

**TITLE:**

**The slag and ash pond of TPP Kostolac A**

**Country:** Serbia  
**Region:** East of Serbia  
**City:** Požarevac  
**Site typology:** Slag and as pond of TPP

**1. Foreword**

The project aims at utilizing a slag and ash pond of TPP Kostolac A for the building of a photovoltaic plant up to 50 MWe. The proposed facility will be supplied with energy generated from photovoltaic power plant as a renewable resource.

Through the above described development project in the municipal/public utility area, which is at present abandoned, the new landscape will be improved with a positive impact also in the surrounding area.

**2. The context**

The site is located in closely near Požarevac, about 60 km far for the center of Belgrade, the capital of Serbia. Location: 44°44'38" North, 21°10'27" East, Elevation: 71 m a.s.l.

In the past proposed site was used as a slag and ash pond of TPP Kostolac A, which had been constructed in the immediate vicinity of the surface mines, from where it was supplied with coal. It is the thermal power plant with 2 units, one of 100 MW powers which started its production in 1967 and one of 210 MW which started its production in 1980.

In last few years, projects for ash collection, transportation and disposal had been started in the Thermal Power Plant Kostolac A to complain with environmental legislation constraints. The implementation of new technologies will prevent ash scattering and decrease the amount of water for pipeline transport (mixture of water and ash 1:1), which is especially important in terms of environmental protection. It should also be noted that this project will created the technical conditions that the ash can be used for the road construction. These projects are very costly and the implementation of a RES production can mitigate the cost.

The land has a total surface of about 120 hectares (potential area 250 hectares).

**PICTURE 1**



**PICTURE 2**



### 3. The new exploitation of the area

The complex of ash and slag pond of Kostolac A is suitable for construction of photovoltaic power plant and wind farm (preliminary measurements show significant wind potentials in the region). Moreover, in the Kostolac area there are potentials for utilization of geothermal energy. Mineral and thermal water up to 50 °C can be used as a therapeutic (spa purposes) or for heating greenhouses as well as for energy purposes (district heating).

According to the provisions of the Spatial Plan of the Area of Lignite Exploitation in the Kostolac Basin the ash and slag pond of TPP “Kostolac A” is planned for technical and biological remediation. This terrain is suitable for construction of renewable energy facility especially for wind generators, photovoltaic power plants, and geothermal utilisation.

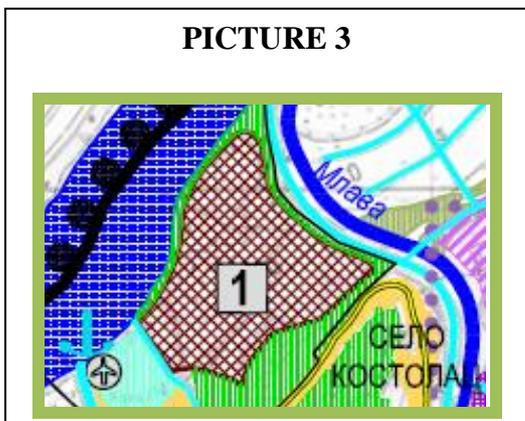
### 4. Description of the investment

The complex of ash and slag pond of TPP Kostolac A is suitable for construction of photovoltaic power plant.

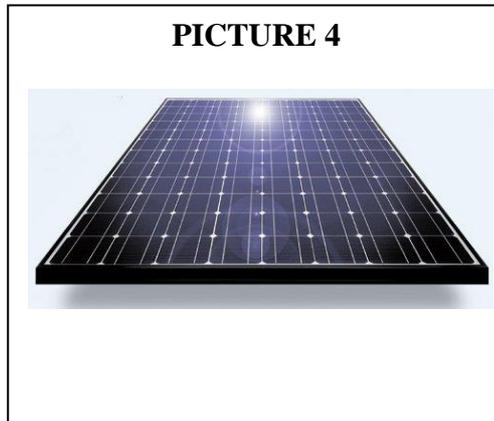
Realistic estimations of the production potential of the site are as follows:

- PV up to 50 MWe (crystalline silicon) - I Phase
  - ✓ 58,700 MWh/y (Fixed system: inclination=34°, orientation=0°);
  - ✓ 77,800 MWh/y (Vertical axis tracking system inclination=54°);
  - ✓ 78,000 MWh/y (Inclined axis tracking system inclination=36°);
  - ✓ 79,600 MWh/y (2-axis tracking system).

**PICTURE 3**



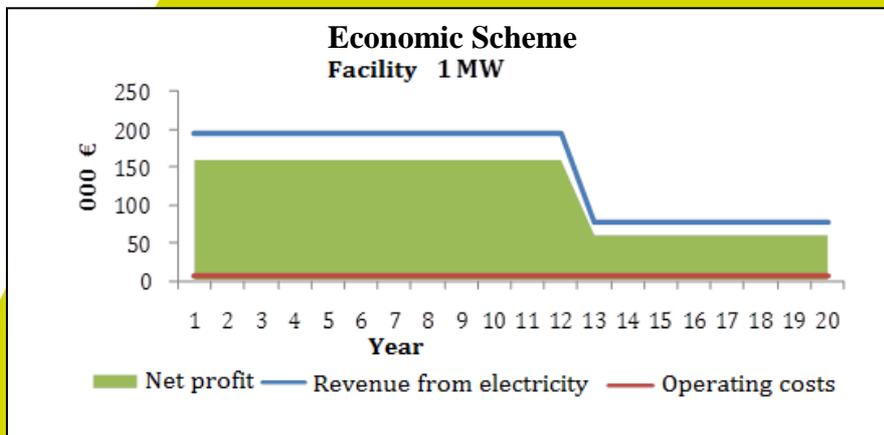
**PICTURE 4**



## 5. Management and economic considerations

The estimates of solar electricity generation are as follows:

- Capacity of 1 MW;
- Installation Power Cost - 1,400 €/kW;
- Electricity production - 1,200 MWh/year;
- Total investment cost for PV plant of 50 MW - 70,000,000 €;
- Lifetime - 25 years;
- Feed in Tariff - 16,25 €/kWh;
- Payback period – 12.



## 6. Conclusions

The complex of ash and slag pond of TPP- Kostolac A is suitable for construction of photovoltaic power plant of 50 MWe of installed capacities in first phase.