

## **The VORTEC micro hydro power plant**

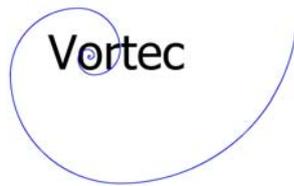
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## **The VORTEC micro hydro power plant**



The VORTEC hydro power plant is a new way of harvesting the enormous powers in rivers.

The VORTEC technology is based on a different principle than conventional hydro power systems.

It uses the rotational motion of the water, which occurs naturally in a vortex, to generate power.

As compared to conventional hydro power systems, which utilize pressurized Water usually created by high drops.

This leads to certain advantages of the VORTEC system especially in low head (low drop) situations.

- The VORTEC can be used with a minimum head of 0.5m, conventional hydro power has to have at least 2-5m head
- The VORTEC doesn't need a dam, only so called directing walls, which means construction is much less demanding.
- The VORTEC is designed to run on the minimum amount of available flowing water. That means there is never stagnant water created. The water comes out as it goes in.

# Vortec

- The VORTEC improves water quality instead of destroying it's microscopic structure. Biodiversity increased 2 fold downriver of the prototype in Austria. Fish pass through it unharmed. The VORTEC technology is used for fish ponds and natural pools to improve water quality even without producing electricity.



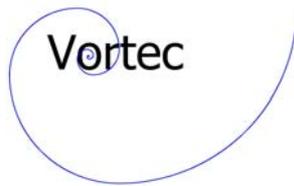
- The VORTEC turbine doesn't need to withstand the one sided punctual wearing like the turbines in conventional hydro power plants. Thus production and maintenance of the turbine is only a fraction of the usual costs and it can be done locally by any better machine shop.



- The VORTEC systems can be cascaded when there is only a little amount of water available to create maximum electrical output.
- The VORTEC can produce from 2KW to 500KW constant usable electrical power, depending on the flow of water available.



As conclusion one can say that if a river is available the VORTEC micro hydro power plant is probably one of the cheapest and most environmentally friendly solution compared to other alternative energy sources.



The electrical output derives from the amount of water (cubicmeter/second) and the height of the drop inside the vortex (head).

<u>Head in meter</u>	<u>amount in cubicmeter/second</u>	<u>electrical output in KW</u>
1	1	5
1	2	10
1	5	25
1	10	50
1.5	1	7.5
1.5	2	15
1.5	10	75
1.5	15	112.5
2	2	10
2	5	50
2	10	100
2	15	150
2	20	200
2.5	5	62.5
2.5	10	125
2.5	20	250
2.5	30	375
3	5	75
3	10	150
3	20	300
3	30	450
3	40	600