

On Ramps and Off Ramps: Kickoff Discussion

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ICAPWG

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Agenda

- Background
- Project Design Statement
- Market Design Principles
- PJM Zone Triggers
- ISO-NE Zone Triggers
- Next Steps -2017 Sequence of Events
 - Goal: 2017 Stakeholder Vote

Background

- **Seven Locality elimination working group presentations made to and discussed with stakeholders from 2014 to present**
- **April 4, 2017 ICAPWG presentation regarding zone elimination rules:**
 - “The NYISO plans to invite stakeholder input for a holistic approach to evaluating Locality creation and elimination Rules as part of the “On Ramps and Off Ramps for Zones” market concept project to be undertaken later this year”

Project Design Statement and Goal

Project Design Statement and Goal

- **Project Design Statement:**

Develop a robust and transparent process for the creation and elimination of capacity zones based on reliability principles to ensure locational capacity prices reflect market conditions

- **Project Goal 2017:**

BIC vote on Zone Creation and Elimination Criteria

Market Guiding Principles

Market Guiding Principles

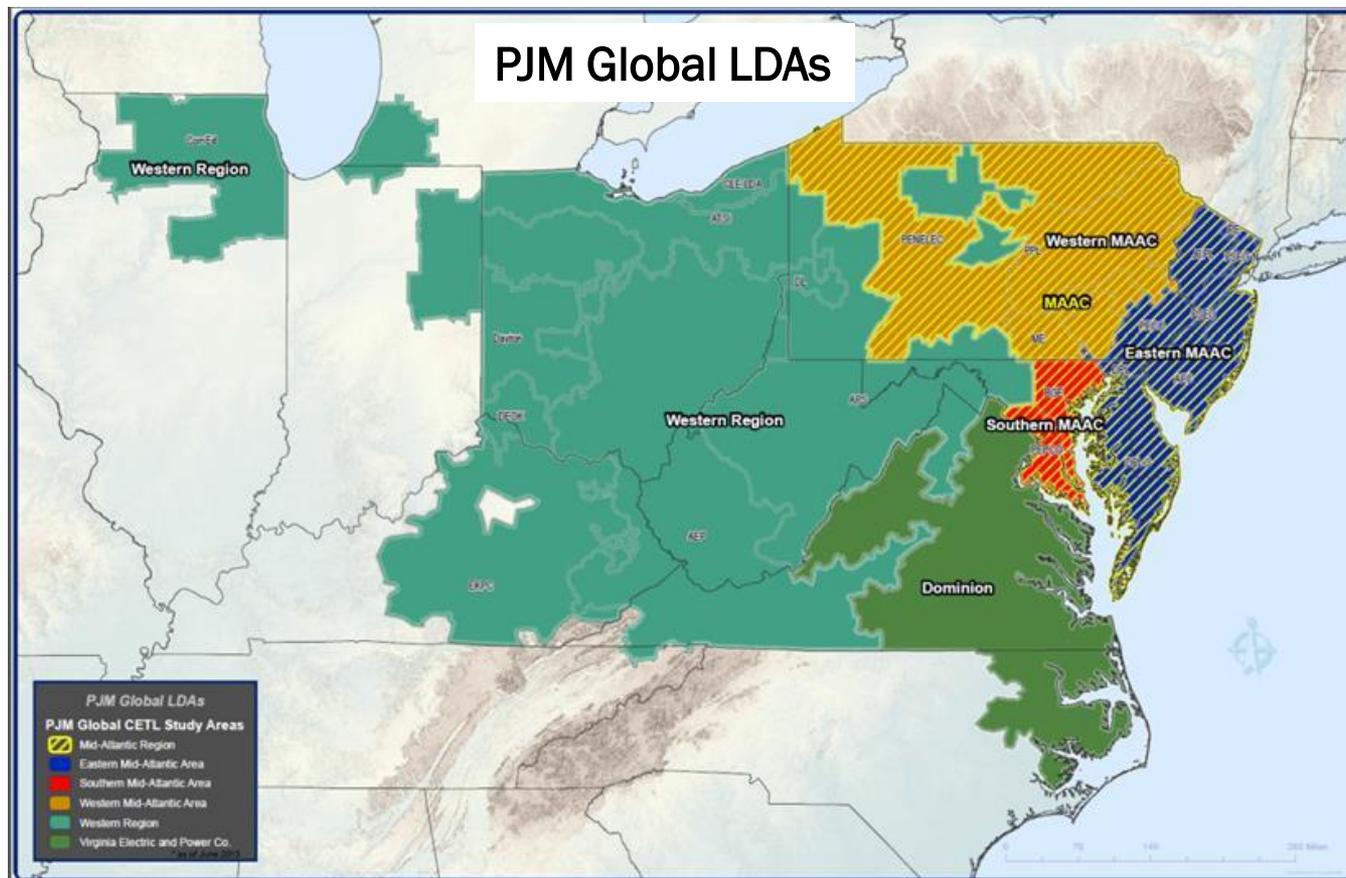
Efficient Market Signals

Transparent and Robust

- Maintain reliability
 - timely creation for reliability concerns
