ESR Bidding Changes

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Agenda

- Background
- Changes to Upload/Download Templates
  - New fields being added
- Summary
- Q&A

Background

Previous Presentations

Date	Working Group	Discussion points
04-26-18	MIWG	ESR Participation Model: Energy Level Management
06-19-18	MIWG	ESR Metering
06-25-18	MIWG	ESR Settlements: Charges when deviating from NYISO Base Points
07-10-18	MIWG	Energy Market Mitigation Measures for ESRs
7-24-18	MIWG	ESR Market Design Update
7-24-18	MIWG	ESR Settlements - DAMAP, RRAC, RRAP, and Balancing Energy
08-07-18	MIWG	Capacity Market Rules for ESRs
08-14-18	MIWG	Day-Ahead Margin Assurance Payments for ESRs
08-23-18	MIWG	Capacity Market Rules for Energy Storage Resources
08-30-18	MIWG	Scheduling ESRs
08-30-18	MIWG	ESR: Consumer Impact Analysis
09-21-18	MIWG	Capacity Market Rules for ESRs
09-21-18	MIWG	Mitigation Measures for ESRs
04-15-19	MIWG	ESR Bidding Changes

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Bid Parameters

Bid Parameters

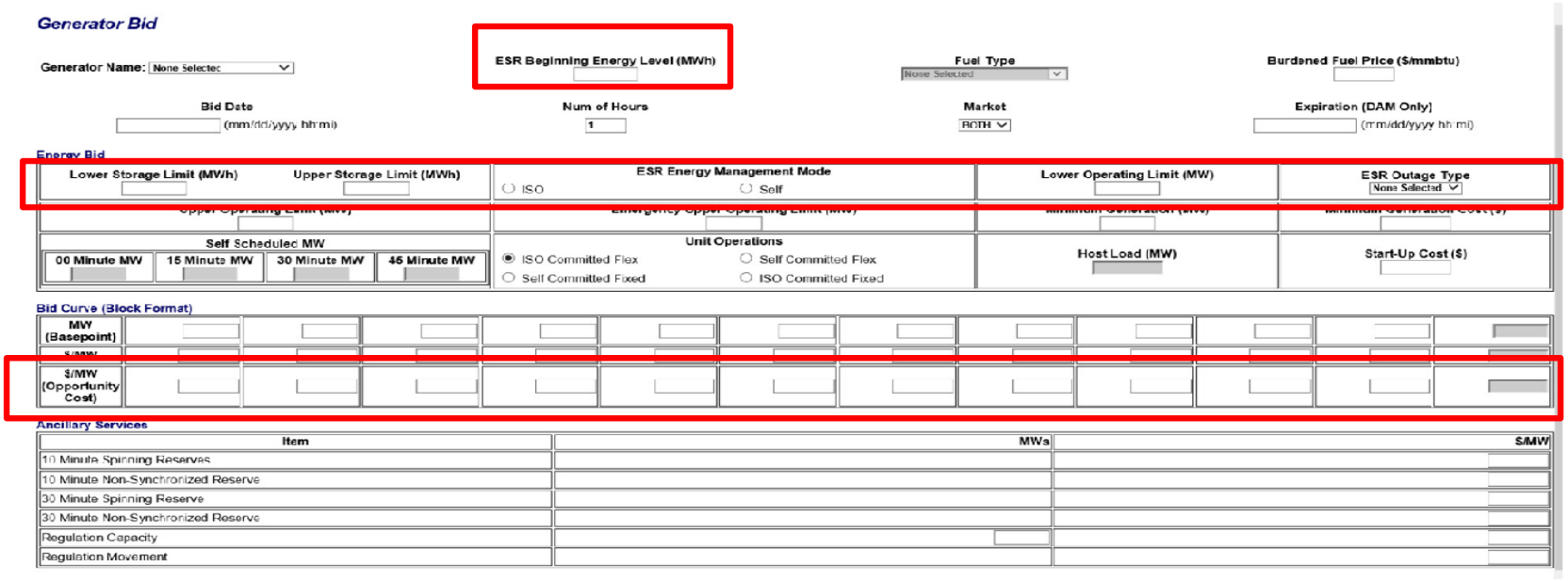
- **All ESRs must submit values for the following parameters with their economic offers:**
  - Normal Upper Operating Limit (MW)
  - Emergency Upper Operating Limit (MW)
  - Lower Operating Limit (MW)
  - Upper Storage Limit(MWh)
  - Lower Storage Limit(MWh)
  - Incremental Bid Curve
  - Market Choice(DAM/RTM)
  - Unit Operation
  - Beginning Energy Level (DAM Only) (MWh)
  - ESR Energy Management Mode (ISO/Self)
  - ESR Outage Type ("N", "P" or "F")
  - Opportunity Cost
    - Up to 11 points
    - Optional for all Generators
    - Corresponds to the $/MWh on the bid curve

