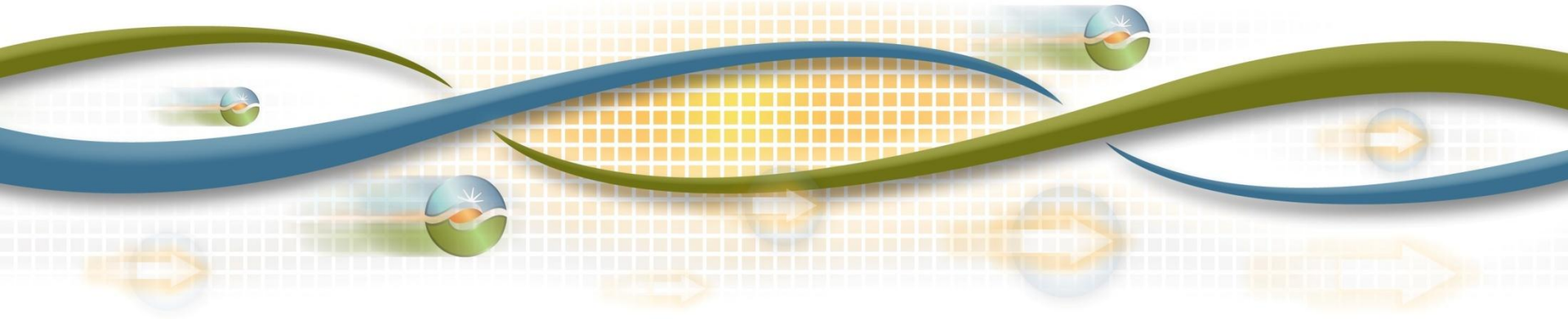![California ISO — Shaping a Renewed Future]

Non-Generator Resource (NGR) and Regulation Energy Management (REM)

Non-Generator Resource Regulation Energy Management Workshop

August 30, 2012

Suggested reading prior to meeting

Business Requirements Specification:

http://www.caiso.com/Documents/BusinessRequirementsSpecification-RegulationEnergyManagementVer1_1-Redline.pdf

MAPP meeting presentations technical update section:

Market performance and planning forum Jul 18, 2012:

http://www.caiso.com/Documents/Agenda_Presentation-MarketPerformance_PlanningForumJul18_2012.pdf

Market performance and planning forum May 23, 2012:

http://www.caiso.com/Documents/Agenda_MarketPerformance_PlanningForumMay23_2012.pdf

Market performance and planning forum Mar 23, 2012:

http://www.caiso.com/Documents/Agenda-MarketPerformance_PlanningForumMar28_2012.pdf

Market performance and planning forum Jan 26, 2012:

http://www.caiso.com/Documents/Agenda_Presentation-MarketPerformance_PlanningForumJan26_2012.pdf

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Non-Generator Resource Regulation Energy Management - Agenda

Time	Topic	Presenter
10:00 – 10:10	Introduction	Chris Kirsten
10:10 – 10:25	NGR/REM overview	Jeremy Malekos
10:25 – 11:00	Non-Generator resources Model overview	Li Zhou /Sirajul Chowdhury
11:00 – 12:00	Market Simulation Structured Scenarios	Li Zhou, James Lynn, Chris McIntosh
12:00 – 1:00	Lunch	All
1:00 – 3:00	Market Simulation Structure	Li Zhou, James Lynn, Chris McIntosh
3:00 – 4:00	Market Simulation Details	Jie Tong

NGR/REM Overview

- NGR/REM is an approved market initiative that is part of Markets and Performance (MAP)

- NGR/REM allows new types of energy storage resources, such as batteries and flywheels, to provide regulation service.

- Implementing NGR/REM will lead to increased participation in the ancillary service market by energy storage and demand response resources and will support the integration of additional renewable resources.

- NGR/REM also allows new storage technologies to provide regulation energy over a continued sustained period.

