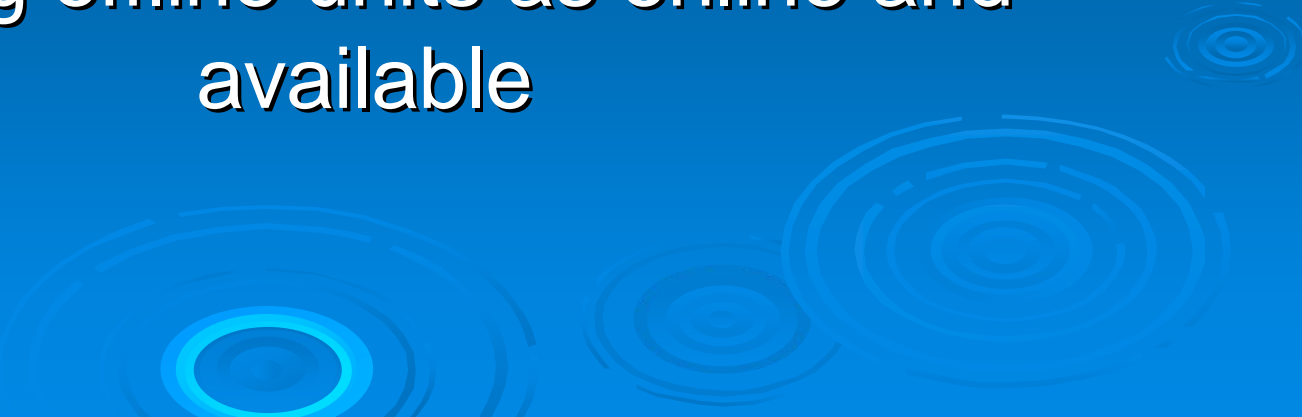



Real Time Balancing (RTB) & Resource Plan Statuses

Change to the QSE practice of
showing offline units as online and
available

The background of the slide features several decorative elements consisting of concentric circles in various shades of blue, resembling ripples in water. These circles are scattered across the lower half of the slide, with a prominent one in the bottom center and others towards the bottom right and left.

Overview

- Current RTB Process
 - Role of the Resource Plan
 - History of the RTB
 - Reasons for changing the RTB process
- 

Current RTB Process

- Executes 14 minutes before the start of the interval
- Calculates MCPE and amount of zonal deployment per QSE based on the aggregated Zonal Bid Stacks of QSEs
- Validates volume of MWs bid by QSEs against their latest Resource Plan submission
- Sends out QSE deployments 5-7 minutes before the start of the interval ramp

Utilization of the Resource Plan

- RTB verifies that the bid capacity is available by checking the resource plan
 - Checks unit online status
 - Checks unit availability
 - Compares the calculated output of units derived from QSE base power schedule and compares output to Capability

RTB History

- RTB execution time moved from approximately 30 minutes before the start of the interval ramp to 5 -7 minutes before the start of the ramp
 - Closer to real time execution benefited load forecasting accuracy to reduce the amount of procured/deployed regulation capacity
 - Improved response time to local congestion through unit specific deployment instructions – meets NERC 30 minute requirement
- Offline combustion turbine units were allowed to be shown as on-line and available because of the 30 minute lead time

Reasons for changing the practice of allowing offline units to be shown online

- Lowers risk of failing NERC DCS Compliance
 - Deployment of balancing energy from resources that are physically offline and unable to respond in 5 minutes could cause low frequency or depletion of RRS which could result in an ERCOT exposure if a large unit were to trip during this time period. Currently ERCOT observes this risk numerous times each day placing ERCOT at risk for these intervals.
- Required for proper performance of the Replacement Market in Release 4
 - Replacement utilizes the status in the Resource plan to order units on as needed and incorrect statuses will prevent proper commitment of resources necessary for reliable operations.
- Required for proper procurement of Non Spin
 - GTs are included in the Resource Max Capability when they are shown online thus ERCOT may not procure Non Spin for hours that would indicate low spinning reserve margins without the GTs
- CAM/SFT will operate based on actual unit status
 - SFT validates the online status using SCADA and will correct status of the units before executing BES market

