

Pump-as-Turbine Lower Glendevon Micro Hydro-Scheme

Torishima Service Solutions Europe in partnership with Scottish Water has recently commissioned Lower Glen Devon Hydro Scheme.

As part of the scheme Torishima renovated the meter house at the base of lower Glendevon and completed a full mechanical and electrical installation featuring a 75kW Pump-as-Turbine.

Torishima has developed a product range of Pump-as-turbines from 5kW-200kW that harness the energy in water flowing in pipelines from one location to another to generate electricity which can be used locally or alternately can be exported to the National Grid. This range is based on a conventional single stage split case centrifugal pump. It can be of horizontal or vertical configuration to suit the installation. It is connected by means of a flexible coupling to an AC induction generator. This generator is in turn connected to an inverter which not only converts the generated electric current into a steady 240V, 50Hz supply, but also controls the speed of the generator. This means that the speed modulated to obtain the maximum efficiency and extract as much electrical power from the system. The pump-as-turbine can be installed in existing pipework and does not require complex and costly penstock arrangements. The technology is suited to retrofitting into existing installations where water is being throttled by means of valves to control downstream pressure and flow. Throttling by valves wastes the available energy. By installing a pump-as-turbine this energy can be turned into useful electricity.



Meter House before and after renovation



75kW Pump-as-Turbine Installed

