Draft Real-Time Co-Optimization Design Principles

Version April 29, 2019

# The Real-Time Market (RTM) will be modified to co-optimize energy and the Ancillary Service (AS) products.

## The implementation of Real-Time Co-optimization (RTC) will require the development of a separate AS Demand Curve (ASDC) for each AS product in the RTM (in discussion at PUCT).

## The System-Wide Offer Cap (SWOC) and Power Balance Penalty Curve (PBPC) will be updated per discussion and direction from the PUCT.

## The RTM will be modified to use Resource-specific AS Offers in the optimization, and rules will be put into place regarding how the AS Offers are used and awarded.

## Systems and applications that provide input for the RTM optimization engine will be modified to account for RTC (e.g., the Resource Limit Calculator (RLC)).

## The processes for deploying AS will be modified, as needed, to accommodate the awarding of AS in Real-Time and the use of ASDCs.

## The current AS imbalance settlement processes using the Operating Reserve Demand Curve (ORDC) prices will be replaced with a new process in RTC.

# The suite of AS products assumed for the implementation of RTC are those defined in the framework provided by Nodal Protocol Revision Request (NPRR) 863, Creation of ERCOT Contingency Reserve Service and Revisions to Responsive Reserve (in discussion at PUCT).

# To facilitate this change to the RTM, Reliability Unit Commitment (RUC) will be modified to co-optimize energy and AS. RUC will look at the Resources planned to be available to determine whether additional Resource commitments are needed to meet the load forecast and minimum AS requirements, as well as resolve transmission congestion.

# The current Supplemental AS Market (SASM) process goes away and the RUC process will be used to ensure sufficient capacity is projected to be available in Real-Time to meet the load forecast and minimum AS requirements, as well as resolve transmission congestion.

# Changes to the Day-Ahead Market (DAM) specifically associated with the implementation of RTC will be limited (in discussion at PUCT).

# Market-facing reports will be modified to facilitate the new suite of information being provided with the implementation of RTC.

# Metrics for monitoring Market Participant performance will be modified to account for any changes in the provision and deployment of AS created by the implementation of RTC.

# The following items are considered out of scope for project to implement RTC:

## TBD