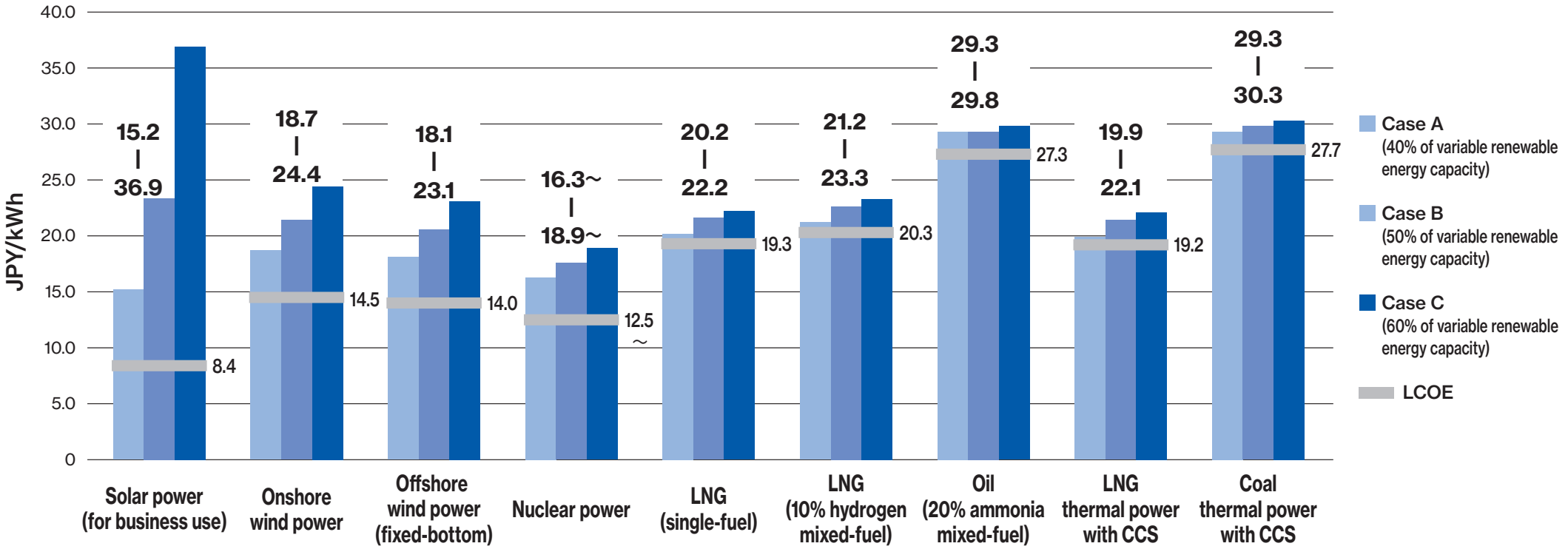
[Power Generation Costs Considering a Portion of Integration Costs] Estimated Results for 2040



* [Power Generation Costs Considering a Portion of Integration Costs] are calculated with the additional costs incurred in the power system when a specific power source is added while existing power generation facilities are in operation. Specifically, it takes into account adjustments by other power sources such as LNG thermal power, storage and discharge losses from pumped storage and grid batteries, grid stabilization costs associated with deployment of renewable energy, operational changes to existing thermal power due to fluctuations and unpredictability of amounts of renewable energy power generation, reduced efficiency of power generation, and costs associated with adjusting amounts of power generation and securing reserve capacity.
* Future costs will vary if the assumptions for the calculations are changed, such as the outlook for fuel costs, the number of years of operation and the capacity utilization rates of the facilities, and the power source that is expected to be replaced in the power system when a specific power source is added (which in these circumstances is coal thermal power, the most expensive). Three cases were used for these calculations. It is also important to keep in mind the possibility of further technological innovations.
* The power supply system in 2040 is assumed to have a certain degree of strengthening of inter-regional transmission lines and installation of grid storage batteries, and the reduction of integration costs that these will bring has been taken into account in the above results. Furthermore, if demand response is taken into account to a certain extent, power generation costs considering a portion of integration costs will be lower than the above.
* The costs of strengthening inter-regional transmission lines and installing storage batteries are not included in the calculation, as these are not additional costs that arise in the entire power system when a specific power source is added.
* Hydrogen and ammonia are based on heat quantity.

Source: Created from materials from the Ministry of Economy, Trade and Industry Power Generation Cost Verification Working Group