Global Forum on Sustainable Energy (GFSE)

Complex Using of Renewable Energy Sources wind, sun and water per engine

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Summary

The design of the presented facility was created based on the pontoon micro power station – winner of the STEP(CRDF)-2005,2006 program. **National winners of ENERGY GLOBE Award 2007 project: *"Complex using of Energy Renewable Sources, wind ,sun and water per engine***

Our power station set with 135 projects which were chosen from 837 projects was represented for exhibition ~Transnational Brokerage Event on Energy Efficiency and Renewable Sourcecof Energy" (Napoli, Italy) , 2009

The significance and urgency of the design under conditions of the existing energy crisis consist in its multifunctional and rational utilization, including farmer households' irrigation, grain milling, operation of fruit, citruses, berries, including grapes juice-making facilities.

Business Problems

•The current relations with our northern neighbor provide no chance of making long-term and secured agreements. In addition, the reserve of organic energy carriers is liable to depletion – a global challenge.

•In order to cope with the cheap energy supply in Georgia and to create own sustainable power system the following two ways should be pursued: development of power generation by means of hydropower and renewable energy sources. At the same time, the existing energy tariff is very burdensome for local population.

Market

•There are 20 thousand rivers in Georgia. The erection of one micro power plant on each river would handle the problem of energy supply in the republic.

•The generated power would be marketed both from the company stock as well as through intermediaries, in the role of which we perceive local authorities, international organizations and charity institutions.

•UNDP has got interested in our product and ordered two plants for introduction in the Oni mountain region.

•Our main customers are the consumers living near rivers and channels, who are attracted by low prices of the plant and its maintenance simplicity.

Technical Advantages

•The positioning of a wheel wing at the angle and slope ensuring maximum loading with water in the shortest time period.

•The two-sided axial loading of the wheel balancing the torque.

•The maximum loading with renewable energy facilities to secure the highest possible output of energy.

•The companies which will produce our plant must have technological equipment complies with the production requirement under the presented design/project.

•It is advisable that the low-rotation generators that are used in the proposed units be manufactured in Georgia.

Competition

•Water wheels are one of the alternatives of our design, although under conditions of equal risks, the price of a hydroturbine of the same power (USD 13,000) can hardly compete with our plant (USD 10,000).

•In addition, the new design proposed by us envisages the equipping of the plant with a water wheel, which is protected under patent.

Customers

•Our main customers are the consumers living near rivers and channels being attracted by low prices and simplicity of maintenance.

•In relations with the customers, we engage with presentation of the product, showing off its main parameters and making of a contract.

•We offer our customer the installation of the plant and the provision of warranty service for some period, as non-financial benefits. A possible financial benefit might be sale of the plant at cost of the manufacturer or barter.

•The plant-generated power, with daily average consumption of 3 to 4 kW per consumer, will satisfy three families; accordingly, the plant price shall be equally paid by them.

Promotion of Sales

•Relations with potential buyers are maintained both directly and through the municipal authorities.

•Advertising prospectuses, participation of a third party, mass media are employed in such relations. The participation in conferences and in all the events, where our design/project could be tested plays a great role.

•A summary of our design/project has been forwarded to an international REC-Caucasus conference.

Team and Decision-making

•The Centre Of Innovative Development of Enterprises has been involved with the promotion and introduction of Georgian patents .

•The team of our Centre used to work as a manager of the company “TBILENENERGOPERSPEKTIVA,” the fact evidencing of his competence.

•In the current project our team representative will participate together with the company personnel in any work related to the project.

•Intellectual property resulting from any development is equally allocated between both parties.

Finances

•The requested USD 65,000 will be completely spent on the producing of the plant.

•The average tentative price of the product is USD 10,000, the maximum gain 20 to 25 percent.

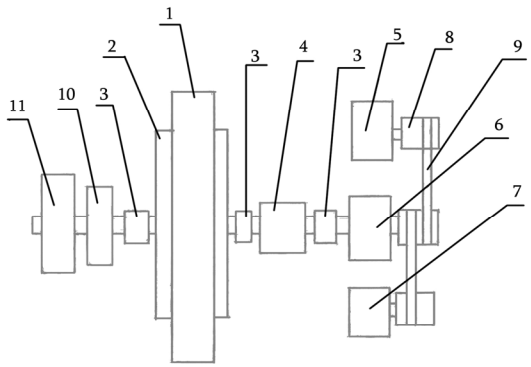
Main customers – regional population. Before putting into full-scale production, we shall be working on a contractual basis, under individual orders.

