Meeting of Northeast Joint Board for Economic Dispatch
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DOE Report to Congress on Value of Economic Dispatch

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Mandate for DOE Report


- DOE was told to study current ED procedures, identify possible improvements, and analyze the potential benefits of such changes.

- Congress’ definition of ED: “operation of generation facilities to produce energy at the lowest cost to reliably serve consumers, recognizing any operational limits of generation and transmission facilities.”
Study Plan

- DOE prepared a short questionnaire (6 questions) about ED practices and possible improvements, and circulated it to interested stakeholders through seven trade associations.

- 92 parties, including representatives from all stakeholder groups, responded to the questionnaire. DOE drew upon these comments in preparing its report.

- DOE also reviewed 25 existing studies that give substantial attention to economic dispatch or regulatory or organizational changes affecting economic dispatch.
Findings: Benefits of ED

- Benefits of ED: Economic benefits tend to increase as the geographic scope and electrical diversity of the area under unified dispatch increases.
- Retail customers benefit if cost savings are passed through in retail rates.
- ED tends to reduce fuel use and emissions as high-efficiency units frequently displace lower-efficiency units using the same or similar fuel.
Mechanics of ED

- In practice, ED requires balancing economic efficiency, reliability, and other factors, such as the ability of a given generating unit to shift output at short notice, and scheduling limitations imposed by environmental laws, hydrological conditions, and fuel characteristics. Result: ED is a “constrained cost minimization process”

- Two subtypes of ED: Unit commitment (day ahead) and unit dispatch (real time); in practice, both are “security constrained”
Existing ED Studies

• Two main types of existing studies: Analyses of impacts associated with proposed formation of ISOs and RTOs (“RTO studies”), and studies of the dispatch of IPPs (“IPP studies”)
• Neither type was designed to produce the disaggregated assessment of benefits of ED Congress envisioned in Secs. 1234 and 1832
• RTO studies found benefits in the range of 1 to 5% of total wholesale electricity costs. IPP studies found benefits of 8 to over 30% of total variable production costs.
Economic Dispatch Issues

- Non-utility generators (NUGs) assert that some vertically integrated utilities use dispatch processes to favor their own generation.
- Some of the operating rules and practices used in economic dispatch may have the effect of excluding NUG capacity from the economic dispatch “stack” or shifting it to a disadvantageous position in the stack.
- Such practices may include rules for determining whether NUGs receive long-term contracts for their output or for the use of transmission facilities, and whether NUGs provide sufficient operational flexibility to qualify for economic dispatch.
Improving the Practice of Economic Dispatch

- The Joint Boards for Economic Dispatch established under Sec. 1298 may wish to examine ED practices in their respective areas to determine whether NUG capacity is treated appropriately.
- DOE urges NUG and power purchaser communities to work together to ensure that contract terms compensate NUGs for providing operational flexibility.
- The tools used in ED – software, data, algorithms, and assumptions – should be subject to systematic review aimed at improving the efficiency of the process.
- Economic dispatch is dependent on accurate load forecasting. Improvements in the accuracy of such forecasting will enhance ED efficiency.
Questions?

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