

TITLE:

The slag and ash pond of TPP Nikola Tesla B

Country: Serbia
Region: Suburb of Belgrade
City: Belgrade
Site typology: Slag and as pond of TPP

1. Foreword

The project aims at utilizing a slag and ash pond of TPP Nikola Tesla B for the building of a photovoltaic plant up to 15 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 Obrenovac, about 40 km far for the center of Belgrade, the capital of Serbia. Location: 44°37'51" North, 20°3'17" East, Elevation: 82 m a.s.l.

In the past proposed site was used as a slag and ash pond of TPP Nikola Tesla B, the second biggest thermal power plant in Serbia, consisting of two units with total installed power capacities of 1,240 MW each.

Although at the dump site, thanks to the reduced amount of water for ash transport, since February 2011, overflow and drainage waste waters have not been discharged into the Vukicevica stream any more, the maintenance and restoration of the site is very costly and the implementation of a RES production can mitigate the cost.

The land has a total surface of about 6 km² and around 40 hectares are now available for construction of renewable facility (Part A of the dump site).

PICTURE 1



PICTURE 2



3. The new exploitation of the area

According to the provisions of the Draft of Spatial Plan of the City Municipality of Obrenovac ash and slag pond of TPP Nikola Tesla B is classified as a complex suitable for renewable energy facility construction. According to the mentioned spatial plan, it is possible to request a construction permit on the basis of needed project documentation has to be prepared.

From several years the municipality is looking for ideas for its exploitation and rehabilitation of the area, although the land was never put on a bid. The municipality welcomes and promotes its exploitation and it is ready to provide incentives for its development.

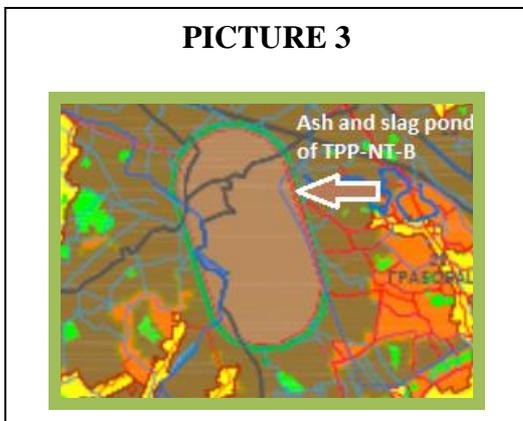
The land in the area should be used for solar power plant.

4. Description of the investment

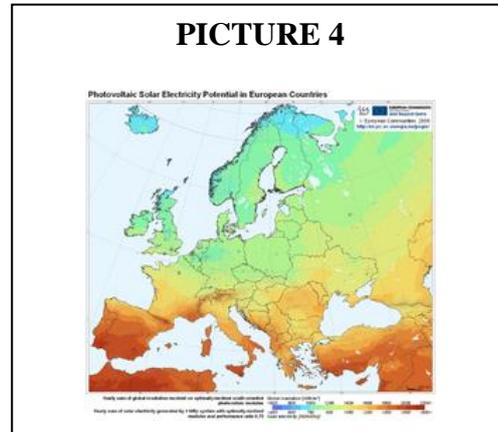
The complex of ash and slag pond of TPP-NT-B is suitable for construction of photovoltaic power plant. Realistic estimations of the production potential of the site are as follows:

- PV up to 15 MWe (crystalline silicon) - I Phase
 - ✓ 17,700 MWh/y (Fixed system: inclination=34°, orientation=0°);
 - ✓ 23,300 MWh/y (Vertical axis tracking system inclination=54°);
 - ✓ 23,300 MWh/y (Inclined *axis* tracking system inclination=36°);
 - ✓ 23,800 MWh/y (2-axis tracking system).

PICTURE 3



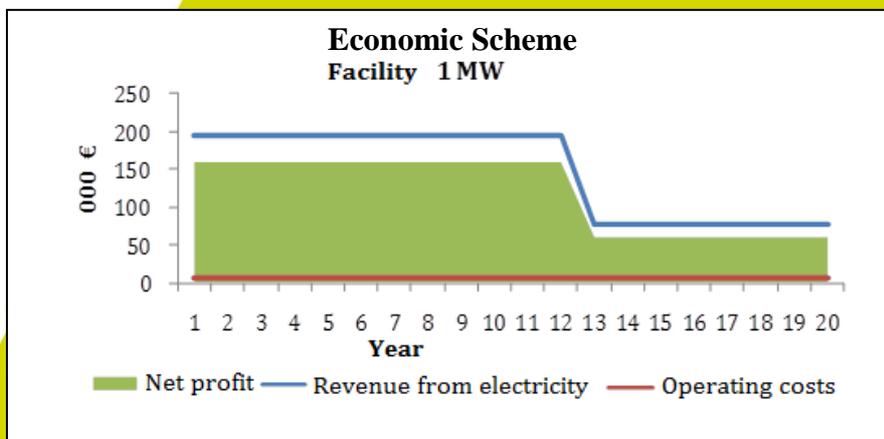
PICTURE 4



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 15 MW - 21,000,000 €;
- Lifetime - 25 years
- Feed in Tariff - 16,25 €/kWh
- Payback period - 12



6. Conclusions

The complex of ash and slag pond of TPP-NT-A is suitable for construction of photovoltaic power plant of 15 MWe of installed capacities in first phase and much bigger in next phase.