The ISO faces several challenges in maintaining reliability cost effectively.
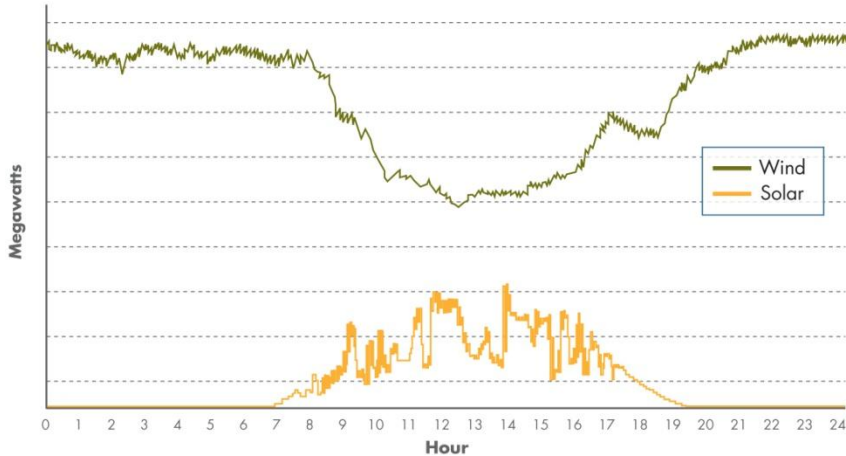
Variability and uncertainty
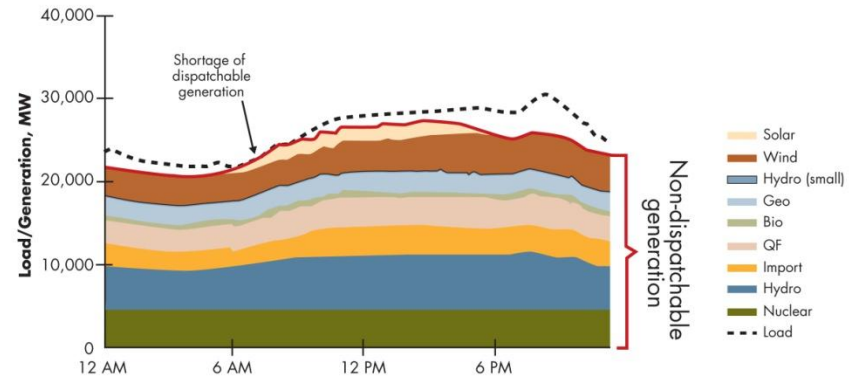
Dispatchability and Overgeneration
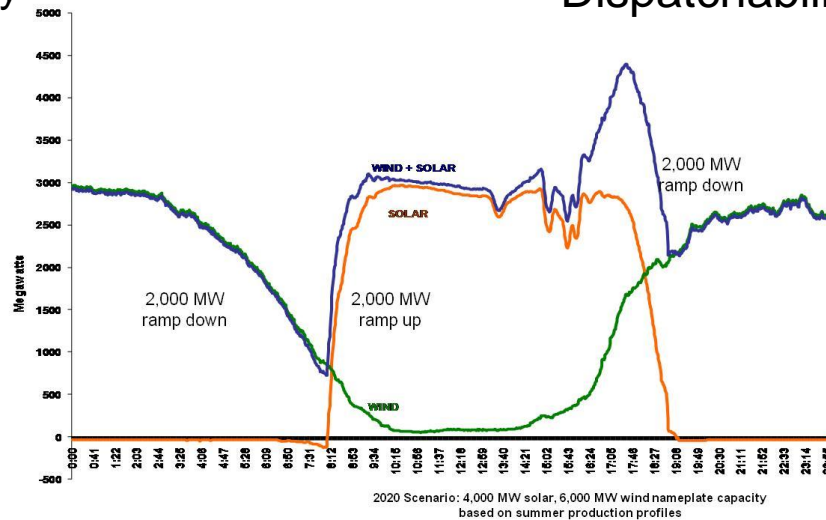
Increased ramping needs

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Storage technology provides a flexible resource for maintaining reliability

- **Energy storage technology examples**
  - Flywheel
  - Lithium Ion battery
  - Sodium Sulfur battery
  - Flow batteries
  - Compressed air energy storage
  - Pumped hydro
  - Electric Vehicles
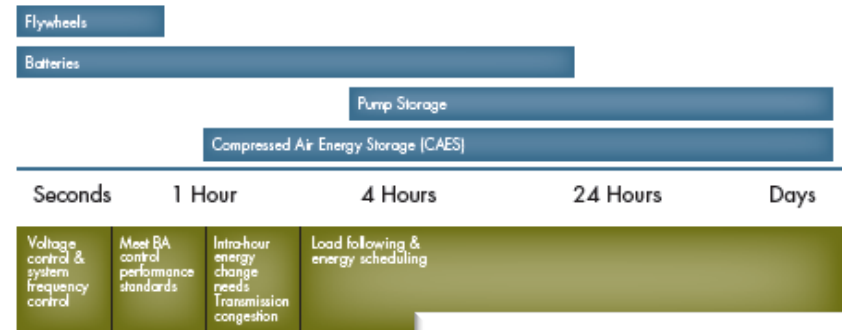
Storage Vision:

Facilitate cost-effective, comparable participation in ISO markets to fully utilize technology capabilities.

