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Development and Analysis of Multigeneration System by Using Combined Solar and Geothermal Energy Resources

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Abstract : Although industrialization marks to the economy of a country yet it increases the pollution and temperature of the environment. The world is now shifting towards green energy because the utilization of fossil fuels is resulting in global warming. So we need to develop systems that can operate on renewable energy resources and have low heat losses. The combined solar and geothermal multigeneration system can solve this issue. Rather than making rankine cycle purely a solar-driven, heat from solar is used to drive vapour absorption cycle and reheated to generate power using geothermal reservoir. The results are displayed by using Engineering Equation Solver software, where inputs are varied to optimize the energy and exergy efficiencies of the system. The cooling effect is 348.2 KW, while the network output is 23.8 MW and reducing resultant emission of 105553 tons of CO_2 per year. This eco-friendly multigeneration system is capable of eliminating the use of fossil fuels and increasing the geothermal energy efficiency.

Keywords : cooling effect, eco-friendly, green energy, heat loses, multigeneration system, renewable energy, work output
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