Roads Map

•The prospective work has been carried out in mountainous regions of our country - Kakheti, Kvemo Kartli, Racha and also in any regions of other countries.

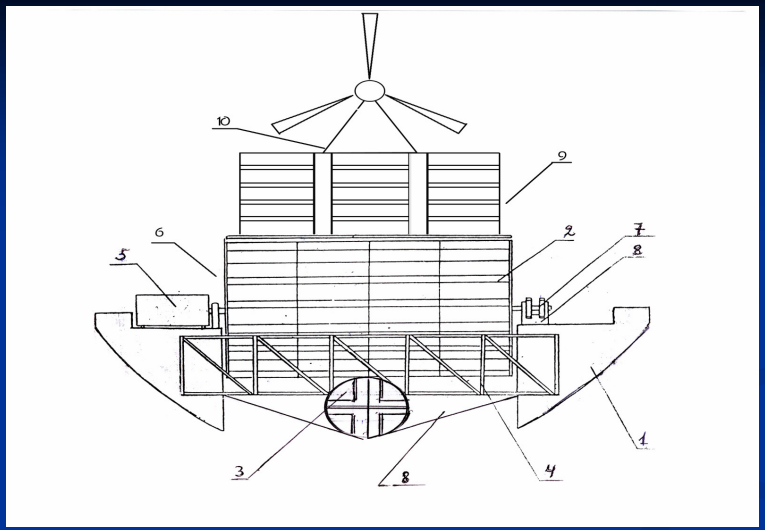
•The designing of the new plant will be finished in a year; by that time we shall be aware of required technology supplements, the product's final price, the actual market situation and customers

დანადგარის კინემატიკური სქემა

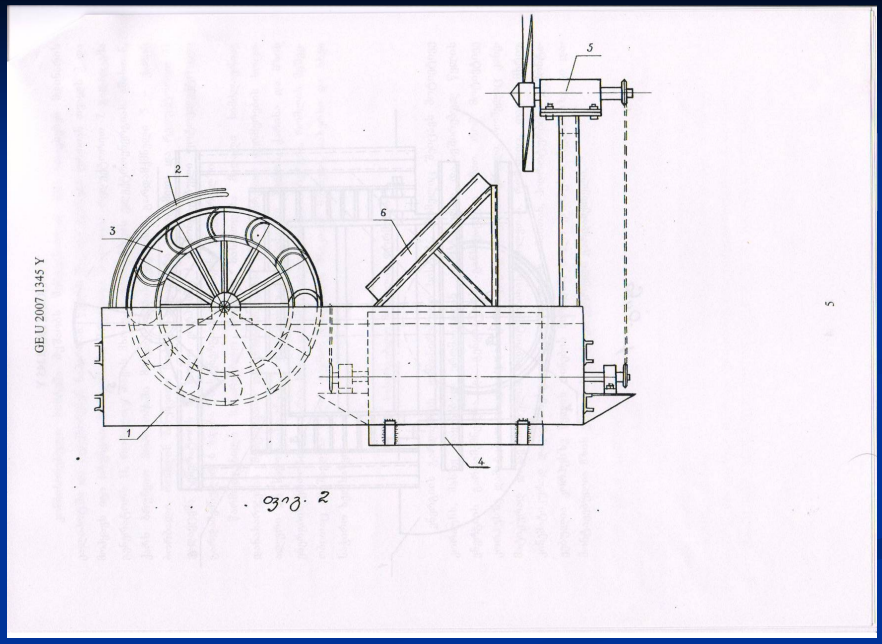


1. ბორბალი; 2. ტივტივა; 3. ჭურო; 4. სიჩქარის კოლოფი; 5. ტუმბო; 6. საფქვავი; 7. საწნეხი; 8. შკივი; 9. ღვედი; 10. რედუქტორი; 11. გენერატორი;

შენიშვნა: ასევე შესაძლებელია აკუმულატორის და საქსოვი დაზგის მიერთება.



1.Ponton 2. Wheel; 3. Hidroturbin
4. **Protecting railings.** 5. Genarator 6. Cover of wheel. 7. Pulley. 8. Coupling. 9. Sun fotopanel. 10. Wind Generator.



Thank you for your attention!