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Ancillary services modifications to support non-generation resources – March 2010

- Removed resource type restrictions and reduced minimum rated capacity to 500 kW from 1 MW

- Reduced minimum continuous energy requirement from 2 hours to:
  - Day-Ahead Regulation Up/Down: 60 minutes
  - Real-Time Regulation Up/Down: 30 minutes
  - Spin and Non-Spin: 30 minutes

- Minimum continuous energy measured from the period that the resource reaches the awarded energy output
  - Measurement starts once resource reaches awarded energy, not end of 10 minute ramp requirement

Approved by FERC September 2010

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Regulation energy management provides additional functionality to address limitations of storage resources.

- Barriers to entry still existed even with March 2010 ancillary services modifications to support non-generation resources

- Limited energy resources were unable to participate in day-ahead regulation market at full capacity w/o REM

Example: 20 MW / 5 MWh limited energy resource

Green – prior requirement

Yellow – regulation energy management

Regulation Up

20 MW
15 MW
10 MW
5 MW
0 MW

15   30   45   60
Minutes
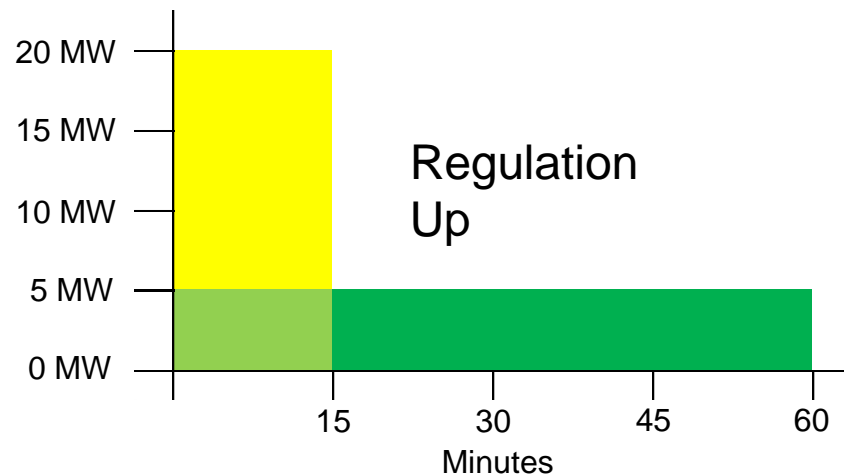
Approved by ISO Board February 2011. Implementation Spring 2013

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Other policy and market design changes applicable to NGR resources

- FERC 755 pay for performance – Spring 2013
  - http://www.caiso.com/Documents/Pay%20for%20performance%20regulation%20-%20implementation

- Flexible ramping operational needs
  - Constraint implemented, product in policy development
  - http://www.caiso.com/informed/Pages/StakeholderProcesses/CompletedStakeholderProcesses/FlexibleRampingConstraint.aspx
  - http://www.caiso.com/informed/Pages/StakeholderProcesses/FlexibleRampingProduct.aspx

- Lowering bid floor – approved by the board. Implements with BCR
  - http://www.caiso.com/informed/Pages/StakeholderProcesses/RenewableIntegrationMarketProductReviewPhase1.aspx

