

# The use of LCA in the water industry and the case for an environmental performance indicator

**E Friedrich<sup>1\*</sup>, S Pillay<sup>2</sup> and CA Buckley<sup>2</sup>**

*<sup>1</sup>School of Civil Engineering, Surveying and Construction, University of KwaZulu-Natal, South Africa*

*<sup>2</sup>Pollution Research Group, University of KwaZulu-Natal, South Africa*

## **Abstract**

This paper reviews the use of environmental life-cycle assessments (LCAs) in the water industry internationally and locally. An LCA conducted on the water supply, treatment and recycling in the eThekweni Municipality is used for demonstrative purposes. Many of the LCAs reviewed, including the case study, have demonstrated that in the treatment of water (potable water and wastewater) most of the environmental impacts are traced back to the use of energy - in most cases the use of electricity. Therefore, it is proposed that for South Africa the electricity consumption of different water treatment processes can be used as an environmental indicator of impacts. Advantages and limitations in using electricity consumption as an indicator are also presented.

**Keywords:** life-cycle assessment, water treatment processes, energy consumption