



# Street Lighting Project – ESCO model of PPP

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# Scope

- ▶ Reconstruction of public lighting in 4 villages in the Municipality of Vrbas based on ESCO model
- ▶ There are 54 transformer stations with metering of energy consumption in them
- ▶ There are 2287 poles connected to transformer stations with the installed 1469 lamps
- ▶ Total installed power of lighting equipment in scope is 237,38 kW
- ▶ These are mainly inefficient old mercury lamps with high electricity consumption
- ▶ Annual energy consumption is 973.246 kWh
- ▶ electricity costs are 48.562 euros and maintenance costs are 11.819 euros

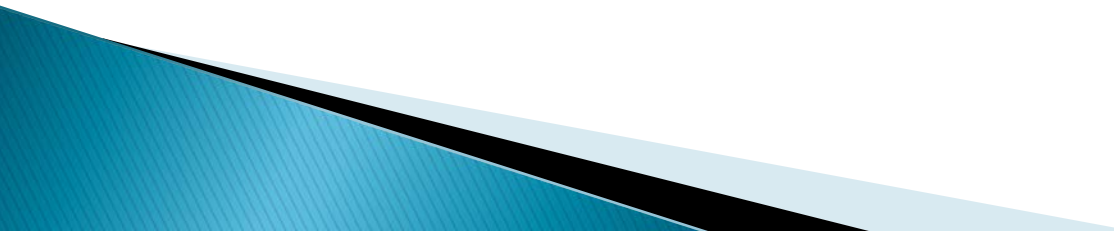
# Steps taken in preparation of the project

- ▶ The cadastre of street lighting was done for the entire territory of the municipality before the beginning of the this project
  - Every pole was recorded with gps device
  - The pictures were taken for every pole and lapm on it
  - Every pole was marked with unique number and recorded in database
  - Characteristics of poles and associated lamps are also recorded in database
  - Belonging of each poles to transformer stations was determined

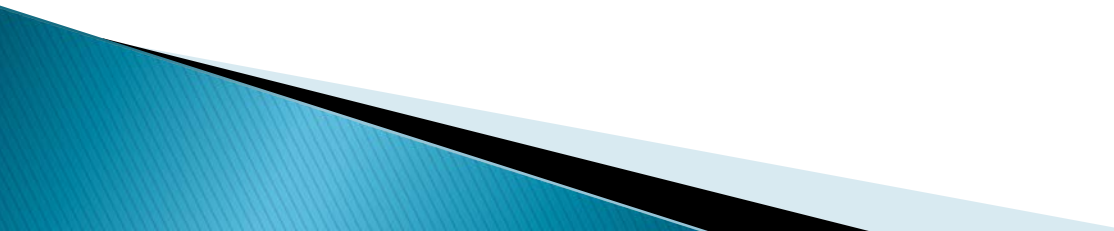
# Steps taken in preparation of the project

- ▶ Energy consumption per transformer stations has been monitored from 2007
- ▶ Last year in one village in the municipality the street lighting was reconstructed with funds from the municipal budget. Simple pay-back period is about 4,5 years.

# Experience with support received from EBRD

- ▶ EBRD supported us in preparation of project proposal for public private partnership which was approved by the public private partnership commission
  - ▶ Also they supported us in preparation of tender documentation and model contract.
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# Key figures about the savings and investment expected

- ▶ Estimated investment 185.000 euros
  - ▶ Expected energy saving is 458.052 kWh while the amount of total cost saving is 27.744 euros
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# Information system for energy management - ISEM

Trafo   Stubovi   Racuni   **Google karta**

Google karta

Map   Satellite

**Naziv trafoa: Lenjinova BB - TS Lenjinova**  
**Broj instalisanih svetiljki: 52**  
**Ukupna instalisana snaga svetiljki: 8075 W**

Google

| Godina      | Mesec     | Potrošnja | Iznos    |
|-------------|-----------|-----------|----------|
| Podešavanja |           |           |          |
| 2012        | Oktobar   | 4020      | 24986,48 |
| 2012        | Septembar | 3300      | 20536,88 |
| 2012        | Novembar  | 4100      | 25480,88 |
| 2012        | Avgust    | 2820      | 17277,64 |
| 2013        | Januar    | 4340      | 26964,08 |
| 2012        | Decembar  | 4100      | 25480,88 |
| 2013        | Februar   | 3620      | 22705,62 |
| 2013        | Maj       | 3060      | 19215,25 |
| 2013        | Mart      | 3580      | 22456,31 |

**Dodaj stub >**

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| #  | Tip stuba | Rbr | Geografska dužina | Geografska širina | Gaus X | Gaus Y | Tip svetiljke          | Komada | Snaga |
|----|-----------|-----|-------------------|-------------------|--------|--------|------------------------|--------|-------|
| 1  | GRS       | 19  | 19,6825901°       | 45,45812109°      | -      | -      | Živina svetiljka (400) | 1      | 400   |
| 2  | Betonski  | 513 | 19,68729219°      | 45,45592107°      | -      | -      | Živina svetiljka (400) | 1      | 400   |
| 3  | GRS       | 30  | 19,68731105°      | 45,45740504°      | -      | -      | Živina svetiljka (400) | 1      | 400   |
| 4  | Betonski  | 510 | 19,68748749°      | 45,45703111°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 5  | Betonski  | 197 | 19,68728506°      | 45,45796813°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 6  | Betonski  | 187 | 19,6873369°       | 45,46128608°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 7  | Betonski  | 186 | 19,68734238°      | 45,46164482°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 8  | Betonski  | 101 | 19,68402587°      | 45,45637972°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 9  | Betonski  | 97  | 19,68561901°      | 45,45615359°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 10 | Drveni    | 40  | 19,69069978°      | 45,45685187°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 11 | GRS       | 32  | 19,68794962°      | 45,45731556°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 12 | Betonski  | 25  | 19,68515976°      | 45,45773059°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 13 | Betonski  | 188 | 19,68733105°      | 45,4609268°       | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 14 | Betonski  | 213 | 19,69057895°      | 45,45830363°      | -      | -      | Živina svetiljka (125) | 1      | 125   |
| 15 | Drveni    | 212 | 19,69099245°      | 45,45849194°      | -      | -      | Živina svetiljka (125) | 1      | 125   |

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