Where **BLACK = Existing Generator parameter** and **BLUE = New parameter available only to ESRs**

Submitting ESR Bids

- ESR bids will be managed using same bidding screens and templates as existing Generator Bids

Submitting ESR Bids



Generator Bid

Generator Name: None Selected

ESR Beginning Energy Level (MWh)

Fuel Type: None Selected

Burdened Fuel Price ($/mmbtu)

Bid Date (mm/dd/yyyy hh:mi)

Num of Hours: 1

Market: BOTH

Expiration (DAM Only) (mm/dd/yyyy hh:mi)

Energy Bid

Lower Storage Limit (MWh)	Upper Storage Limit (MWh)	ESR Energy Management Mode	Lower Operating Limit (MW)	ESR Outage Type
		ISO / Self		None Selected

Self Scheduled MW				Unit Operations		Host Load (MW)	Start-Up Cost ($)
00 Minute MW	15 Minute MW	30 Minute MW	45 Minute MW	ISO Committed Flex / Self Committed Flex / Self Committed Fixed / ISO Committed Fixed			

Bid Curve (Block Format)

MW (Basepoint)												
$/MW (Opportunity Cost)												

Ancillary Services

Item	MWs	$/MW
10 Minute Spinning Reserves		
10 Minute Non-Synchronized Reserve		
30 Minute Spinning Reserve		
30 Minute Non-Synchronized Reserve		
Regulation Capacity		
Regulation Movement		

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ESR Bids – Beginning Energy Level

- When submitting a DAM bid, user must specify a "Beginning Energy Level" for ISO Managed ESR units.
- Beginning Energy Level value is applicable for any and all hours of the day. In Real-Time Market, metered value will be used for Energy Level.

ESR Bids – Energy Management Mode

- When submitting a bid the user must specify a 'ESR Energy Management Mode':
  - ISO Managed
  - Self Managed
- Indicates if the Energy Level will be evaluated or not. Only if the User specifies "ISO Managed" will the Energy Level be evaluated.
- User can change Energy Management Mode in Real-Time Market

ESR Bids – Upper Storage Limit and Lower Storage Limit

- **When submitting a bid the user must specify:**
  - Upper Storage Limit
  - Lower Storage Limit

ESR Bid – ESR Outage Type

- When submitting DAM Bid, the user must specify a "ESR Outage Type" of "N" Normal, "P" for Planned Outage and "F" for Forced Outage.
  - Storage Outage must be reported through the bidding platform.

