Sequential mixed linear programming of energy suppy model

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This study addresses the problem of modeling energy resource allocation and deriving an optimal policy for long-term investments in novel energy technologies. Model is developed based on city boundary and electric power system in Korea. It produces net requirements of energy resource through predicting demand and supplies each energy resource to all cities, balancing their demand by deciding how energy resource convert to another type, total imports, shipment between cities. These decisions are made by the year, month, and hour. After model is completed, cost is optimized by mixed integer programming. It also contains effect of uncertain variable like price, weather, and technology including demand.