

Optimization of the Energy Network for an Entire Industrial Complex

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Most companies have been trying to reduce energy consumption and environmental contaminations. Although many chemical companies try to maximize their energy efficiencies, there seem to be no remaining significant energy saving opportunities in individual plants. However, it is found that waste heat is disposed in forms of low or medium pressure steams. It also indicates that process analysis should be accomplished in terms of energy minimization from the aspect of the entire industrial complex. In this work, we suggested Steam Networking Matrices (SNMs) for steam exchange between companies to increase steam reuse and to decrease energy consumption by optimizing the steam network of an imaginary chemical complex using SNMs. Results show that energy consumption can be reduced by constructing new steam exchange networks.