

Prioritization of energy technologies in case of high oil prices and additional nuclear plant construction by the scenario planning and MCDM approaches

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There is no systematic procedure for building a strategic energy technology development plan considering the various energy environment changes. In this study, we employ the scenario planning and MCDM approach for establishing the strategic energy technology development plan as national level. We focus on the one case out of four cases, accounting for high oil prices and additional nuclear plant construction in the research. In the first phase, we draw the key uncertainty variables and build four scenario cases. and then, in the second phase, we apply AHP, fuzzy integrated AHP, TOPSIS in the specific case, which is the condition on high oil prices and additional nuclear power construction. We assess the relative weights of three MCDM approaches. The results of this research, we provide the decision maker with a systematic procedure for generating a strategic energy technology development plan as national level.