A parametric approach for the valuation of power plant flexibility options

Conventional generation units encounter a changing role in modern societies’ energy supply. With increased need for flexible operation, engineers and project managers have to evaluate the benefits of technical improvements. For this purpose, a valuation tool has been developed, comparing economical cornerstones and technical constraints of generation units to European Energy Exchange prices for PHELIX 2014. It enables the user to relate a change in technical parameters to an economic effect and possible revenues. Four different types of conventional power plants are investigated in scenarios with increasing CO2 and fuel prices to determine the impact of different flexibility options. Results show that an increased ramp rate has not the same magnitude of positive economic impact as reduced minimum operation load, based on an observation on a price signal with resolution of fifteen minutes.

Stichworte: Power plant flexibility; Valuation tool; Power plant costs; Flexibility options

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