

# “Recommendation for Consumption Management and Monitoring System implemented cross-border in the area of public lightening

Recommendation package for savings potential that has already been recognized and incorporated into European policies. EC Regulation 245/2009 sets phasing out requirements for a range of frequently used street lamp types between 2012 and 2017. Also, recommendation package for Cross-border optimal use of public lighting.

**Keywords:** Energy efficiency, renewable energy, public lighting, led technology, monitoring system

## Aims of this recommendation

Document named “Cross border Guide for optimal use of public lightening” will ensure to public utilities as well as local authorities to gain knowledge and experience in the field of usage of public lightening and new ways of saving energy on the cross border level.

## Target group of this recommendation package

The stakeholders are local/regional government, R&D institutions for energy efficiency and renewable energy, small and medium sized enterprises, as well as Development agencies and other support organizations.

## Quick read

- The recommendation package refers to optimal use of public lighting.
- This recommendation package addresses the common challenges of the cross-border municipalities, with support of development and R&D agencies.

## Background to this recommendation package

This guide ensures Ecolnn general objective in the field of eco innovation in terms of energy consumption and decreasing of CO2 emission.

Since municipalities in the region have a problem with large energy consumptions in the field of public lightening and large emission of CO2, after consultations with them we came to a joint conclusion that recommendation should be done. Due to the huge financial costs of maintenances and burgeon on the local budgets, municipalities were not able to provide a better quality life to the citizens and to save energy and green house emission, they came to the idea to implement the Smart city practise in line with EU policies and regulations in small municipalities in the region. In consultation with some relevant R&D institutions in Serbia and Romania we came to the joint project including recommendations and ideas from all relevant institutions in solving this problem.

## Summary of party / parties

Municipalities from Romania and Serbia which are in charge of maintenance and managing of Public lightening standards and deliverable of quality lightening systems

Development Agencies as well as R&D institutions in the field of renewable energy which are in charge for regional development and solutions for models for energy savings and decrease of CO2 emission.

## Summary of eco-solutions/knowledge/technology

Street lighting refurbishment, especially with the availability of LED and other innovative solutions that are economically attractive and offer a relatively low level of complexity, presents a low risk entry point into the provision of EPC services for SMEs. Setting up a new way of illumination in the border area and establishing a joint monitoring system for saving energy, investment in public lighting systems in

two municipalities will upgrade current situation and provide energy savings. Also, installation of remote control will include the collection, use, and processing of data on the work of Public lighting system, and later use of these data for further regulation.

## Summary of proposed collaboration / proposed partnership and knowledge transfer

In order to address the common challenges municipalities decided to jointly in partnership with development and R&D agencies prepare project and to upgrade Public lightening in cross-border area. Furthermore, this cooperation will result with new future projects since municipalities will sign partnership agreement and cooperation agreement in the field of cross-border cooperation in different area of interventions. Also through round tables and seminars transfer of knowledge will be transferred to the other stake holders such as SMEs, public utilities, agricultural producers and NGOs in the region.

## Summary description

In Europe, street lighting consumes a significant amount of electricity: there are more than 56 million street lighting luminaires in operation, with an estimated electricity consumption of 35 TWh. For municipalities with older, inefficient systems, street lighting can account for 30-50% of their total electricity consumption. However, the saving potential is enormous: with current technologies 30-70% energy savings are generally possible. This savings potential has been recognized and incorporated into European policies. EC Regulation 245/2009 sets phasing out requirements for a range of frequently used street lamp types between 2012 and 2017. Phasing out means that these product groups will no longer be placed on the market and will no longer be available for purchase. The very recent market introduction of LED technology for street lighting offers high savings with comparatively short pay-back times. LED technologies have developed very rapidly, especially in



### About the Ecolnn Danube project

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the last few years. Today, with cost reduction potentials of over 50%, LED lighting is already an economically very interesting option for street lighting refurbishment. Moreover, street lighting refurbishment presents a unique opportunity for the uptake of guaranteed energy services in the form of energy performance contracts (EPC):

- Phasing out requirements are placing municipalities under pressure to act: nearly 80 % of all currently used lamps types will not be available after 2017;
- Street lighting refurbishment, especially with the availability of LED and other innovative solutions that are economically attractive and offer a relatively low level of complexity, presents a low risk entry point into the provision of EPC services for SME.

