ERCOT Trending Topics

TOPIC: REAL-TIME CO-OPTIMIZATION PLUS BATTERIES (RTC+B)

Real-Time Co-optimization (RTC)
RTC Plus Batteries (RTC+B)
Real-Time Market Changes

In this ERCOT Trending Topic, we explain what Real-Time Co-optimization plus Batteries (RTC+B) is, the proposed market design change, and how it will provide more flexibility to reduce energy costs and improve grid reliability.

FACTS:

Background

In 2017, the Public Utility Commission of Texas (PUCT) directed ERCOT and the Independent Market Monitor (IMM) for the ERCOT wholesale electric market to assess the potential benefits of Real-Time Co-optimization (RTC). In June 2018, the IMM released a report that included its evaluation of the impacts of RTC on the ERCOT market. ERCOT also released a study showing the additional impacts of RTC to supplement the IMM report with a specific focus on operational benefits.

What is Real-Time Co-optimization (RTC)?

RTC is the process of dispatching energy and Ancillary Services interchangeably in the Real-Time Market. Under the current market design, ERCOT procures Ancillary Services in the Day-Ahead Market and does not typically move Ancillary Services between resources in the Real-Time Market. The remaining capacity not procured for Ancillary Services is then used in real time to meet customer demand for electricity.

What is RTC plus Batteries (RTC+B)?

The RTC+B market design change is a key element in the strategic development of the current ERCOT market to provide more flexibility in real time for ERCOT to efficiently procure energy and Ancillary Services. In addition, the new functionality will include improvements to modeling and consideration of batteries and the state of charge they have available for providing energy and Ancillary Services.

How will RTC+B serve electric load and meet Ancillary Service needs?

With RTC+B, ERCOT's Security-Constrained Economic Dispatch (SCED) system will automatically select the most efficient and effective resources available to serve load and meet Ancillary Service needs. If the SCED system were to dispatch resources that were procured for Ancillary Services capacity, the system would reassign other resources (i.e., generators, batteries, or demand-side resources) to meet ERCOT's Ancillary Services requirements. The efficiency benefits of this change have been studied and estimated by the IMM to save $1.6 billion per year in reduced energy costs, according to the Potomac Economics study.

What operational improvements will RTC+B provide?

With RTC+B, ERCOT will benefit from operational improvements that maximize the capability of the existing resources online each day, including:

- More timely procurement of Ancillary Services when additional amounts are required or when resources are unable to provide those services;
- More effective congestion management resulting from the ability to use a wider variety of resources to solve transmission constraints;
- Reduction in manual actions by operators, including the deployment of Ancillary Services and the swapping of Ancillary Services obligations between resources;
- Improved management of Ancillary Services through consideration of the minute-to-minute changes in resource-specific capabilities, including a framework for better using all types of resources;
- Modeling batteries as a single device, rather than both a generator and a load, to more effectively dispatch within the market;
- Reducing the need for out-of-market generator commitments by ERCOT; and
- Replacing inefficient supplemental markets with Real-Time Ancillary Service procurement.

When does RTC+B go live in the ERCOT Market?

ERCOT is working closely with stakeholders on testing and market trials in anticipation of an RTC+B target go-live date of December 5, 2025. The completion of the RTC+B program will mark a significant step forward in more efficient markets and improved grid reliability; it will also meet the requirements of PUCT Project No. 48540, *Review of Real-Time Co-optimization in the ERCOT Market*.

What's next?

Stay updated on RTC+B Program testing and go-live activities by attending ERCOT meetings of the RTC+B Task Force, ERCOT Technical Advisory Committee, and ERCOT Board Reliability & Markets Committee.