Evaluations of R&D Strategy for Advanced Power Generation Technologies in Japan with a MIP Model Based on GERT

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This paper makes evaluations of R&D strategies for advanced power generation technologies, such as natural gas combined cycles, IGCCs (Integrated coal Gasification Combined Cycles) and fuel cell power generation systems having different thermal efficiencies, with a mixed integer-programming model based on GERT (Graphical Evaluation and Review Techniques). The obtained cost effective strategy shows the optimum investment allocation among the developments of various elemental technologies, and at the same time the optimum expansion planning of power systems in Japan including other power generation technologies, such as conventional coal, oil and gas fired, hydro and wind power.

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