

Intermittent renewables have different system cost characteristics than dispatchable plants

Key aspects

Reasoning

A

Intermittency

“Not all MWh are created equal – timing matters”

- In periods of low residual demand, low power prices reflect that generation is of less value to the system – LCOE metrics implicitly assume that every MWh is equally valuable

B

Balancing cost

“Does it deliver exactly when and what it says it will?”

- Deviations from production schedules create imbalances and balancing costs
- More intermittent renewables require larger reserves to balance deviations

C

Grid expansion

“How does the power get to where it is needed?”

- Capacity additions that are not aligned with demand require grid congestion management and expansions of transmission and distribution grids

D

Heat
(CHP only)

“Can I get free heat out of my plant?”

- CHP plants produce heat as a by-product; closing them requires substitution investments (e.g. gas/biomass boilers, power-to-heat with additional power generation capacities)