- CPUC LTPP and RA Proceedings
  - ISO operational studies outlining flexibility requirements for bilateral capacity market
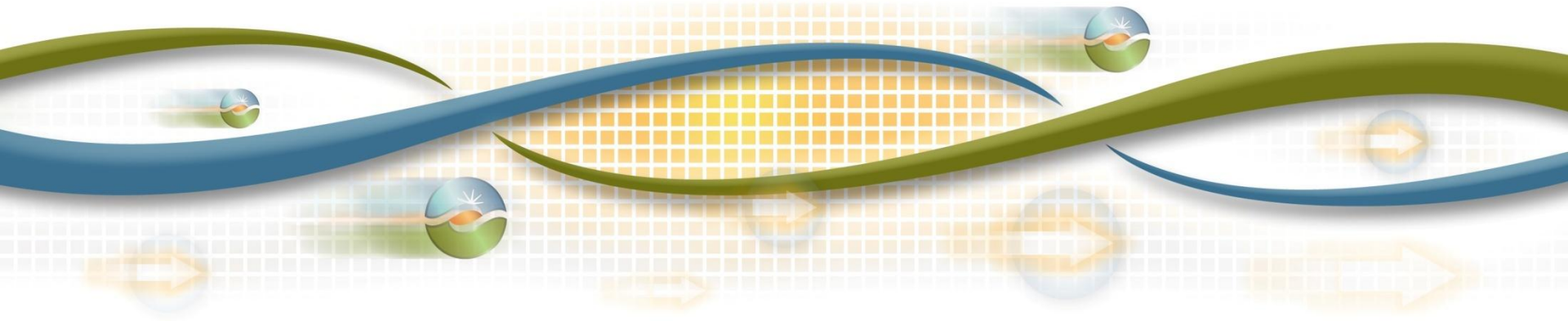 - http://www.cpuc.ca.gov/PUC/energy/Procurement/

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Questions And Answers

Non-Generator Resource Model Overview

L. Zhou/S. Chowdhury

SME

Non-Generator Resource Regulation Energy Management Workshop

NGR and NGR with REM option

1. NGR operates as a generator on positive (generation) and/or negative (load)
2. NGR can be dispatched seamlessly within their entire capacity range.
3. NGR are also constrained by an energy (MWh) limit to generate or consume energy on a continuous basis.

NGR with REM option
1. NGR can elect to participate only in the ISO's regulation markets.
2. The regulation capacity awarded in the day-ahead market is evaluated as 4 times the regulation energy it can provide within 15 minutes.
3. REM functionality will offset (purchase or sell) energy in real-time to meet the continuous energy requirements for regulation.

Non-Generator Resource (NGR) and NGR with REM option

Project	Technology	Model	Option to REM (Special Treatment)	Regulation	Spin/Non-Spin	Energy	Qualified MW
Non-Generator Resource (NGR) (2012) *New functions in EMS, market from bid to Bill*	Limited Energy Storage Resource **(LESR)** (Flywheel, battery, energy storage)	Operation range between negative (Charge) and positive (Discharge), constrained by State of Charge (SOC)	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification
	Dispatchable Demand Response **(DDR) -- Implementation of the PLR model**	Operation range is non positive, constrained by limited curtailable energy.	REM	SC Bid	No	No	15 minute continuous delivery
			Non REM	SC Bid	SC Bid	SC Bid	Depending on registration and certification

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NGR Demand Response (DR) options for Market Simulation

- DR modeled as an LESR REM.

- DR modeled as an LESR NON-REM

- A Demand Response registered using the NGR LESR model does not need to have storage energy limit registered. This is the same as other devices meeting NGR requirements but do not have the physical energy limits.

Certified maximum capacity for the resource will be determined by the option of REM or Non REM

- Example 1: Resource 1: LESR 10 MWH, Pmax = 40 MW, Pmin = -40 MW. Ramp rate = 10 MW/min

MW	REM	Non REM
Regulation Up	40	10
Regulation Down	40	10
Spinning	n/a	20
Non-Spinning	n/a	20
Pmax	40	40
Pmin	-40	-40

Model NGR in EMS with supply range of negative to positive

- EMS shall model NGR as a generation resource with supply range of negative to positive.
  - For LESR

    Ex: A battery is discharging at 2 MW, the operation output will be 2MW. A battery is charging at 2 MW, the output will be -2 MW.
  - For a Demand Response modeled as LESR (Non REM)

    Ex: Demand Load level is 10 MW, the operation output = -10 MW. Its load level is curtailed by 2 MW, operate at 8 MW, the operation output = -8 MW.

