Wentainer

Wentainer is an inland water transportation system. It operates by applying force on an overhead rail to move a convoy of boats connected in a straight line. Wentainer aims at transportation of goods in a more economically.

As of now for the transportation of cargo, propeller ship having least cost is used. Wentainer intents to make cargo transportation easier using lesser energy.Inland water bodies where the pass ways are very shallow and less wide Wentainer can transport more cargo while also using solar energy, thus reducing the pollution.

In addition to cargo transportation water supply can be made possible for agricultural & commercial usage, production of solar energy and for utilization accommodation facilities (similar to that off……).All these usages can be made parallelly at the same time.// These can also be included as additional advantages of the project.

Mode of operation and working principle

From ancient time in kerala the method transportation of cargo in inland water was “uun-vallam”, where a strong bamboo is used to propel the boat by applying human force on the water bed. Using single man power more than 10 Ton weight can be moved at a speed greater than 5km/h by this method. In case of a conventional rowboat only less than 1 Ton weight only can be moved/transported through the water. That is using a known force 10 times the weight can be transported by method of “uun-vallam” when compared to that of a conventional rowboat.

Both rowboat and “uun-vellam” needs only a small amount of force to overcome the fluid friction, but due to the difference in method of applying the force loss of force occurs only in case of rowboat. While by using ”uun-vellam” this loss can be made good.

Newton’s third law states “Every action has an equal and opposite reaction” .According to this for an object to move in one direction a force has to be applied in the opposite direction but if the surface on which the force acts upon is not strong enough then the reaction will be weak as a part of the applied force will be used for the deformation of the surface. As a result there occurs a requirement to compensate this loss of force.

Since “uun-vallam” applies a force on a strong surface (bed of the water body) it can move while applying lesser energy when compared to a row boat.

Similar to “uun-vallam” a system called horse drawn canal system is used in England wherein the force is applied by horse on a road along the bank of the waterway whereas the freight is floating in the water weighing greater than 30 ton. The same horse can only carry a load less than 2 Ton and move on road. This system utilizes the advantage of applying force to a strong surface and lower value of friction as the freight is floating in the water.

Similar to the systems above Wentainer is a system which uses an overhead rail to apply force and utilizes the lower fluid friction of the freight which is floating in the water. Thus Wentainer can move cargo with a lower energy consumption.

Cargo transportation is the main aim of “Wentainer” . Wentainer is a convoy of small boats in a straight line that can transport a container or equally weighing freight. With the help of 3 rail system the movement in the water is made with ease. The force required for the working is applied on a “Puller Rail” situated up top and with the help of two “Guide Rail” situated on the two sides the navigation is done .The engine is placed in a boat which leads the convoy of boats in a straight line that provides sufficient force to move the Wentainer with the electricity provided .

This type of arrangement of the rails and boats aide in transportation of more cargo in a waterway that is shallow and with ease. Since wentainer applies force on rail rather than in water like a ship, energy saved is more when compared to that of a ship.

The Wentainer mainly works with the help of the electricity produced by the solar panels which is integrated into the frame holding the rail system. Thus directly or indirectly reducing the pollution caused by the transportation.

As the solar panels are laid along the complete rail system, we are able to generate a huge amount of electricity out of which only a small fraction is required for the working of the wentainer and the rest can be supplied to the villages that are situated near to the wentainer system or to the grid, which is another advantage of this system. As we are covering the canals with solar panels it also helps in reducing the radiation that befalls on the water as a result it reduces the evaporation rate and thus saving water. In states like Gujarat, Andra pradesh, Punjab there already exists such structure along the canals that facilitate solar panels providing energy and reducing the evaporation rate.

The system can perform using very less width and depth (6m width x 2m water draftx3m air draft) while not polluting, thus it is possible for accommodation above the structure (similar to that of houses on rivers in countries like Thailand) for industrial and domestic dwelling.

Other than transportation of cargo Wenatiner also makes it possible to supply water for industrial and commercial purposes. During the industrial revolution in countries like England many canals were engineered to aide in both transportation of goods and exchange of water.

By acquiring of land and constructing Wentainer freight transportation can be done very much cheaper than that of conventional boat while reducing pollution, also making it possible for generation of large-scale solar energy and for