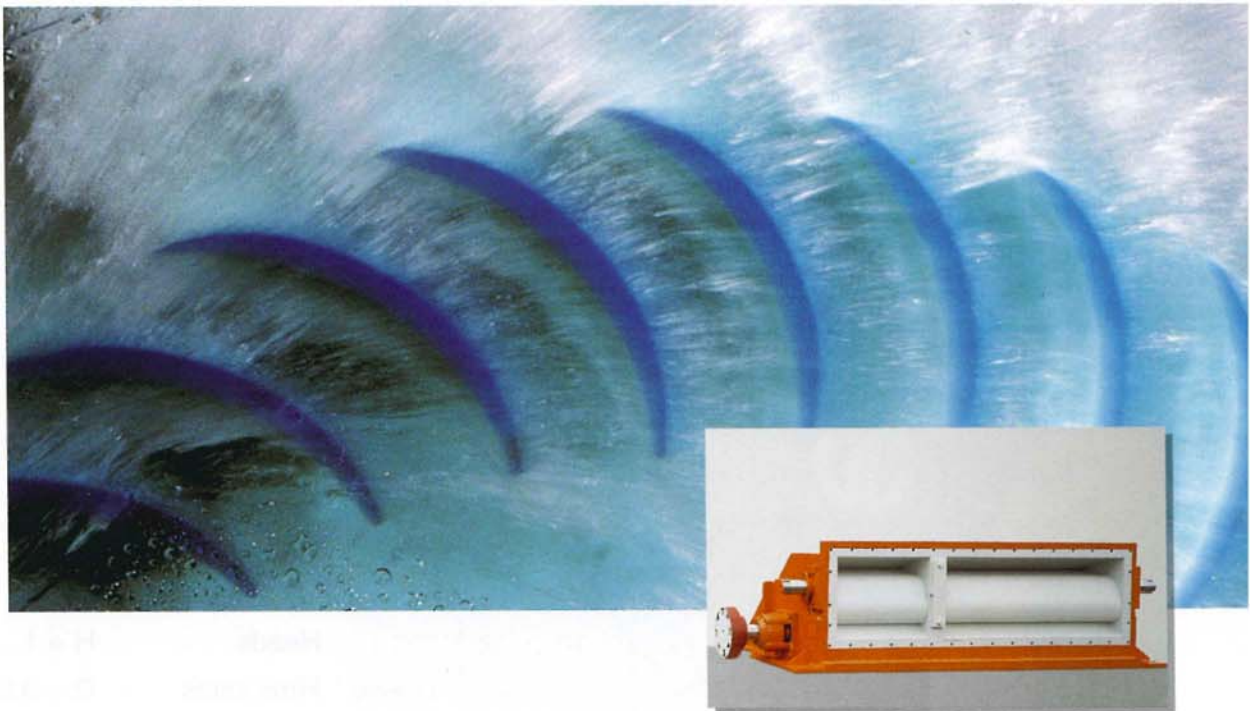




OSSBERGER

The Original OSSBERGER™ Turbine





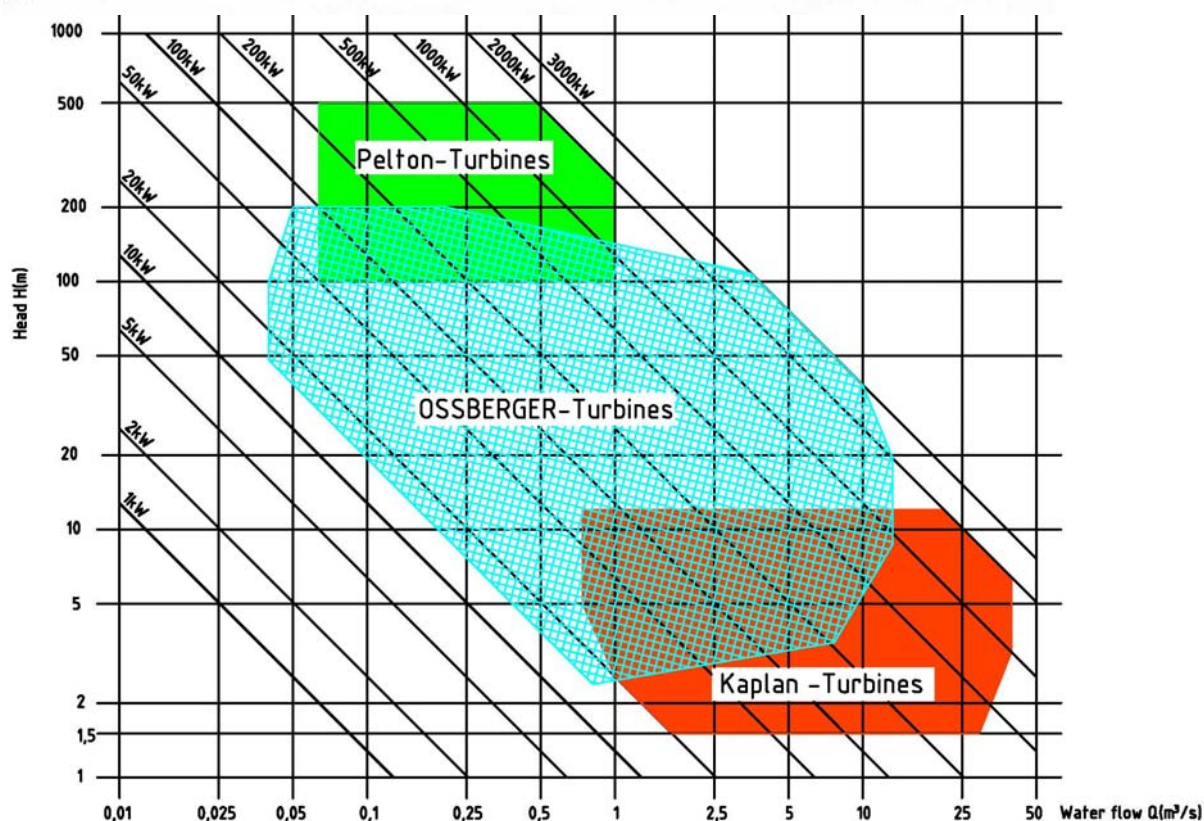
Are you committed to generating electricity from falling water, taking naturally occurring energy from an environmentally friendly renewable resource? This has been our mission for an entire century, and we want to be your partner in seeking these goals.

