

ENVIRONMENTALLY SOUND HYDROELECTRIC POWER PLANTS

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Rivers running on their own alluvial cones form inland deltas, with numerous branches and islands, and large floodplains with wetland ecosystems. Alluvial cones usually accommodate large potable water stocks. These river sections generally cause considerable shipping problems. The "classical" hydropower plant construction elements i.e., transverse dams, reservoirs, river canalisation, diversion of the majority of the water to artificial canals, series of drops in the original river bed, etc., generally cause unacceptable changes in the environment and especially in the wetland ecosystems. My innovation and proposal is a new approach: planning hydroelectric power plant systems with environmentalist principles; planning for maximisation of nature protection and conservation instead of maximisation of electric power production; planning hydroelectric power projects without reservoirs, transverse dams, and cascades to the floodplain

The environmentally sound hydroelectric power project for rivers running on alluvial cones is a self-regulating system, which can produce electricity without using the potential energy of the entire river, but only of certain "free" parts, which are not necessary for transporting the sediment. It can maintain the original dynamics of water level changes in the main river bed and in the tributaries, as well as the original dynamics of groundwater level changes below the floodplains and neighbouring terrains, because it will involve the construction of transverse dams only in the insulated shipping canals and not in the main river bed. It can save and restore the original wetland ecosystems and can save the quality of groundwater stocks in the alluvial cone. Moreover, it can support the normal shipping route for the whole year.

Tibor Harosi has a degree in Chemical Engineering from Budapest Technical University. He has worked as a freelance computer consultant and programmer and, also, as a freelance engineer dealing with energy related problems. He was among the initiators of the Hungarian Danube Movement and, in 1992, he organised the Renewable Energy Club, an association of experts and activists who co-operate with members of other groups in the search for possibilities of increased utilisation of renewable energy sources. He has worked on several environmental assessment projects, including the environmental assessment of the Gabčíkovo/Bos hydropower plant construction works.