- EMS AGC module shall dispatch NGR for regulation up and down
  - NGR provides regulation up if AGC dispatches the NGR above its DOT
  - NGR provides regulation Down if AGC dispatches the NGR below its DOT

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EMS shall receive NGR telemetry every four (4) seconds;

- EMS shall receive NGR telemetry of the following data every four (4) seconds and send to the RTM every minute:

    – Resource Instantaneous Output (MW);
    – For LESR, State of Charge (SOC), which is the actual stored Energy (MWh) in the device;

DAM/RTM model NGR as a generation resource with supply range of negative to positive

- Optimize NGR energy and AS awards in DAM/RTM subject to:
  - Capacity Constraints;
  - Ramping Constraints;
  - State of Charge (SOC) constraints for LESR;
  - Curtail energy limits for DDR;
- NGR optimal schedule and AS awards shall be based on its Energy bid curve and AS bids.
- For LESR (non-REM), SOC constraint is enforced in the IFM, RTPD and RTD
- DAM/RTM will model NGR with energy and/or AS bids as on-line unit; No binary commitment decision variables are needed for NGR. No start up cost /time, No commitment cost recovery.
- RTM shall receive from EMS telemetry for each NGR, including the actual SOC for each LESR, to calculate initial condition. LESR optimal schedule and AS awards shall be limited by the available SOC.

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NGR Settlement

- NGR shall be subject to all existing AS/RUC No Pay categories.

- LESR shall be subject to a new AS/RUC No Pay category: Insufficient
  Stored Energy

  - The relevant No Pay quantity (MW) shall be calculated for each
    dispatch interval to see if SOC level can provide enough energy once
    the awarded AS is called upon

- All energy will be still calculated based algebraic difference between
  different MWs.

  - For example, a DOT of 7MW with a DA schedule of -3MW will possibly
    result in Optimal Energy of 10MW;

- Energy settlement are still based on resource level LMPs and resource
  MWs. A negative MW normally result in a charge rather than payment.

Spin Non-Spin No Pay PC – Current Settlement

- Derive No Pay Spin and Non-Spin Quantities against DA and RT Award and QSP Capacity based upon:
  - Undispatchable – outages, derates, ramp rate limitations
  - Unavailable – Higher meter than expected
  - Undelivered – Failure to provide at least 90% of expected AS
  - Unsynchronized – Spin must be Online. Non-Spin must be online if SC is not certified to provide Non-Spin in RT

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Spin Non-Spin No Pay PC – New Design

- Derive No Pay Spin and Non-Spin Quantities against DA and RT Award and QSP Capacity:
  - Undispatchable – outages, derates, ramp rate limitations, **Insufficient Stored Energy for LESR only**
  - Unavailable – Higher meter than expected
  - Undelivered – Failure to provide at least 90% of expected AS
  - Unsynchronized – Spin must be Online. Non-Spin must be online if SC is not certified to provide Non-Spin in RT

Example: Insufficient Stored Energy Calculation

Spin Cap – Spin Capacity
NSPN Cap - Non-Spin Capacity
SOC – State of Charge
LCL – Lower Charge Limit

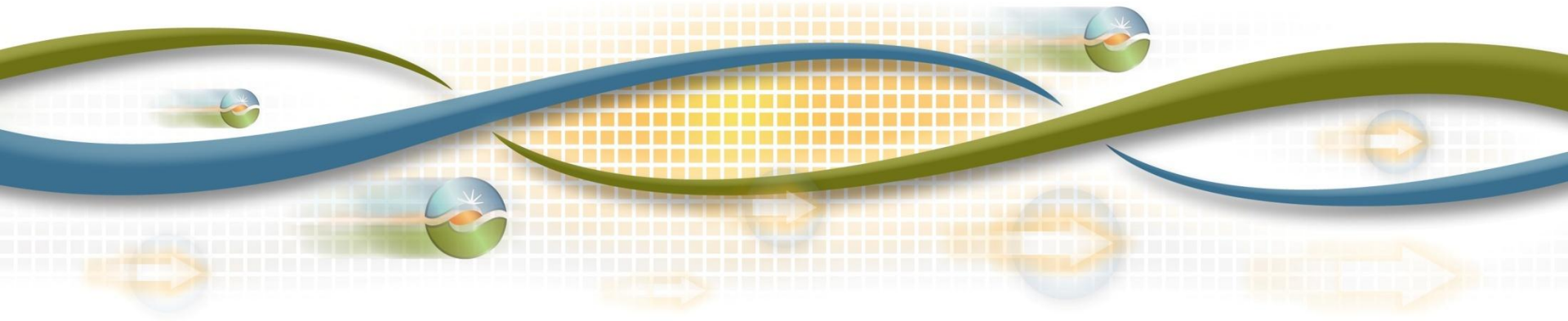| Spin Cap	NSPN Cap	SOC	LCL	Avail Cap	Insuff Spin (priority)	Insuff NSPN
150	50	200	101	SOC – LCL = 99	Spin Cap –Avail Cap =51	(Spin Cap +NSPN Cap) – Avail Cap – Insuff Spin =50