 - timely elimination when reliability concerns obviated
- Incent appropriate investment
 - Locational Price Signals
 - Adequate supply where needed
- Stable and Predictable
 - Anti -toggling
- Market risk borne by Market Participant
- Functions well over wide range of system / market conditions

Regional ISO/RTO Zone Creation Triggers

- **Survey of PJM and ISO-NE Methodologies**
 - Explicit triggers to model/create zones (localities)
 - Not triggering/modeling a locality is the functional equivalent of eliminating a locality



Regional ISO/RTO Zone Creation Triggers: PJM

Transmission Security Based Trigger

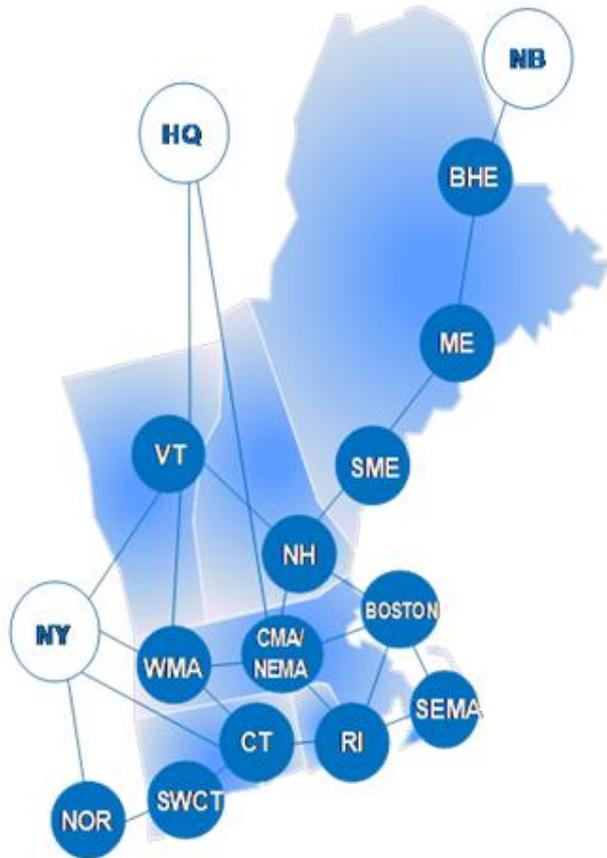
- **Locational Deliverability Area (LDA) is modeled as import constrained if $CETL < CETO * 1.15$**
 - CETL = Capacity Emergency Transfer Limit , CETO = Capacity Emergency Transfer Objective
 - CETL - transmission system capability required to support load in a given area experiencing a localized capacity emergency with a 90/10 load forecast
 - CETO - the amount capacity an given area must be able to import in order to remain within a LOLE of 1 event in 25 years
 - CETO /CETL determined in the annual assessment of transmission transfer capability conducted under the Regional Transmission Expansion Planning Protocol (RTEP)
- **Price separation only occurs when the constraint is binding**