When Civil Engineer Fritz Ossberger set out in the early 1920s to find a reliable and economical power source for industry, workshops and mills, his goal was to remove a major stumbling block to the rapid advancement of industrialization.

With considerable foresight, he made contact with the Australian genius, A. G. M. Michell, about whose work Ossberger had read. The two men quickly established a strong working relationship and together developed a water power turbine suitable for use by medium-sized manufacturing firms. The new "Free Stream Turbine" design was granted German Imperial Patent No. 361 593, and the OSSBERGER™ Turbine was born.

From its initial development in the 1920s to the present day, the OSSBERGER™ Turbine has been dramatically improved. Special techniques for draft tube utilization, construction and application of bearings and the shape of the subdivided guide vane are all inventions which display the continued technological leadership of the OSSBERGER™ Turbine. In the 1990s the OSSBERGER™ Turbine has continued to be improved and is the subject of yet another series of patents. Today, the OSSBERGER™ Turbine is built and utilized worldwide, and is available for a wide variety of applications.

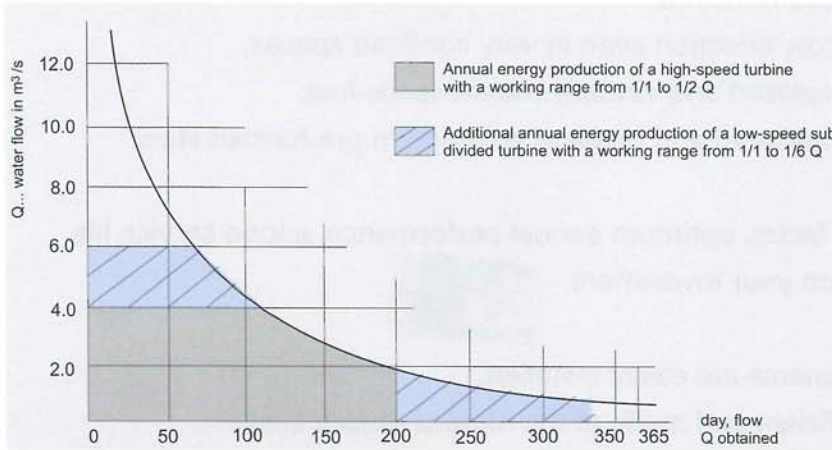
The figure below shows the wide range of heads and flows to which the OSSBERGER™ Turbine can be applied.





Do you need a “tailor-made” turbine?

The OSSBERGER™ Turbine maintains its efficiency over a wider range of flows and is often the most economic solution for run-of-the-river plants on flashy or highly variable streams.