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Questions And Answers

Market Simulation Structured Scenarios

ISO NGR team

SME's

Non-Generator Resource Regulation Energy Management Workshop

Scenario 1

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
1	Description	NGR-REM resource is charging.
	ISO Actions	ISO creates DAM and RTM regulation bids for NGR-REM resources. ISO manipulates market conditions in which NGR-REM resources are consuming. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

Scenario 2

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
2	Description	NGR-REM resource is discharging.
	ISO Actions	ISO creates DAM and RTM regulation bids for NGR-REM resources. ISO manipulates market conditions in which NGR-REM resources are discharging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

Scenario 3

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
3	Description	NGR-REM resource is switching between charging and discharging.
	ISO Actions	ISO creates DAM and RTM regulation bids for NGR-REM resources. ISO manipulates market conditions in which NGR-REM resources are charging then discharging and vice versa. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

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Scenario 4

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
4	Description	Normal system conditions - apply 50% rule to NGR-REM resources.
	ISO Actions	ISO creates DAM and RTM regulation bids for NGR-REM resources. ISO EMS manages the system conditions in which NGR-REM resources are maintained by AGC at their mid point. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	NGR-REM resources are maintained by AGC at their mid point.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

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Scenario 5

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
5	Description	System under stress - AGC uses available energy left indicated by the SOC to meet the ISO's regulation requirement.
	ISO Actions	ISO creates DAM and RTM regulation bids for NGR-REM resources. ISO manipulates market conditions in which the system is under stress. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	50% rule is not enforced, REM resources are expected to recover the SOC so they are capable of providing awarded regulation capacity in both directions.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

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Scenario 6

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
6	Description	Continuous energy charge for one hour - ISO selected NGR non-REM resources, no 50% rule.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which resources are charging for one hour. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and DA energy schedule and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Charging will be signaled by a negative schedule in CMRI and negative DOT in ADS.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6470, CC 6475

Scenario 7

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
7	Description	Fully charge the resource by 18:00 - ISO selected resource, no 50% rule
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which NGR non-REM resources are charging throughout the day. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Charging will be signaled by a negative schedule in CMRI and negative DOT in ADS.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 8

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
8	Description	Across no more than 6 intervals ISO will dispatch NGR non-REM charging and AGC will be charging as well.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which NGR non-REM resources are charging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Negative DOT in ADS and negative AGC set point will be observed.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 9

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
9	Description	Across no more than 6 intervals ISO will dispatch NGR non-REM discharging and AGC will be charging.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which NGR non-REM resources are discharging and charging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Positive DOT in ADS and negative AGC set point will be observed.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 10

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
10	Description	Across no more than 6 intervals ISO will dispatch NGR non-REM charging and AGC will be discharging.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which NGR non-REM resources are charging and discharging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Negative DOT in ADS and positive AGC set point will be observed.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 11

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
11	Description	Across no more than 6 intervals ISO will dispatch NGR non-REM discharging and AGC will be discharging as well.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR-REM resources. ISO manipulates market conditions in which NGR non-REM resources are discharging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities and DA energy schedules in CMRI/ADS and real-time energy dispatch in ADS. Positive DOT in ADS and positive AGC set point will be observed.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 12

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
12	Description	NRG-REM Demand Response ISO will show the LESR by AGC only in positive and negative range - assume no energy limit.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR-REM resources. ISO manipulates market conditions in which NGR REM resources are charging and discharging. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS. AGC will drive the Demand Response resource.
	Anticipated Settlement Outcome	MP should validate : Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475

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Scenario 13

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
13	Description	NGR non-REM demand response ISO will show LESR resource by dispatch and AGC only in the negative range and on a continuous bases - assume no energy limit. This shows effective dispatch and AGC without SOC or CEL.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR non-REM resources. ISO manipulates market conditions in which NGR non-REM resources are dispatched in negative range. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement).
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS. Demand response will be dispatched by negative DOT in ADS.
	Anticipated Settlement Outcome	MP should validate : Capacity: CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; Bid Cost Recovery: CC6620

