

A decorative graphic consisting of several thin, overlapping, wavy lines in shades of gray, positioned at the top center of the slide.

PJM Telemetry Requirements for Generation Resources

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June 14, 2021

Data required by PJM that determines system security and stability as well as congestion and LMP

- Fast Scan Rate
 - Used to develop ACE and Regulation values
 - Sent every 2 seconds
- Slow Scan Rate
 - Used to develop dispatch control values, security monitoring and data tracking
 - Sent every 10 seconds
- Hourly Data (metering not telemetry)
 - Accumulated energy values

Real-Time Telemetry Requirements

- The following table taken from M-14D, section 4.2.2 shows the criteria for which a generator may be required to provide real-time telemetry to PJM.
- If one or more of the criteria are true for that generator, then telemetry is required.

Criteria	Real-Time Telemetry Requirements
Generators participating in the PJM market as capacity resources	Real and reactive power
Generators 10 MW (Maximum Facility Output) or larger	Real and reactive power
Generators greater than 1 MW (Maximum Facility Output) and connected at a bus operating at 50 kV or greater	Real and reactive power
Solar parks 3 MW (Maximum Facility Output) or greater	Real and reactive power (see Section 12.2 for additional requirements)
Distributed generators (such as, the treatment of many units dispersed over a wide area as one aggregated unit) modeled less than 10 MW (Maximum Facility Output)	Real and reactive data at the BES injection point of accuracy within 10% of hourly MWh settlements data (revenue meter or accumulator data)
Generators that will also participate as PJM demand response resources when they will reduce load and have PJM-approved interconnection rights to inject power.	Real and reactive data, based on the Generator criteria in this table, at the point of interconnection and real and reactive power for the generators.

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AReg – Assigned Regulation

- Static for hour as a result of market
- Sent by PJM for each resource capable of regulation

RegA – Regulation Control Signal

- Automated Generator Control signal sent by PJM to Resource owner
- Sent every 2 seconds
- Bounded by TReg

RegD – Fast Regulation

- Automated Generator Control signal sent by PJM to Resource owner
- Dynamic signal moves with the frequency deviation component of ACE
- Increases the “utilization” of the energy storage devices

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TReg – Total Regulation

- Resource owner sends one number for the fleet regulation capability

CReg – Current Regulation

- Calculated value where fleet is operating relative to regulation band
- Fleet-wide value sent from Resource owner to PJM
- Sent every 4 seconds

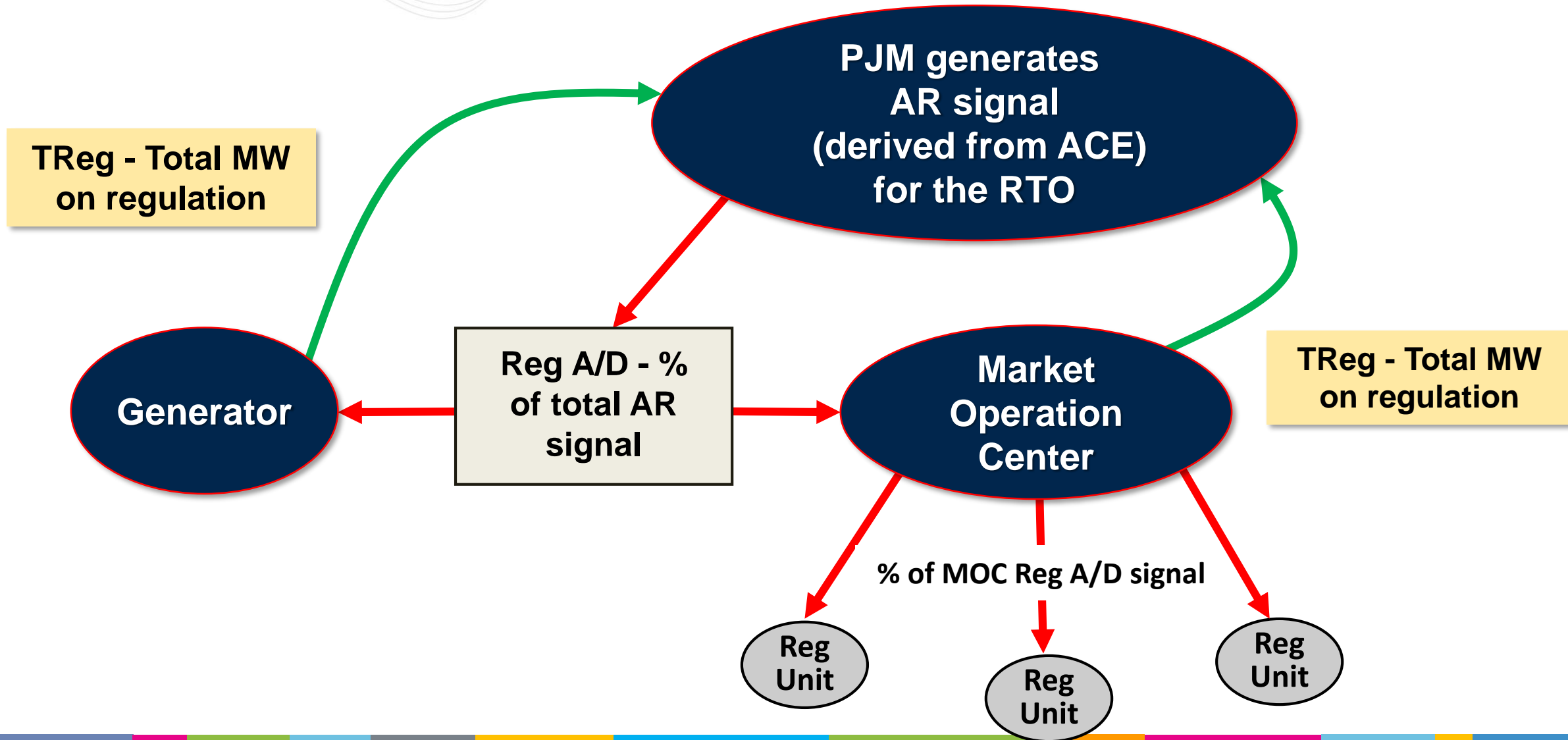
Unit Reg – Resource allocation

- Allocation should be sent as percent allocation for each individual regulating resource of the resource AReg

Eco BP / Load BP – Operational Midpoint

- The point around which the regulating resource (unit, plant or registration) operates

Regulation in Real-Time Operations



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PJM Telemetry Requirements



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