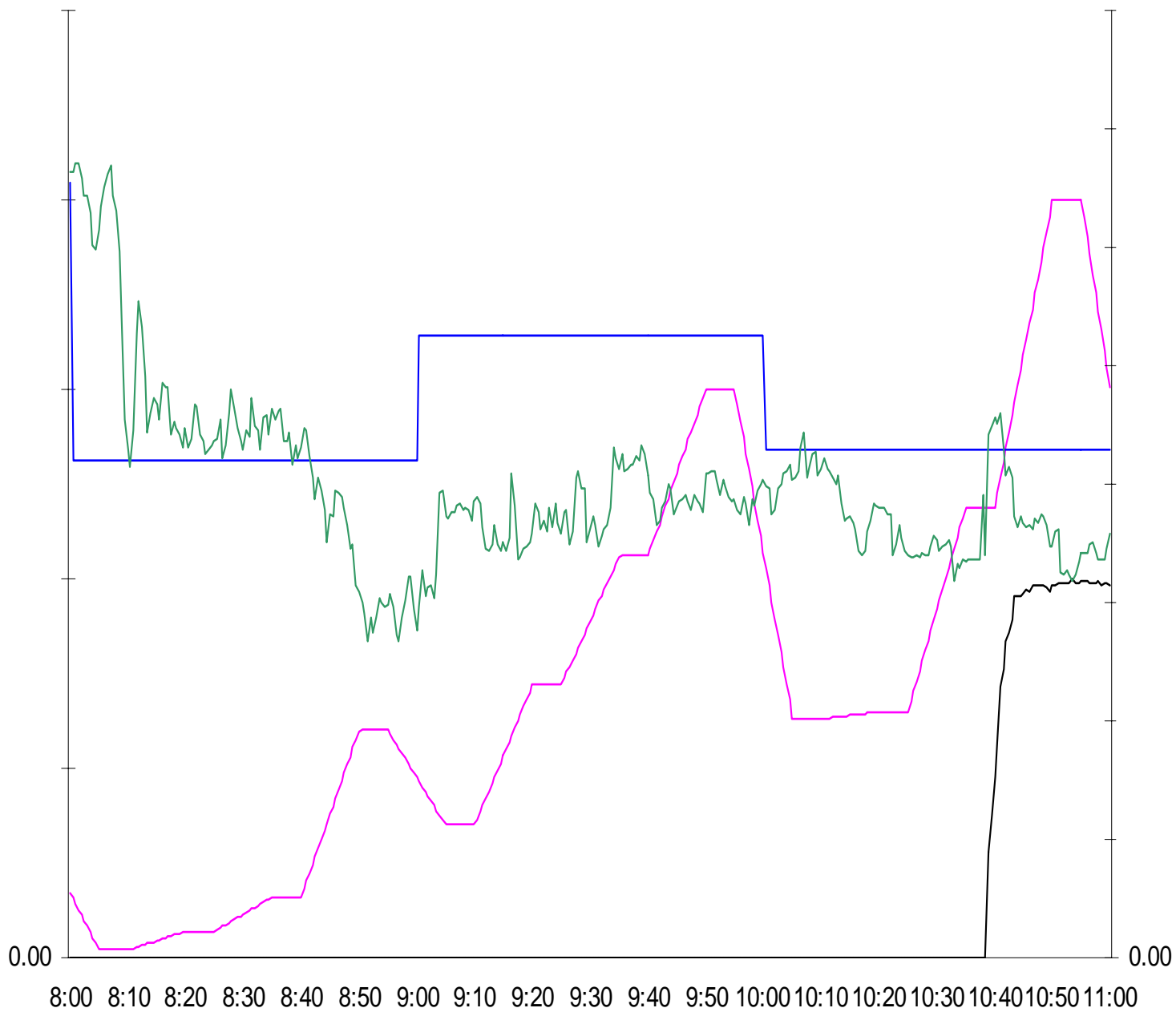
Reliability Tools

- Non Spin market
 - GTs currently are included in resource plan online spinning reserve calculation computed day ahead. (January avg. 2100 MW)
- OOMC
 - GTs are shown online in resource plans thus ERCOT can not OOMC the units. GTs would require an OOME instruction.
- Fleet VDI
 - GTs are shown online but will not respond to Fleet VDIs in real-time. GTs require a startup lead time
- Replacement Market
- Responsive Reserve Capacity is utilized to provide UBES at times due to GT startup time

Implementation Plan

- Communicate change to the ROS & WMS
- Market Notification by mid-March

Bal & CT



RRS & OBL

