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Carbon footprint of seawater reverse osmosis desalination pre-treatment: Initial results from a new computational tool

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ABSTRACT

A carbon footprint represents the overall CO_2 equivalent emissions embodied in a specific product over its entire life cycle. In this work we present an easy to use software tool developed in Excel which allows for the calculation of a carbon footprint to be conducted by non professional. The tool was specifically designed according to life cycle assessment (LCA) standards to be used with water treatment processes but can be modified for other processes as well. Using a case study involving the SWRO pre-treatment process in the Palm Jumeirah plant a calculation of the carbon footprint of 1 m^3 of pre-treated seawater was carried out and the hot spots at which process improvements can be made were identified.

Keywords: Carbon footprint; SWRO; Pre-treatment; Palm Jumeirah

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