



## **INTERNET ARTICLE**

### **Conduit hydropower, the future for hydropower generation**

*27 March 2015*

*The Department of Water and Sanitation (DWS) through collaborative partnership with the Water Research Commission (WRC), University of Pretoria, eThekweni Metro and City of Tshwane Metro has extended a helping hand in mitigating against the energy challenges in the country. A conduit hydropower facility in Bloem Water headquarters will be officially launched on 31 March 2015. This is a first of its kind in South Africa.*

*The generation process involves installation of hydroelectric turbines in a water distribution system. Approximately 30% of the water supplied via the Caledon–Bloemfontein pipeline is diverted through the turbine. Sufficient renewable energy is generated to supply the peak demand of Bloem Water's head office as well as meeting the electricity requirements of the reservoir terrain. Approximately 800 MW/h could be generated with this micro-hydropower installation per year.*

*Showing signs of dominance in small scale hydropower generation, it uses excess energy in pressurised conduits to produce clean and renewable hydroelectric power. This technology has proven to be successful in converting a sustainable energy source as the main supply of energy for operating the Bloem Water head office in Pellisier. It supplies 96 kW/h of energy from a pressurised conduit, to power up its operational facilities, with a full capacity of 360 kW.*

*If this technology proves to be more conducive, it will assist in generating power for on-site use and, in some cases, to supply energy to isolated electricity demand clusters or even to the national electricity grid, depending on the location, type and size of installation.*

*This is different from conventional hydropower generation where large dams are used to store river water in a reservoir. This is also less expensive. Hydropower schemes have very long lifetime and are high in efficiency levels with low operating and maintenance costs.*



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*Hydroelectric energy technology is a proven technology that offers high efficiencies as well as reliable and flexible operation. The energy is renewable and there are no environmentally negative effects which may require mitigation.*

*The gathering at the launch of the unit is set to demonstrate that water is truly the catalyst for growth and that the resource also plays a key role in the development of the economy of South Africa. The water-energy challenge offers several opportunities for innovation and as such, the Water Research Commission (WRC) started investment in such potential new innovation some time ago. Apart from conduit hydropower other developments include low head hydropower.*

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