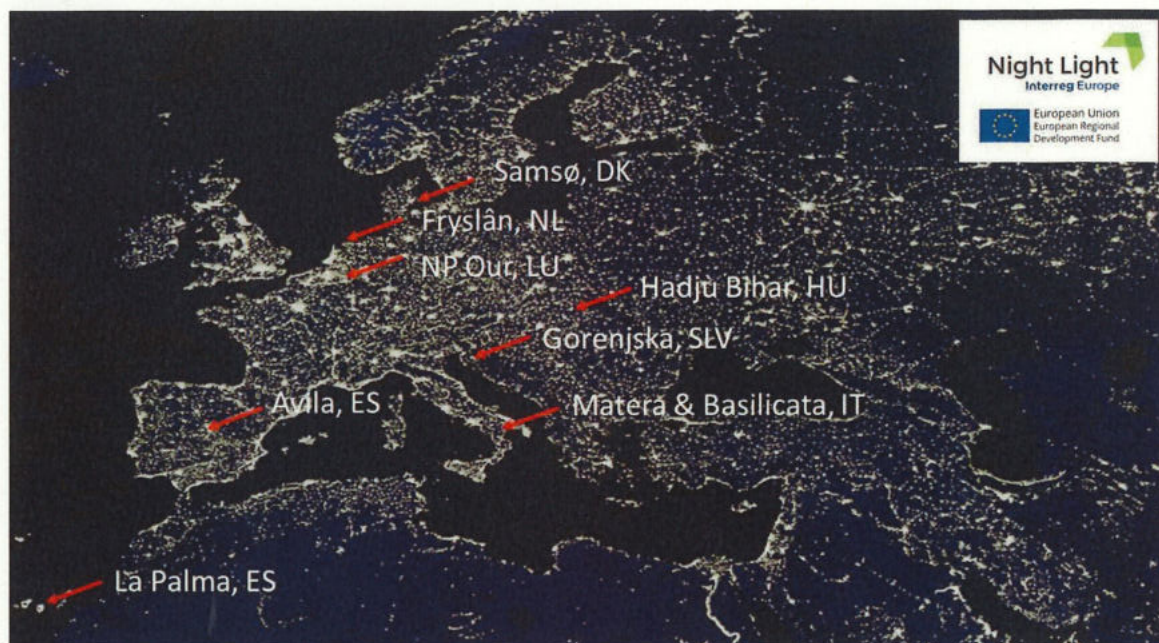
Regional stakeholders and project partners will continue the mutual learning process during the implementation phase of the action plan. NIGHT LIGHT partner regions will be in continuous contact in order to successfully implement the defined actions and adapt the selected lessons learnt to other regions' context.

The Nature Park Our will stay active during the monitoring phase:

- regular check of the state-of-the art of the different actions;
- regular contact and common work will be ensured with involved stakeholders in case of each action;
- relevant events organized within an action will be documented;
- short evaluation report (max. 2 pages) will be compiled including the efforts done and the results achieved, when an action is completed;
- structured informal interviews will be applied with relevant actors (responsible policy makers, municipalities, partner associations, organisations and enterprises, etc.) in order to practically see the progress and to use monitoring information to adjust the implementation of actions;
- final monitoring report (3 pages) will be compiled by the end of Phase 2 including all actions completed, results achieved and impact on policy addressed in the project application form;
- at the end of each year the Nature Park Our will take part in interregional project meeting to discuss all regions' achievements.

NIGHT LIGHT (Improving regional policies to reduce light pollution and protect and valorise dark night skies) project (2017-2021) brings together two significant challenges: the need to preserve dark skies and to utilize the potential they have in a sustainable way.

The project was planned to introduce packages of regional policy measures for each of the partner regions that will result in a lasting reduction of light pollution, the designation of nature areas where dark skies are protected and the introduction of new services and facilities to attract eco-tourism to these dark sky areas.



Partners

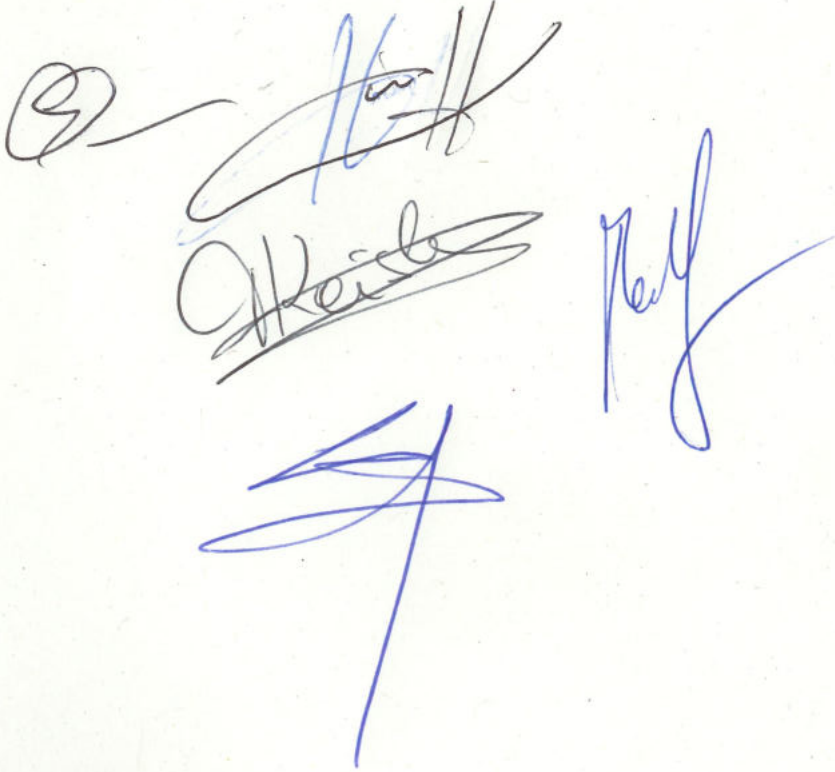
- Province of Fryslân - Lead Partner
- Hajdú-Bihar County Government (HU)
- Avila County Council (ES)
- Nature Park Our (LU)
- Samsø Energy Academy (DK)
- BSC, Business support centre Ltd. (SI)
- Basilicata Region (IT)
- Matera-Basilicata 2019 Foundation (IT)
- Island Government of La Palma (ES)


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For further information about the NIGHT LIGHT project please visit:
<http://www.interregeurope.eu/nightlight>

PART IV – ENDORSEMENT

The Managing Committee of the Nature Park Our:



 Naturpark Our
12, Parc
L-9836 Hosingen
www.naturpark-our.lu

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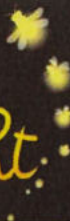


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