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Scenario 14

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
14	Description	NGR REM and non-REM SLIC Outage to demonstrate "No Pay" for Spin, Non-Spin and Regulation based on same logic as generator.
	ISO Actions	ISO creates DAM and RTM energy and AS bids for both NGR-REM and non-REM resources, as applicable. ISO creates and approve SLIC outages on the selected resources. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch and settlement statements (energy and regulation capacity settlement). MP's create meter data based on AGC file provided by ISO and submit to ISO by 12:00 @ T+5B.
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS. Settlement Statements reflect "No Pay" for Spin, Non-Spin and Regulation.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6100, CC6170, CC6200, CC 6270, CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6100, CC 6470, CC 6475; No Pay Capacity Charges: CC 6124, CC 6224, CC 6524, and CC 6624.

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Scenario 15

Scenario Number	NGR-REM Phase 2 Structured Scenarios	
15	Description	NGR non-REM ISO to demonstrate "No Pay" for Spin and Non-Spin based on SOC.
	ISO Actions	ISO creates DAM and RTM energy and regulation bids for NGR-REM resources. ISO creates AGC file for resources participating in the scenario.
	SC Actions	Verify AGC file, market results (DA and RT regulation capacity and RT energy dispatch) and settlement statements (energy and regulation capacity settlement). MP's create meter data based on AGC file provided by ISO and submit to ISO by 12:00 @ T+5B.
	Expected Outcome	MP will see regulation capacities in CMRI/ADS and real-time energy dispatch in ADS. Settlement Statements reflect "No Pay" for Spin and Non-Spin.
	Anticipated Settlement Outcome	MP should validate Capacity Payments in Charge Codes: Capacity: CC 6100, CC6170, CC6200, CC 6270, CC 6500, CC 6570, CC 6600, CC 6670; Energy Payments/Charges: CC 6011, CC 6470, CC 6475; No Pay Capacity Charges: CC 6124, CC 6224

Questions And Answers
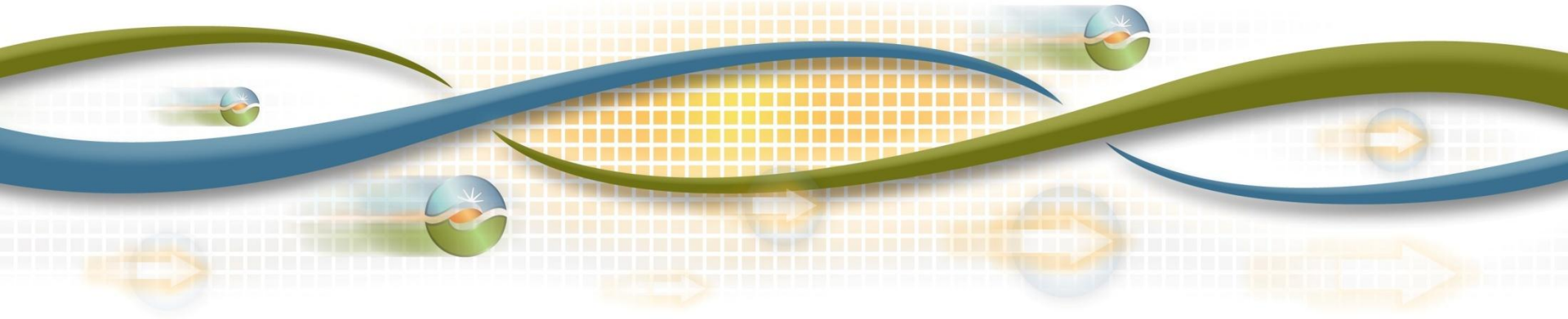
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Market Simulation Details

Jeremy Malekos

Jie Tong

SME

Non-Generator Resource Regulation Energy Management Workshop

Registration and market simulation details

- RDT

    - Outstanding Submission

    - Making changes during market simulation

    - Questions on RDT

- Market Scenarios

    - Select one resource per market participant for select scenarios and AGC files.

    - ISO will provide scenario scheduling prior to market simulation.

Thank you for your time.