PILOT ACTION – TOWN OF ČAKOVEC

Pilot action factsheet

Pilot action name	"Ring Čakovec " – Town of Čakovec
Implementing organisation	Medjimurje Energy Agency Ltd., Town of Čakovec
Start of construction works	Middle of 4th RP
Delivery date	End of 4th RP

Location

Pilot area in Town of Čakovec (***Image 1****. "Ring Čakovec")* is determinded by roads around the inner Town and includes all kinds of public transport. Total lenght of the corridor is approximately 2.71 kilometeres and it is consisted of six streets:

- Eugen Kvaternik Square Street,
- Toma Masaryk Street,
- Zrinski-Frankopan Street,
- Vukovar Street,
- Vladimir Nazor Street,
- Otokar Keršovani Street.

Area is used for all kinds of activities like walking, jogging, casual sports, having fun, cycling and car driving. Pilot area surrounds the town center, the main square and park and connects all important streets in Town. Nearby is the city market, the majority of high schools and all important institutions and because of that it has high frequency of people and vehicles throught the day.

Image 1.*"Ring Čakovec"*

Strategic value of the selected location

Since “Ring Čakovec” is placed at the inner Town (part of East and part of West Town district), important institutions, main bus/railway station and Town Square are placed nearby. Based on that, it can be stated that “Ring Čakovec” is highly used throughout the day by motor vehicles, pedestrians, cyclist and other users. Emphasis is put on the periods before the beginning and after the school classes ending when large number of younger population uses pedestrian lanes which connect main bus station and high schools in the area. Additionally, several times peer year Town Square is used for music concerts and other events. During such events a large number of motor vehicles and pedestrians use roads, pedestrian lanes and pedestrian crossings where good visibility and safety demands should be met all night. Historical building (old Town castle) which is symbol of the Town is also placed in the middle of the PA.

Relevant stakeholders, stakeholder needs and social aspects

Residents are usually elderly inhabitants and children. Adults are present mostly on evenings and weekends when they are not working. Residents are experiencing issues about public lighting in personal way because they live in pilot area and it affects them in their daily lifes. The safety of the area is very important to them.

Children are usually playing in part of pilot area or just passing through to school. It is very important to have safe streets so they can use it by their own.

Because a lot of high schools nearby pilot area, on the streets there are many young adults who are passing through the pilot area on the way to school. For them, it is very important that pedestrian zone is safe.

Office workers are passing through the pilot area mostly in early morning and late afternoon. In winter time, in this periods of day is usually dark and because of that they want safe and lighted streets and pedestrian zones.

Municipal authorities like civil servants and urban planners are also very important stakeholders in pilot area. They are involved because they are often crucial in deciding the model of public lighting and they also plan the appearance of city look.

The pilot area is half residential and half commercial and because of that shop owners are important stakeholders to. For them, it is crucial that lights are strong enough for everybody to see their shops and weak enough that others can see their advertisements.

Lighting characteristics and technical approach

Current public lighting in Town of Čakovec is switched ON/OFF on signal which is generated from central luxomat. Central luxomat is owned by HEP Elektra Čakovec (*National Energy Company ltd.*). In order to avoid infrastructure works (substations, control boxes, additional energy and communication cable laying), luminaires based on LED technology are planned to be installed on current public lighting pillars. For the same reason, system for control and management based of wireless communication is planned to be implemented in "Ring Čakovec".

New luminaires based on LED technology should have advanced functions for district control and management. Detailed requirements for LED luminaires and System for control and management will be described in project documentation. In order to achieve dynamism of public lighting in "Ring Čakovec", LED luminaires and system for control and management will have possibility of:

a) Control and management of individual luminaire, group of luminaires and all luminaires in real time. Intensity of light level and duration of it will be changed according to operator wishes. Pedestrian crossings and roundabouts will be lit all night.
b) Automatically change of light level according to weather conditions at sections of "Ring Čakovec". Two weather sensors will be placed at "Ring Čakovec" in order to detect heavy rain and/or fog. According to weather conditions and sensors readings (decreased visibility because of rain and fog) level of light will be changed (increase or decrease) according to real condition on the field. New luminaires will be slightly oversized in order to achieve HRN EN 13201 conditions with specific (reduced) power of luminaires while the "reserve" power of luminaire can be used in case of weathering. Optimal regimes will be defined later on when performing the works. Specific power of luminaire will be determined when designing new public lighting.

Both solutions are mutually complementary.

Expected results

It can be stated that new public lighting which is co-funded from the Dynamic Light project will contribute to reducing energy consumption and would increase lighting conditions at the area. Field survey of current state of public lighting has shown that current installed luminaires are overdesigned and outdated. Modernization of public lighting would not only increase lighting conditions in the area but will improve ambient of the Town and safety demands.