

Total annual profits estimation for new construction of an SWRO desalination plant in Korea

Da Hee Jung^a, Young Geun Lee^a, Yun Seok Lee^a, Joon Ha Kim^{a,b,c*}

^aDepartment of Environmental Science and Engineering, ^bCenter for Seawater Desalination Plant,

^cSustainable Water Resource Technology Center, Gwangju Institute of Science and Technology (GIST), Gwangju, 500-712, Korea
Tel. +82 (62) 970-3277; Fax +82 (62) 970-2434; email: joonkim@gist.ac.kr

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ABSTRACT

A seawater reverse osmosis (SWRO) desalination process has become an alternative technology to solve water shortage problem in the world. Although SWRO is an advanced and useful technology for humanity, there is still unsettled cost effective issue. Therefore, the estimation of operation and maintenance (O&M) costs should be significantly considered before a new construction of SWRO desalination plant. The objective of this feasibility study is to estimate total annual profits (TAP) according to O&M for a new construction of SWRO desalination plant at 9 candidate sites along the shoreline in Korea. The cost estimation model was developed and validated with Fujairah SWRO plant operation data in 2005. As a result, TAPs for the 9 candidate sites were estimated and compared with that of Fujairah SWRO plant. The result reflects that the cost estimation model in this study is able to propose a reasonable range of TAP for a new construction project of SWRO desalination plant in Korea.

Keywords: SWRO desalination; Cost estimation; Seawater; Total annual profits, Site-specificity

* Corresponding author.