

## Introduction

This lighting tool is a template to design lighting according to most efficient criteria from the point of view of investment. It serves a purpose of assistance to SMEs to improve their existing state of lighting units with available investment means in order to achieve the best economic and technical efficiency within the planned period of investment and utilization period.

## Worksheets

The tool contains 3 partially editable worksheets: Calculation tool, Feasibility studies and Fact sheet.

## Meaning of colors in tool



Editable



Uneditable



Editable on another place



Uneditable

## Calculation tool - worksheet

The worksheet is divided into three parts: Current system, Variant 1 and Variant 2. Their interface is the same, except for the Current system, which doesn't have entries for installation, wiring and switchboard costs.

- **General data** - contain general financial data for feasibility studies, the editable cells affect both proposed variants!
- **Table of lighting units** - the information about lighting units used in the Variants/Current system are entered all here.
- **Calculated information** - on this sheet are:
  - the total investment costs,
  - installed power input,
  - annual electricity consumption (with and without losses).
- **Financial indicators** – on this sheet are (Variants only):
  - IRR, NPV, simple payback period, discounted payback period.



---

## Feasibility studies - worksheet

This worksheet contains all of the output information required for a feasibility study and comparison of the two possible variants. All the output data from year 0 (only the investment) to the 21st year after the reconstruction are listed:

- variant expenses,
- original expenses,
- savings,
- financial indicators,
- graphs.

## Fact sheet - worksheet

The Setup worksheet contains data for various lighting units and other technologies. Most of the worksheet is editable and it is advised to check the data for technologies/lighting units due to the possible regional differences.

## Lighting units

This table contains all information about lighting units. All of the rows are editable except the first and the last one. It contains the following columns:

- Lighting unit – name of the type of lighting unit.
- CB – necessary power input of the unit with Classical ballast for non-dimmed operation.
- EB – necessary power input of the unit with Electronic/Electronic-Dimming ballast for non-dimmed operation.
- Life expectancy – average amount of hours of operation until the unit burns out.
- Investment CB – price of the purchase and installation of one unit with the Classical ballast excluding VAT.
- Investment EB – price of the purchase and installation of one unit with the Electronic ballast excluding VAT.
- Investment EL-DIM – price of the purchase and installation of one unit with the Electronic-Dimming ballast excluding VAT.



- Bulb change – price of the purchase and change of the light bulb after it burns out excl.VAT.

### **Installation & utility poles, Wiring, Switchboards**

There are three tables, one for each category. They contain only the name of the technology/service in the first column and a price per one unit/meter.

### **Adding and editing the data in the Fact sheet tables**

To add a new lighting unit/technology/service simply edit one of the XXXXX rows of the table. In case of lighting units be sure to fill out all of the information, otherwise there may be an error in the calculation.

