CONSIDERATIONS ON INTEGRATE WATER RESOURCE MANAGEMENT OF HYDROPOWER POTENTIAL MOTRU – JIU

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Abstract: One of the global problems facing humanity at the beginning of the third millennium is the lack of water and the degradation of water quality. Very important experience of hydropower potential is analyzing designers who can imagine different ways and can achieve comparative studies of their then choosing the one most suitable. Any section of the river has a potential energy that must be evaluated in order to obtain large amounts of electricity.

KEY WORDS: water resource, hydropower plants, energy, potential , electricity.

1. INTRODUCTION

It is necessary to make an assessment of hydropower potential to know what resources are available, spread over different areas which will allow choosing the order in which to achieve the best facilities in terms of energy and cost planning. One of the global problems facing humanity at the beginning of the third millennium is the lack of water and the degradation of water quality. Also, the achievement of sustainable development objectives depends to a large extent on the integrated management of water resources, water being an essential factor for the existence of life and for the development of human society.

In general, the study of hydropower potential of watercourses seeks quantitative assessment of energy resources, their geographical distribution, technical and economic possibilities of improvement hydroelectric and work flow regularization, hydropower exploitation correlation with other uses of the waters.

2. EVALUATION OF THE POTENTIAL HYDROPOWER

Note that while nationally there is a tendency to increase the value and theoretical hydropower potential harnessed. This on the one hand due specify basic data, hydrological and topographical, and on the other technical advances in general and especially the arrangement of hydroelectric plants, which created conditions for the use of a potentially considered uneconomical or unused befor

For writing these quantities are considered water flow between two points A and B located in a difference of H, as in figure 1.

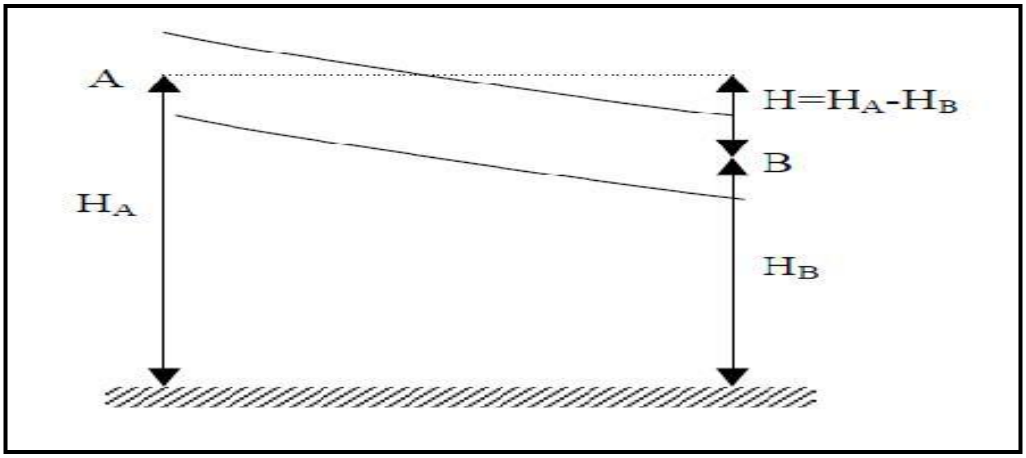

Figure 1. Hydropower potential

HA- initial height reference point;
HB -height of the end point;
H- relative difference in level between the two points - the fall of water.

To calculate the potential water Jiu- Motru were delineated characteristic points:
• points of confluence with the major tributaries;
• points where the slope changes occur to watercourses;
• Location of abstraction possible points and stations.

According to Romanian Waters hydrographic parameters Jiu- Motru - sector can be found in table 1.

Table 1 Data hydrographic network

Nr	River	N umber of areas inventoried	**S (km^2)**	**L (km)**	**P (kW)**
1	Jiu	56	948	4,.38	25.832
2	Motru	23	130	1, 35	43.001

Cerna-Motru with conversion potential evaluation is possible if you know hydrometric parameters.

In table 2 are passed these parameters according to the Romanian Watter,

Table 2. Parameters hydrometric

P (%)	25	20	10	5	0,1
Q (m^3/s)	23	43	56	146	422
H (m)	274	263	263	263	263

Potential harnessed is the part of the theoretical potential that can be harnessed by converting hydraulic energy into electrical watercourses through hydropower. Evaluation of its mathematical relationship is one

Ham Pot.am = γ Q [W] (1)
Ham - natural fall of the stream, m;
Q- average flow assured, m3 / s;
γ- 9810 N / m3.
To calculate the rates provided with conversion potential:

Q = 43 m3 / s =>
Pot.am = 9810x43x263 = 97 [MW]Q = 56 m3 / s =>
Pot.am = 9810x56x263 = 144 [MW]

Q = 75 m3 / s =>
Pot.am = 9810x75x263 = 193 [MW]
Q = 146 m3 / s =>
Pot.am = 9810x146x263 = 377 [MW]
Q = 422 m3 / s =>
Pam = 9810x422x263 = 1088 [MW] (3)

3.CONCLUSION

Micro-hydropower plants may be independent power generation units
to be part of the private sector and able to compete with state and local producers
the existing (existing) electricity in the area.
The main purpose of these private producers would be to internalize a
the renewable resources offered especially by the small and very small water courses, which do not are included in the large hydropower development schemes.
Generally, micro-hydropower plants are local hydropower plants,
the impact of the impact on the environment being relatively low. The study on the management of such a system starts from the development of the natural water course in order to optimize social and economic, without degrading the ecosystem. The natural water course established between two important confluence points is analyzed in order to quantify the economic gain and the

minimum ecological loss, as well as their comparison.

The use of the potential of the water source is closely linked to the economic and social development of society through three major current problems:

- energy problem by using hydraulic energy;
- the problem of nutrition through the development of the irrigation system;
- the problem of the environment, water being one of the most threatened environmental factors of pollution and depletion.

Overall assessment of impact is characterized by two dominant issues:

positive one positive aspect is relatively easily treated in the sense that it can be estimated on the basis of economic and ecological criteria generally accepted that hydropower is the cheapest and least polluting of all forms of conventional energy.

negative, implying that in the end to judge which of them is predominantly negative impact on agriculture occurs in areas where the groundwater cant occur due to increased flood water.

4. REFERENCES

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