## Summary of eco-knowledge, eco-solution or eco-technology featured in recommendation package

Well-functioning networks, interconnections and interoperability are needed for energy security, diversification and effective energy operation. Regarding energy market organization, cooperation helps to ensure security of supply, to balance supply and demand more effectively and to realize economies of scale on investments. Encourage cooperation opportunities which aims in particular at creating an integrated energy system allowing cross-border exchange of experience, common practices and integration with the EU market. The consumption management and monitoring system is an innovative solution for outdoor lighting. For demand-oriented control and monitoring of individual luminaires up to thousands of points of light. The system facilitates particularly a reduction in power consumption, CO2 emission and light pollution and moreover an optimized maintenance planning.

Using open protocols, scalable and adaptable to third-party components, the consumption management and monitoring system integrates with present and future city systems.

When the street lighting needs to decrease in a certain area or within a certain timespan, the system helps to dim the lights accordingly. If the pedestrian traffic decreases significantly between 1:00 AM and 5:00 AM, then dimming the lights is the right solution. It is considerably reduce energy consumption and CO2 emissions, also reducing light pollution and overall environmental impact. The solution is fitted to dim any street lights, using either magnetic or electronic ballasts, without any extra investments to the grid. After installation of new lightening system with remote control there will be a significant saving in the municipal budget as well as reduce of CO2 emission in atmosphere and decreasing of greenhouse emission.

## Summary of status of knowledge transfer

Development agency started with establishing list of potential partners among relevant stakeholders after the municipality address us with their problem regarding their problem with public lightening system. After several consultations with them and with different potential partners we established a list of partners for the joint project. Since we found the municipality in Romania with similar problem we have established partnership with them and also with other Agency for energy management from Romania. After defining the joint problems and possible solutions we have decided to jointly prepare project for external funds from Interreg IPA CBC Romania-Serbia programme. We knew that we will act in the cross border region with the common solution and the joint project. All of this has happened in January 2016. On July 2017 partners has signed the Subsidy contract as well as Partnership agreement for joint realisation of the project. Since October 2018, several actions were carried out. Partners have organized a numerous round tables and seminars on the

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### About EcoInn Danube recommendation packages

Recommendations in the context of the EcoInn Danube project are useful suggestions and proposals on how to bring eco-solutions into commercial value, particularly through forms of knowledge transfer.

Recommendation packages relate to specific eco-solutions, specific problems or specific areas within technology transfer.

**Partnership guidance** recommendations aim to aid successful interaction between 2 or more specific demand and supply side stakeholders.

**Pitch** recommendations aim to aid successful knowledge transfer and/or commercialisation for a type of stakeholder.

**Events, consultations and interactions** recommendations aim to aid successful eco-knowledge transfer by focusing on a given issue, area or topic related to knowledge transfer.

subject of energy savings and renewable energy sources for different target groups. One municipality has finished all planned works and established management remote control of the entire system on the one side of the border. Other partners from Romania are just starting with works, and by the July 2019 we will have Joint monitoring remote system for public lightening in two countries, "Cross border Guide for optimal use of public lightening", as well as "Action Plan for increasing energy efficiency in public lighting".

## Summary of recommendation(s)

Partners have organized a numerous round tables and seminars on the subject of energy savings and renewable energy sources for different target groups. Once partners finish all planned works and establish management remote control of the entire system on the both side of the border, all collected data will be used for future project in relevant field. After realisation of the project we will have Joint monitoring remote system for public lightening in two countries, and prepared recommendations trough two documents "Cross border Guide for optimal use of public lightening", as well as "Action Plan for increasing energy efficiency in public lighting".

## Recommendations to support knowledge transfer, aid negotiations.

- Recommend signing a partnership agreement in annex to the recommendation.

- Recommend engaging experts in the field of public lightening in order to monitor existing system
- Recommend revision of existing Action plan for increasing energy efficiency in public lightening every 2 years
- Recommend potential future partners for innovative projects in this field
- Recommend involvement of Development agencies in preparing of project applications
- Professional consultation outside of the Eco-INN Danube partners competence
- Recommend and provide financial information via excel tables

## Conclusions of recommendations

This recommendation package has a potential to be spread to other regions and countries and have a large impact on decreasing of CO2 emission in the future. With remote control system installed in numerous municipalities we will have a significant saving in the municipal budgets as well as reduction of CO2 emission in atmosphere and decrease of greenhouse emission.

## Date of recommendation package

July 2018

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