Upload/Download Templates

- Format of the upload/download templates is being revised to accommodate new fields for ESR

Submit Generator Bids Upload – Upload Request Data

- **The data format for each row is as follows:**
  - Generator, date & time, duration, market, expiration, upper operating limit, emergency upper operation limit, fuel type, Burdened Fuel Price, start up cost ($), bid schedule type id, self committed MWs 00, self committed MWs 15, self committed MWs 30, self committed MWs 45, fixed min gen MW, fixed min gen cost, dispatch curve MW 1, dispatch curve MW 2, dispatch curve MW 3, dispatch curve MW 4, dispatch curve MW 5, dispatch curve MW 6, dispatch curve MW 7, dispatch curve MW 8, dispatch curve MW 9, dispatch curve MW 10, dispatch curve MW 11, dispatch curve $/MW 1, dispatch curve $/MW 2, dispatch curve $/MW 3, dispatch curve $/MW 4, dispatch curve $/MW 5, dispatch curve $/MW 6, dispatch curve $/MW 7, dispatch curve $/MW 8, dispatch curve $/MW 9, dispatch curve $/MW 10, dispatch curve $/MW 11, 10 min non-synch cost, 10 min spinning cost, 30 min non-synch cost, 30 min spinning cost, regulation capacity MWs, regulation capacity cost, regulation movement cost, Opportunity curve $/MW 1, Opportunity curve $/MW 2, Opportunity curve $/MW 3, Opportunity curve $/MW 4, Opportunity curve $/MW 5, Opportunity curve $/MW 6, Opportunity curve $/MW 7, Opportunity curve $/MW 8, Opportunity curve $/MW 9, Opportunity curve $/MW 10, Opportunity curve $/MW 11, ESR Beginning Energy Level, Lower Storage Limit, Upper Storage Limit, Energy Management Mode, Lower Operating Limit, ESR Outage Type, Host Load

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Submit Generator Bids Upload – Upload Response Data

- **Response files will contain the following data**
  - Generator name, Generator PTID, date & time, market, expiration, upper operating limit, emergency upper operating limit, fuel type, Burdened Fuel Price, start-up cost ($), bid schedule type id, self committed MWs 00, self committed MWs 15, self committed MWs 30, self committed MWs 45, fixed min gen (MW) fixed min gen cost ($), dispatch curve MW 1, dispatch curve MW 2, dispatch curve MW 3, dispatch curve MW 4, dispatch curve MW 5, dispatch curve MW 6, dispatch curve MW 7, dispatch curve MW 8, dispatch curve MW 9, dispatch curve MW 10, dispatch curve MW 11, dispatch curve MW 12, dispatch curve $/MW 1, dispatch curve $/MW 2, dispatch curve $/MW 3, dispatch curve $/MW 4, dispatch curve $/MW 5, dispatch curve $/MW 6, dispatch curve $/MW 7, dispatch curve $/MW 8, dispatch curve $/MW 9, dispatch curve $/MW 10, dispatch curve $/MW 11, dispatch curve $/MW 12, 10 min non-synch cost, 10 min spinning cost, 30 min non-synch cost, 30 min spinning cost, regulation capacity MWs, regulation capacity cost, regulation movement cost, bid id, bid status, message, Opportunity curve $/MW 1, Opportunity curve $/MW 2, Opportunity curve $/MW 3, Opportunity curve $/MW 4, Opportunity curve $/MW 5, Opportunity curve $/MW 6, Opportunity curve $/MW 7, Opportunity curve $/MW 8, Opportunity curve $/MW 9, Opportunity curve $/MW 10, Opportunity curve $/MW 11, Opportunity curve $/MW 12, ESR Beginning Energy Level, Lower Storage Limit, Upper Storage Limit, Energy Management Mode, Lower Operating Limit, ESR Outage Type, Host Load

Summary

Summary

- ESR will have the following new Bidding Parameters
  - Lower Operating Limit (MW)
  - Upper Storage Limit (MWh)
  - Lower Storage Limit (MWh)
  - Beginning Energy Level (DAM Only) (MWh)
  - ESR Energy Management Mode (ISO/Self)
  - ESR Outage Type (Storage) (Normal -“N” , Planned -“P” or Forced -“F”)
- All Generators will have the option of providing Opportunity Cost
    - Up to 11 points
    - Corresponding to the $/MWh on the bid curve

Next Steps

Questions?

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policy makers, stakeholders and investors in the power system

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