Prediction of Levelized Costs of New Nuclear, Gas and Coal Power Plants

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This article compares predicted costs of new base-load power plants. Costs are calculated as Levelized Unit Electricity Cost (LUEC). Power plants selected for comparison are coal-fired power plant, gas-fired power plant and nuclear power plant. Power plants powered by renewable sources are not selected for comparison, because they cannot be relied upon to operate as base-load power plants.

LUEC for nuclear power plant includes decommission costs and spent fuel disposal costs. For coal-fired and gas-fired power plant LUEC includes emissions fee for CO_2. Foreseen prices of fossil-fuel fired power plants with Carbon Capture and Storage (CCS) system installed are also included in comparison.

Parameters needed for LUEC calculation are indentified and standard internationally accepted LUEC methodology is used.

Sensitivity study is performed, to determine the influence of most important parameters (overnight cost, fuel cost, CO_2 emission fees, cost of capital) on levelized costs of selected power plants.

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