1. **TITLE OF THE PROJECT**

**HYDROPOWER PLANTS ON THE MIDDLE DRINA**

Middle Drina is part of the Drina River, which is located on the state border between Serbia and Bosnia and Herzegovina (Republic of Srpska). Downstream boundary of this section is immediately upstream of the existing HPP Zvornik. Upstream boundary of this section is the existing HPP Bajina Bašta. Three hydropower plants are planned to be built: HPP Rogačica, HPP Tegare and HPP Dubravica.

The system of the three hydropower plants would be located between the existing HPP Bajina Bašta (upstream) and HPP Zvornik (downstream), so that this system of the respective three hydropower plants can be treated as part of another larger system of hydropower plants on the Drina River. According to their features, HPP Rogačica, HPP Tegare and HPP Dubravica are run-off-river power plants, which use partially smoothed flow rate in the upstream reservoirs. Its reservoirs can perform only daily flow control.

The hydropower potential is divided in the ratio of 50: 50 with the Republic of Serbia.

2. **SECTOR**

   Energy

3. **LOCATION**

The location of the hydropower plants with reservoirs encompasses parts of watercourses from Bajina Bašta to Dubravice. Places are Rogačica, Tegare and Dubravica.

Territorially, they occupy the municipalities of Bratunac (Republic of Srpska), Ljubovija (Serbia) and Bajina Bašta (Serbia).
4. **BRIEF DESCRIPTION OF THE PROJECT**

**HPP ROGAČICA**

Installed capacity 113.28 MW.

Average annual generation 413.42 GWh.

**Parameters:**

- Type of the dam: concrete gravity dam
- Crest elevation: 223 masl
- Crest length: 401 m
- Construction height of the dam: 42 m
- Spillway: 8 fields
- Elevation of the normal reservoir backwater: 220 masl
- Average annual flow: 330.2 m³/s
- Average annual flow: 60.5 m³/s
- Type of the plant: dam toe power house, run-off-river
- Elevation of the tail water: 201.9 masl
- Installed flow of the plant: 800 m³/s
- Head: 17.39 m
- Type of the generation unit: pipe
- Number of generation units: 4

**HPP TEGARE**

Installed capacity 120.94 MW.

Average annual generation 448.05 GWh.

**Parameters:**

- Type of the dam: concrete gravity dam
- Crest elevation: 203 masl
- Crest length: 649 m
- Construction height of the dam: 44.3 m
- Spillway: 8 fields
- Elevation of the normal reservoir backwater: 200 masl
- Average annual flow: 333.5 m³/s
- Average annual flow: 61.6 m³/s
- Type of the plant: dam toe power house, run-off-river
- Elevation of the tail water: 180.5 mnm
- Installed flow of the plant: 800 m³/s
- Head: 18.68 m
- Type of the generation unit: pipe
- Number of generation units: 4
HPP DUBRAVICA

Installed capacity 87.23 MW.

Average annual generation 335.48 GWh.

**Parameters:**
- Type of the dam: concrete gravity dam
- Crest elevation: 178 masl
- Crest length: 348 m
- Construction height of the dam: 39 m
- Spillway: 8 fields
- Elevation of the normal reservoir backwater: 175 masl
- Average annual flow: 340.4 m$^3$/s
- Guaranteed flow: 63.8 m$^3$/s
- Type of the plant: dam toe power house, run-off-river
- Elevation of the tail water: 160.4 masl
- Installed flow of the plant: 800 m$^3$/s
- Head: 13.71 m
- Type of the generation unit: pipe
- Number of generation units: 4

5. **PROJECT DETAILS**

The existing technical solution of the hydropower plant on the Middle Drina, as well as the Preliminary Design with preliminary feasibility study is prepared in 2010 by the Institute for Water Management Jaroslav Cerni from Belgrade. In the Study, selected hydropower plants are analyzed individually and as a system. HPP Tegare and HPP Rogačica have very good economic performance. HPP Dubravica as an independent hydropower plant has slightly weaker parameters from the two aforementioned hydropower plants. However, since it is potentially the largest hydropower system in the region, it has the acceptable economic and social parameters.

**REASONS TO INVEST IN THE PROJECT**

The construction of HPS Middle Drina is a development project of the Republic of Srpska and Serbia, which would primarily affect the energy independence and market potential of both states, and contribute to economic activity improvement, increase in employment, increase in domestic product and gross national income. Then to launch economic activity, increased employment, social product and national income. On the other hand, the construction of these hydropower plants provides the additional energy capacity, enables the electricity generation from domestic, renewable resources, in addition to fulfilling the high standards of environmental protection, which together provide sustainable development.

All plants are listed in spatial plans of the Republic of Srpska and Serbia.
6. **PROJECT FINANCING**
According to the current estimates, the total investment for the construction of the hydropower plants amounts to:

- HPP Rogačica: EUR 243.26 million
- HPP Tegare: EUR 281.94 million
- HPP Dubravica: EUR 344.93 million

The total estimated investment for HPS Middle Drina amounts to EUR 870.13 million.

**PLANNED SOURCES OF FINANCING**
Energy Development Strategy of the Republic of Srpska envisages different models of financing in the energy sector:
- public financing - means the dominant role of the public sector, and financing based on existing capital accumulation of Mixed Holding and its subsidiaries combined with the loans;
- mixed financing - public-private partnership and
- private financing- investments of private companies due to limited financial possibilities of the public sector and aiming at the market liberalization.

The governments of the Republic of Srpska and Serbia shall make a final decision on modalities of implementation and financing of the hydropower plants on Middle Drina.

7. **LOCATION OF THE PROJECT IMPLEMENTATION**
The partition profile of HPP Rogačica is located on the river chainage 173 + 250 km from the mouth of the Drina River and the Sava River, along the regional road Zvornik - Bajina Bašta (Serbia).

The planned location of Tegare dam is located on the river chainage 148 + 750 km from the Sava River mouth along the regional road Zvornik - Bajina Bašta (Serbia).

The profile of HPP Dubravica is located on the river chainage at 118 + 700 km of the Sava River mouth along the regional road Zvornik - Bajina Bašta (Serbia).

8. **HAVE THE ACTIVITIES IN PROJECT IMPLEMENTATION BEEN ALREADY INITIATED?**
Technical documentation at the level of the Preliminary Design is prepared.

Since it is the border part of the Drina River between the Republic of Srpska and Serbia, both countries share the same hydropower potential of the Middle Drina, so the Power Utility of the Republic of Srpska and Power Utility of Serbia have jointly invested in the existing technical documentation.
9. **APPLICANT AND CONTACT DETAILS**

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