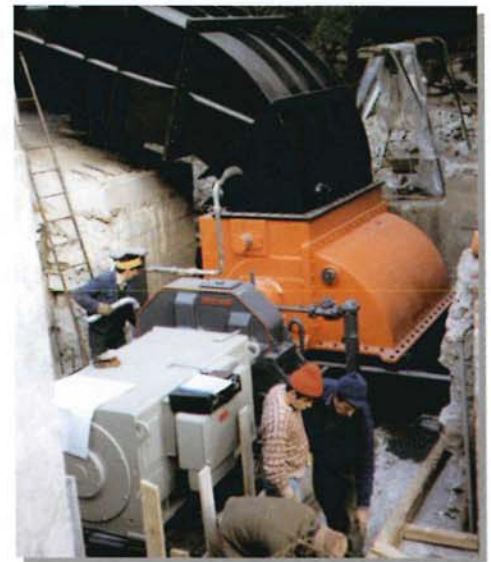


... we make
electricity flow

Why pick a turbine which is optimally efficient for only a few days out of every year? With its stable efficiencies over a wide flow range, an OSSBERGER™ Turbine offers enhanced performance even at a small fraction of total load. Total energy production often exceeds that of a comparable Francis Turbine, which is less able to utilize flows in the fractional load range.



Horizontal Inflow



Vertical Inflow

Depending on your investment target, you might choose to order a turbine with either one cell or two cells. Only Ossberger allows you to choose between a horizontal and vertical inflow design, whichever facilitates your construction needs to save you money and assure a cost-effective installation.



Are you looking for a reliable machine?

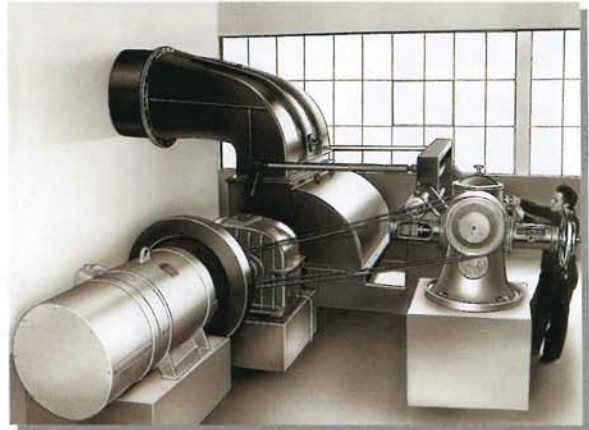
OSSBERGER™ Turbines have proven their reliability at more than 8,000 small hydro power stations, in over 100 countries, on all 5 continents. OSSBERGER™ Turbines operate reliably, efficiently and economically, under different conditions, adapted to the local situation, and in an ecologically friendly manner.

even at small streams ...

Preliminary assembly at the factory and detailed, user-friendly documentation ease owner participation during installation, but short installation schedules can be achieved by using one of Ossberger's technical teams.



Technical teams, worldwide in action



Gabon 1963

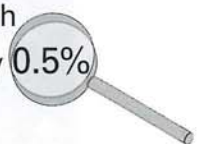


Nepal 1985



Italy 1998

Peace of mind: Many OSSBERGER™ Turbine installations, even where exposed to harsh environments, have run reliably for over 30 years without requiring spare parts. At only 0.5% of annual sales, the company's spare part sales offer impressive evidence of the long-term reliability of the OSSBERGER™ Turbine.





Are you looking for a modern, state-of-the-art machine?

Based on the company's 100-year experience,



the OSSBERGER™ Turbine has been developed and optimized in their own research laboratory, in close cooperation with respected labs and universities,



the OSSBERGER™ Turbine takes advantage of the latest technological advances.



OSSBERGER™ Turbines are built using modern, state-of-the-art machinery, based on the highest quality manufacturing techniques.



If you do business with Ossberger you can have confidence that you are working together with a solid partner who guarantees you customer satisfaction and investment rewards for decades to come.





You need an OSSBERGER™ Turbine!

The 10 advantage points that are typical of the OSSBERGER™ Turbine will help you achieve your investment objectives:



- the flanged corner casing can be easily removed,
- the runner can be disassembled in flow direction even in very confined spaces,
- the guide vane bearings are easily replaced and virtually maintenance-free,
- the runner blades are hydraulically designed and made of cold drawn pre-formed steel

⇒ and assure you a high availability factor, optimum annual performance, a long service life and therefore a maximum return on your investment.



- the preassembled machinery components are easily installed,
- the guide vanes are hydraulically efficient and made of the highest quality steel,
- the tightly closing turbine guide vanes eliminate the need for additional water intake gates and a manually actuated service valve is sufficient even at high heads

⇒ which means low capital investment in relation to the value and low maintenance costs. You will save capital and improve on yield and profits.

- the stable efficiency over a wide range of inflows, from 17 % to 100 % of design flow,
- the cavitation-free operation from zero to full load,
- the heavy continuous guide vane shaft, which is solidly welded to the guide vane

⇒ assure you reliable operation, constant efficiency level and continuous power generation to your customers. You will attain your investment objectives and obtain your long-term profit goal.



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