

Performance Variation of the TEES According to the Changes in Cold-Side Storage Temperature

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Abstract : Surplus electricity can be converted into potential energy via pumped hydroelectric storage for future usage. Similarly, thermo-electric energy storage (TEES) uses heat pumps equipped with thermal storage to convert electrical energy into thermal energy; the stored energy is then converted back into electrical energy when necessary using a heat engine. The greatest advantage of this method is that, unlike pumped hydroelectric storage and compressed air energy storage, TEES is not restricted by geographical constraints. In this study, performance variation of the TEES according to the changes in cold-side storage temperature was investigated by simulation method.

Keywords : energy storage system, heat pump, fluid mechanics, thermodynamics

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