

regardless of their minimum run-time status. This pass shall establish “hybrid base points” (i.e., real-time Energy schedules) that are used in the third pass to determine whether minimum run-time constrained Fixed Block Units should be blocked on at their UOL_N or UOL_E , whichever is applicable, or dispatched flexibly. The ISO will not use schedules for Energy, Regulation Service and Operating Reserves established in the second pass to dispatch Resources.

The upper and lower dispatch limits used for ISO-Committed Fixed and Self-Committed Fixed Resources, as well as for Dispatchable Generators scheduled to provide Regulation Service, shall be the same as the physical base points calculated in the first pass.

The upper dispatch limit for the first time point of the second pass for a Dispatchable Resource not scheduled to provide Regulation Service shall be the higher of: (A) its upper dispatch limit from the first pass; or (B) its “pricing base point” from the first time point of the prior RTD interval adjusted ~~down~~up within its Dispatchable range for any possible ramping since that pricing base point was issued.

The lower dispatch limit for the first time point of the second pass for a Dispatchable Resource not scheduled to provide Regulation Service shall be the lower of: (i) its ~~upper~~lower dispatch limit from the first pass; or (ii) its pricing base point for the first time point of the prior RTD interval adjusted down within its Dispatchable range to account for any possible ramping since that pricing base point was issued.

The upper dispatch limit for the later time points of the second pass for a Dispatchable Resource that was not scheduled to provide Regulation Service in the first pass shall be

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- The Marginal Losses Component of the LBMP at each location shall be calculated as the product of the LBMP calculated for the Reference Bus (according to Section I.A.1) and a quantity equal to the delivery factor produced by RTD for that location minus one.
- The Congestion Component of the LBMP at each such location shall be calculated as the LBMP at that location, minus the LBMP calculated for the Reference Bus (according to Section I.A.1), minus the Marginal Losses Component of the LBMP at that location.

B. Day-Ahead LBMP Calculation Procedures

LBMPs in the Day-Ahead Market are calculated using ~~six-five~~ passes. The first ~~three-two~~ passes are commitment and dispatch passes; ~~Passes 4, 5 and 6~~ the last three are dispatch only passes.

Pass 1 consists of a least cost commitment and ~~ideal~~ dispatch to meet Bid Load and reliable operation of the NYS Power System ~~that assumes that all Fixed Block Units are dispatchable on a “flexible basis” (they can be dispatched anywhere between zero (0) MW and their maximum Capacity)~~ and that includes Day-Ahead Reliability Units.

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It consists of several steps. Step 1A is a complete Security Constrained Unit Commitment to meet Bid Load. At the end of this step, committed Fixed Block Units, Imports offers, Exports Bids, virtual supply, virtual load and demand Bids and committed Demand Side Resources and non-Fixed Block Units are dispatched to

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meet Bid Load with Fixed Block Units treated as dispatchable on a flexible basis. For mitigation purposes, LBMPs are calculated from this dispatch. Following Step 1A, SCUC tests for automated mitigation procedure (“AMP”) activation.

If AMP is activated, Step 1B ~~applies the AMP impact tests~~ to determine if the AMP will be triggered by mitigating offer prices subject to mitigation that exceed the conduct threshold to their respective reference prices. These mitigated offer prices together with all originally submitted offer prices not subject to automatic mitigation are then used to commit generation and dispatch energy to meet Bid Load. This step is another iteration of the Security Constrained Unit Commitment process. At the end of Step 1B, committed Fixed Block Units, Imports ~~offers~~, Exports ~~Bids~~, virtual supply, virtual load and demand Bids, ~~and committed Demand Side Resources~~, and non-Fixed Block Units are again dispatched to meet Bid Load using the same mitigated or unmitigated Bids used to determine the commitment to meet Bid Load, with Fixed Block Units treated as dispatchable on a flexible basis. For mitigation purposes, LBMPs are again calculated from this dispatch. The LBMPs determined at the end of Step 1B are compared to the LBMPs determined at the end of Step 1A to determine the hours and zones in which the impact test is met.

In Step 1C, generation offer prices subject to mitigation that exceed the conduct threshold are mitigated for those hours and zones in which the impact test was met in Step 1B. The

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mitigated offer prices, together with the original unmitigated offer price of units whose offer prices were not subject to mitigation, or did not trigger the conduct or impact thresholds, are used to commit generation and dispatch energy to meet Bid Load. This step is also a complete iteration of the Security Constrained Unit Commitment process. At the end of Step 1C, committed Fixed Block Units, Imports ~~offers~~, Exports Bids, virtual supply, virtual load and demand Bids, ~~and committed~~ Demand Side Resources, and non-Fixed Block Units are again dispatched to meet Bid Load, with Fixed Block Units treated as dispatchable on a flexible basis. For mitigation purposes, LBMPs are again calculated from this dispatch.

