



This document is scheduled to be published in the Federal Register on 03/17/2021 and available online at [federalregister.gov/d/2021-05494](https://www.federalregister.gov/d/2021-05494), and on [govinfo.gov](https://www.govinfo.gov)

BILLING CODE 6/17-01-P  
DEPARTMENT OF ENERGY  
Federal Energy Regulatory Commission

Increasing Market and Planning Efficiency through  
Improved Software

Docket No. AD10-12-012

Notice of Technical Conference:  
Increasing Real-Time and Day-Ahead Market Efficiency through Improved Software

Take notice that Commission staff will convene a technical conference on June 22, 23, and 24, 2021 to discuss opportunities for increasing real-time and day-ahead market efficiency of the bulk power system through improved software. A detailed agenda with the list and times for the selected speakers will be published on the Commission's website<sup>1</sup> after May 28, 2021.

This conference will bring together and encourage discussion between experts from diverse backgrounds. Examples include electric power system operators, software developers, and professionals from government, research centers, and academia. The conference will bring these experts together for the purposes of stimulating discussion, sharing information, and identifying fruitful avenues for research concerning improved software for increasing efficiency and reliability of the bulk power system.

This conference will build on discussions at prior conferences in this proceeding by focusing on topics identified as important to market efficiency in prior conferences. Broadly, such topics fall into the following categories:

- (1) Improvements to the representation within market models of physical constraints that are either not currently modeled or are currently modeled using mathematical approximations (e.g., voltage and reactive power constraints, stability constraints, fuel delivery constraints, and constraints related to contingencies);
- (2) Representations of uncertainty to better maximize economic efficiency (expected market surplus) and lead to better understanding events of that could impact the reliability of the bulk power system (e.g., stochastic modeling, or other improved modeling approaches to energy and reserve dispatch and system planning that efficiently manage uncertainty);
- (3) Software related to grid-enhancing technologies (e.g., optimal transmission switching, transmission flow control, advanced transmission line ratings,

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<sup>1</sup> <https://www.ferc.gov/industries-data/electric/power-sales-and-markets/increasing-efficiency-through-improved-software>

distributed energy resources, and software for forecasting and enhancing visibility into changing system conditions);

- (4) Improvements in markets' ability to identify, use, and/or enable capabilities in the existing systems in ways that improve bulk power system economic efficiency and reliability (e.g., transmission constraint relaxation practices, multi-stage generator modeling, storage state-of-charge management, and ramp management);
- (5) Improvements to the duality interpretations of the economic dispatch model, with the goal of enabling the calculation of prices which represent better equilibrium and incentives for efficient entry and exit;
- (6) Limitations of current electricity market software due to its interaction with hardware, for example, parallel computing and better cache management;
- (7) Other improvements in algorithms, model formulations, or hardware that may allow for increases in market efficiency and enhanced bulk power system reliability.

Within these or related topics, we encourage presentations that discuss best modeling practices, existing modeling practices that need improvement, any advances made, or related perspectives on increasing market efficiency through improved power systems modeling.

The conference will take place virtually via WebEx, with remote participation from both presenters and attendees. Further details on remote attendance and participation will be released prior to the conference.

Attendees must register through the Commission's website on or before June 11, 2021.<sup>2</sup> WebEx connections may not be available to those who do not register.

Speaker nominations must be submitted on or before May 7, 2021 through the Commission's website<sup>3</sup> by providing the proposed speaker's contact information along with a title, abstract, and list of contributing authors for the proposed presentation. Proposed presentations should be related to the topics discussed above. Speakers and presentations will be selected to ensure relevant topics and to accommodate time constraints.

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<sup>2</sup> The attendee registration form is located at <https://ferc.webex.com/ferc/onstage/g.php?MTID=e97c1ef8334b1f4db52394fe644edfe57>. Click "Register" to be taken to the form.

<sup>3</sup> The speaker nomination form is located at <https://ferc.webex.com/ferc/onstage/g.php?MTID=e3309f9a29fe364f2f4ee1ddb3101f580>. Click "Register" to be taken to the form.

The Commission will accept comments following the conference, with a deadline of July 30, 2021.

There is an “eSubscription” link on the Commission’s web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov), or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

FERC conferences are accessible under section 508 of the Rehabilitation Act of 1973. For accessibility accommodations please send an email to [accessibility@ferc.gov](mailto:accessibility@ferc.gov) or call toll free (866) 208-3372 (voice) or (202) 502-8659 (TTY), or send a fax to (202) 208-2106 with the required accommodations. This notice is issued and published in accordance with 18 CFR 2.1 (2019).

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DATED: March 11, 2021.

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[FR Doc. 2021-05494 Filed: 3/16/2021 8:45 am; Publication Date: 3/17/2021]