

Biogas upgrading through cryogenic technologies: A comprehensive review

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Due to clean energy characteristics, biomethane is considered as a substantial substitute of natural gas. However, due to limited renewable resources available, considerable efforts are needed to evaluate biomethane production technologies. For that purpose, the cryogenic biogas upgrading technologies are evaluated technically and economically. In recent years, a number of studies have been conducted to assess the process performance of cryogenic technologies with respect to energy consumption and economic beneficence. Hence, a comprehensive review of biogas cryogenic upgrading technologies is conducted to analyze the current research portfolio. This review paper includes technical, economic, environmental, and policy based analysis of recent literature. Based on the analyses, the possible suggestions are proposed for researchers and economic policymakers. This research was supported by the Basic Science Research Program Foundation of Korea (NRF) funded by the Ministry of Education (2018R1A2B6001566), the Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).