All Demand Side Resources and non-Fixed Block Units committed in the final step of Pass 1 (which could be either step 1A, 1B, or 1C depending on activation of and the AMP) are blocked on at least to minimum load in Passes 4 through 6. The cost of meeting resources required to meet local system reliability ~~is~~ are determined in Pass 1.

Pass 2 consists of a least cost commitment and dispatch of Fixed Block Units, Imports ~~offers~~, Exports Bids, Demand Side Resources and non-Fixed Block Units to meet forecast Load requirements in excess of Bid Load, considering the Wind Energy Forecast, that minimizes the cost of incremental Minimum Generation and Start Up Bids, given revenues for Minimum Generation Energy based on LBMPs calculated in Pass 1, and assumes all Fixed Block Units are dispatchable on a flexible basis. Incremental Import Capacity needed to meet forecast Load requirements is determined in Pass 2. Fixed Block Units dispatched committed in this pass are not blocked on included in the least cost dispatches of in Passes 5 or 6. Demand Side Resources and Non-Fixed Block Units committed in this step are blocked on at least to minimum Load in Passes 4 through 6. Intermittent Power Resources that depend on wind as their fuel committed in this pass as a result of the consideration of the Wind Energy Forecast are not blocked in Passes 5 or 6.

~~Pass 3 consists of a least cost commitment and dispatch of Fixed Block Units, Import offers, Export Bids, and non-Fixed Block Units to meet forecast Load requirements in excess of~~

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~~Bid Load, considering the Wind Energy Forecast, that minimizes the cost of Minimum Generation and Start Up Bids, given revenues for Minimum Generation Energy based on LBMPs calculated in Pass 1 and assumes all Fixed Block Units are dispatchable on a flexible basis. Fixed Block Units dispatched in this Pass are not blocked on in Pass 6. Non-Fixed Block Units committed in this step are blocked on at minimum Load in Passes 4 through 6.~~

~~Intermittent~~

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~~Power Resources that depend on wind as their fuel committed in this pass as a result of the consideration of the Wind Energy Forecast are not blocked in Passes 5 or 6. The difference between Pass 2 and Pass 3 is the inclusion of the In-City reserve and second-contingency local reliability criteria. Incremental Import Capacity needed to meet forecast Load requirements is determined in Pass 3. The costs of satisfying forecast Load and Local Reliability Rules are determined in Pass 3.~~

Pass 3 is reserved for future use.

Pass 4 consists of a least cost dispatch to forecast Load. It is not used to set schedules or prices. It is used for operational purposes and provides a dispatch of Fixed Block Units, Imports s offers, Exports, Bids and the Demand Side Resources and non-

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Fixed Block Units committed in Passes ~~3-1 or 2~~ (the “Day-Ahead committed resources”) against ~~forecast Loads~~. Incremental Import Capacity committed calculated in Pass 2 is re-evaluated and may be reduced if no longer required.

Pass 5 consists of a least cost dispatch of Fixed Block Units, Imports ~~offers~~, Exports ~~Bids~~, virtual supply, virtual load, and ~~demand Bids and Day-Ahead committed resources~~ Demand Side Resources and non-Fixed Block Units committed (covered in prior pass descriptions; confusing what “passes 1 or 2” applies to) to meet Bid Load, based where appropriate on offer prices as mitigated in Pass 1. Fixed Block Units are treated as dispatchable on a flexible basis; LBMPs used to settle the Day-Ahead Market are calculated from this dispatch. The Shadow Prices used to compute Day-Ahead Market clearing prices for Regulation Service and for Operating Reserves in Rate Schedules 3 and 4 of this ISO Services Tariff are also calculated from this dispatch. Final schedules for all Imports, Exports, virtual supply, virtual load, Demand Side Resources and non-Fixed Block Units in the Day-Ahead market are calculated from this dispatch.

Pass 6 consists of a least cost dispatch of all Day-Ahead committed Resources, Imports, ~~offers~~, Exports ~~Bids~~, and virtual supply, virtual load and ~~demand Bids to meet Bid Load~~, based where appropriate on offer prices as mitigated in Pass 1, with the schedules of all Fixed Block Units dispatched committed in the final step of Pass 1 ~~or dispatched above zero in Pass 5~~ blocked on at maximum Capacity. ~~The schedules of dispatchable units and Imports may be backed down, and Export schedules may be increased, to offset the additional Capacity scheduled on these Fixed Block Units.~~ Final schedules for Fixed Block Units in the Day-Ahead Market are calculated from this dispatch.

C. LBMP Calculation Method

System marginal costs will be utilized in an *ex ante* computation to produce Day-Ahead and Real-Time LBMP bus prices using the following equations.

The LBMP at bus *i* can be written as:

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$$\gamma_i = \lambda^R + \gamma_i^L + \gamma_i^C$$

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