

기후 변화 완화를 위한 외부 냉온설비가 없는 새로운 multigeneration시스템 경제성 평가

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A new multigeneration system was proposed without cooling facilities or fossil fuel burning. The system produces power, cooling, heating, freshwater, hydrogen, and oxygen. Here, an economic evaluation of the system is performed to analyze its economic feasibility. Total annual costs (TAC), annual operating costs (AOC), and annualized capital costs (ACC) are determined using a nonlinear mathematical model. The model is developed based on the purchased equipment cost of the components, labor, insurance, engineering, and contingency costs. The results showed that TAC of the system coupled with 20,648 m<sup>3</sup>/d WWIP was 260,928 \$ that 53 % belonged to AOC and 47 % to ACC. Acknowledgement: This work was supported by Korea Research Fellowship Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Science and ICT (2019H1D3A1A02071051), the National Research Foundation (NRF) grant funded by the Korean government (MSIT) (No. NRF-2017R1E1A1A03070713), and Korea Ministry of Environment (MOE) as Graduate School specialized in Climate Change. Keywords: Climate change mitigation; Economic model; Hydrogen Production; Multigeneration system