

Real-Time Co-Optimization

A FACT SHEET

AMBITIOUS SYSTEM CHANGE UNDERWAY AT ERCOT

Real-Time Co-Optimization, or “RTC” in regulatory parlance, is a still-under-development ERCOT program that eventually will allow the organization to coordinate its otherwise separate procurement activities for energy and capacity.

When operational, the new RTC system should lower overall electricity costs by permitting ERCOT computers to pick the lowest-cost combination of real-time energy and day-ahead ancillary services to serve system needs. A version of RTC is in place in most other organized electricity markets in North America.

TIME LINE

The Public Utility Commission approved RTC in 2019 (Project No. 48540) but its development was delayed due to the Covid epidemic. Development began again in July 2023, and planning is expected to be complete by April 2024. ERCOT officials say the system will become operational by late 2026 or early 2027 at an implementation cost of \$50 million.

PROJECTED COST SAVINGS

According to an analysis by ERCOT’s Independent Market Monitor, an RTC system would have resulted in a \$1.6 billion reduction in annual energy costs during 2017, accompanied by a \$11.6 million reduction in production costs to serve load, a \$257 million reduction in congestion costs, and a \$155 million reduction in Ancillary Services costs. A more recent backtrack analysis is not available.

The IMM credited the potential savings to a shifting away from higher-cost generators for energy procurement purposes, to more efficient relief of transmission-line congestion, and more efficient energy ramping-up and ramping-down by generators.

Today, power plant capacity committed through ERCOT’s day-ahead ancillary services market is set aside as reserve power and not considered in ERCOT’s computerized real-time generation dispatch system. Under Real-Time Co-Optimization, if an ancillary services generation resource is the lowest cost energy resource, ERCOT’s computerized dispatch system will reallocate the AS capacity reserves among real-time resources. RTC in some instances also may assist in clearing system congestion because it allows access to additional energy.

HOW RTC WORKS

Currently ERCOT operates a day-ahead market in which it contracts for the capacity of generation plants for stand-by power. But ERCOT also manages a separate real-time market under which it procures power in 5-minute intervals to ensure grid stability on an ongoing basis.

RTC would merge these two functions, allowing ERCOT systems to more efficiently deploy lower-cost energy on a real-time basis while reserving higher-cost generation units for standby capacity.

RTC will affect various ERCOT settlement systems. The implementation of RTC will be ERCOT’s most ambitious project since it completed the nodal market in 2010.

OTHER RTC BENEFITS

- As part of the project development – and at no addition to RTC’s \$50 million implementation cost – ERCOT will improve its understanding of real-time battery deployments.
- RTC should help reduce ERCOT’s costly use of its “Reliability Unit Commitment” system under which generators occasionally receive last-minute, out-of-market orders to provide reserve capacity in exchange for formula-based compensation.

\$50 MILLION

Estimated RTC implementation cost

\$1.6 BILLION

Estimated RTC reduction in annual energy costs (2017)

2026-2027

RTC completion expected in late 2026 or early 2027