Regional ISO/RTO Zone Creation Triggers: PJM

Supplementary Triggers

- **Additional Criteria PJM utilizes to model a LDA (*i.e.*, Locality) :**
 - LDA's that have had price separation in any of the three preceding Base Residual Auctions (BRAs)
 - PJM determines LDA is likely to have a Locational Price Adder based on historic offer price levels
 - EMAAC, SWMAAC, and MAAC will be modeled as constrained regardless of above test outcomes
 - PJM may decide to model an LDA as constrained regardless of above test outcomes if there are other reliability concerns
- **All LDAs are evaluated against modeling criteria; results are posted 3 months before each BRA**
 - LDAs that do not trigger modeling based on the above criteria, are not modeled in the auction, and cannot separate in price

ISO-NE Subareas and Three External Balancing Authority Areas



Subarea Designation	Region or State
BHE	Northeastern Maine
ME	Western and central Maine/ Saco Valley, New Hampshire
SME	Southeastern Maine
NH	Northern, eastern, and central New Hampshire/eastern Vermont and southwestern Maine
VT	Vermont/southwestern New Hampshire
BOSTON (all capitalized)	Greater Boston, including the North Shore
CMA/NEMA	Central Massachusetts/ northeastern Massachusetts
WMA	Western Massachusetts
SEMA	Southeastern Massachusetts/ Newport, Rhode Island
RI	Rhode Island/bordering Massachusetts
CT	Northern and eastern Connecticut
SWCT	Southwestern Connecticut
NOR	Norwalk/Stamford, Connecticut
NB, HQ, and NY	New Brunswick (Maritimes), Hydro-Québec, and New York external balancing authority areas

Regional ISO/RTO Zone Creation Triggers: ISO-NE

Import Constrained Zones – Transmission Security Based Trigger

- **Model import-constrained Capacity Zones when the Transmission Security Analysis (TSA) requirement is greater than the Existing Qualified Capacity (EQC) in the zone, with the largest generating station in the zone modeled out-of-service**
- **TSA determines sub-area requirements to meet load through internal generation & import capacity**
 - If $TSA > (Existing\ Qualified\ Capacity - Largest\ generating\ station)$, create a zone
 - $TSA\ Requirement = (90/10\ Load\ Forecast - (N-1-1_Transmission_Capability)) / (1-EFORd)$
 - Uses annual assessment of transmission transfer capability conducted in the Regional System Plan

Regional ISO/RTO Zone Creation Triggers – ISO-NE

Export Constrained Zone - Resource Adequacy Based

- **Model export-constrained Capacity Zones for which the Maximum Capacity Limit (MCL) is less than the sum of the Existing Qualified Capacity (EQC) and proposed new capacity**
 - MCL = the maximum amount of resources that can be purchased within the export-constrained load zone (to meet the net ICR for the New England Control Area)
 - MCL = net ICR New England Control Area - LRA Rest of New England, where:
 - Net ICR is the Installed Capacity MW Requirement for New England (net of HQ),
 - LRA is the minimum Local Resource Adequacy MW requirement for the Rest of New England if it were treated as an import constrained Zone
 - Create an export constrained zone If $MCL < (EQC + \text{Proposed New Capacity})$

PJM and ISO-NE Zone Creation Rules May Inform the NYISO's Development of Zone Creation and Eliminate Rules

- **NYISO specific market design considerations**
 - Near term market; not 3 year forward
 - Localities contained within other Localities, with hierarchal pricing rules

Next Steps – 2017 Sequence of Events

Today Introduction and Kickoff - July

Develop Initial Concept -August

Refine Methodology – August/September

Defining Processes – August /Sept

Market Benefits and Consumer Impact Analysis -August /Sept

Address Open Issues - October

Proposal for Vote - November

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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