



Towards a More Sustainable System of Water Supply in Ireland & Wales

- The HydroBPT Project commenced in May 2011 and is exploring the feasibility of Energy Recovery in the Irish & Welsh Water Industries using Micro-Hydropower (MHP) generation.
- The HydroBPT Project is a research collaboration between the Trinity College Dublin (Schools of Engineering & Business) and Bangor University (School of Environment, Natural Resources & Geography) and is part funded by the European Regional Development Fund (ERDF) through the Ireland–Wales Programme (INTERREG 4A).
- The water industry is the 4th most energy intensive industry in the United Kingdom, responsible for 5 million tonnes of CO₂ emissions annually. Globally, 2-3% of energy usage is reported to be associated with the production, distribution and treatment of water. The HydroBPT project aims to assist the water industry in the reduction of its energy consumption and CO₂ emissions.
- MHP generation is possible in water infrastructure where pressure becomes excessively high or where excess pressure is not required for the supply service.
- Examples of where energy recovery is possible without interfering in the supply service include at Pressure Reducing Values; Break Pressure Tanks, Service Reservoirs, Treatment works Outfalls, Inlet Works, Storm Storage Tanks.
- Energy is recoverable in the range of 5-300 kW depending on the flow and pressure available at particular sites.

- Examples exist at Varty Reservoir Ireland (90 kW energy recovery) or Esholt Waste Water Treatment Plant UK (180 kW energy recovery). Capital cost of investment is of the order of €3000-€6000 per kW.
- The objectives of the HydroBPT project include:
 1. Investigating the technical feasibility of Energy Recovery in the Water Industry: investigations to produce detailed design and implementation guidelines.
 2. Assessing the Environmental Impact of this new technology: Carbon-foot print, CO₂ emissions, life cycle analysis.
 3. Development of a GIS database of existing water infrastructure and their energy recovery potential for the Ireland-Wales region
 4. Development of a business/collaboration model for the implementation of Energy Recovery technology by industry stakeholders in practice.
- The HydroBPT project will conclude its work over the next 2 years and believe significant potential exists to improve the sustainability of the water industry in Ireland and Wales through the use of MHP energy recovery.
- The Water Industry contributes significantly to energy consumption and CO₂ emissions in society. Policy driven improvements in the energy efficiency of the process would be welcome.

