

# WESTERN ENERGY IMBALANCE MARKET

## Generator Contingency & Remedial Action Scheme Modeling Proposal

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## Proposes to enhance the real-time market

- Current market only ensures electrical flows do not overload lines in the event a transmission line is lost
- Proposed enhancements will also model:
  - Potential loss of a generator, i.e., “generator contingency”
  - Potential remedial action scheme operation
- Remedial action schemes automatically disconnect generators and/or load in the event of an unexpected loss of service of a transmission line to prevent overloads on other lines

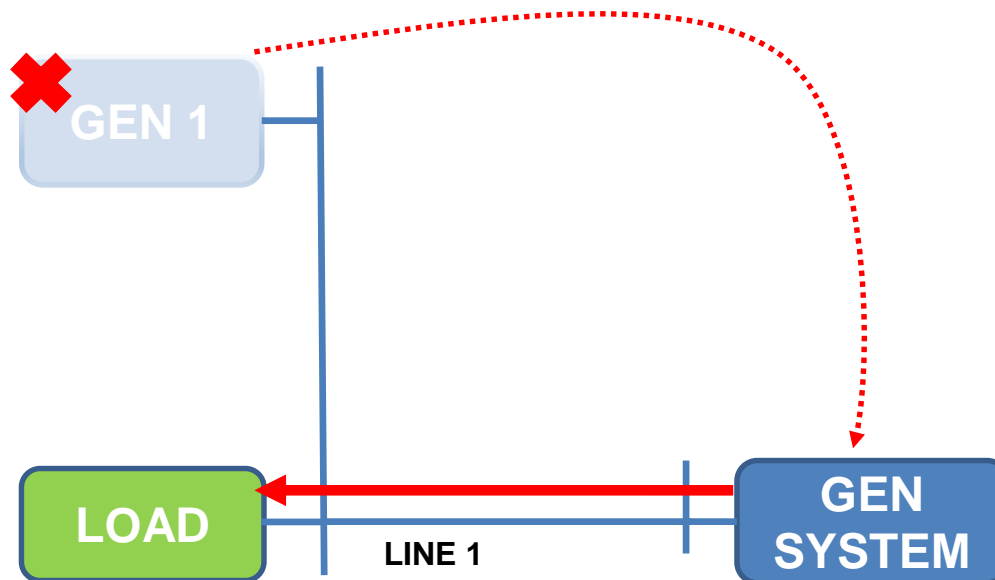
## Enhancements will improve market efficiency and transparency by reducing out-of-market actions

- Grid operators currently issue out-of-market manual dispatches to manage potential generator contingencies and remedial action schemes
- Proposed modeling will more appropriately reflect congestion in locational marginal prices, improving generator dispatch
- Allow the market to more fully utilize generation that is part of a remedial action scheme

# Generator contingency modeling proposal

## Models the “pick-up” effect of the system for a generator loss

- Consistent with reliability studies for generator loss
- Consistent with operator’s real-time contingency analysis tool
- Incorporate the potential change in electrical flows into locational marginal prices



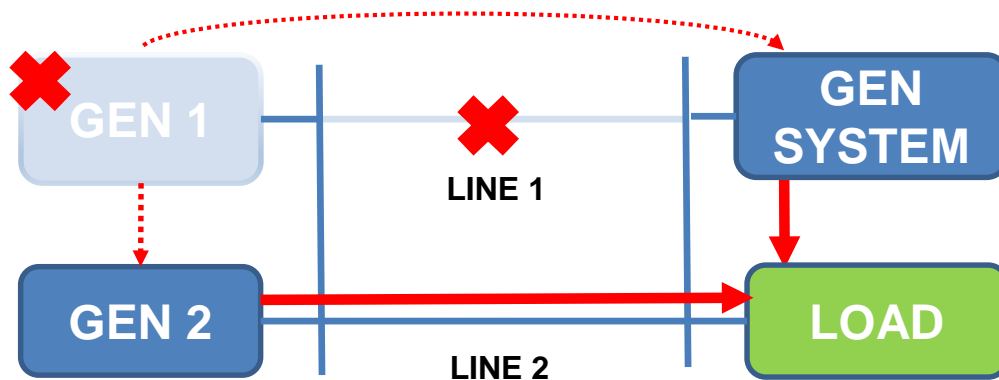
Loss of generation spread to other online resources to model transmission line flows.

**GEN 1** output picked up by **GEN SYSTEM**.

**GEN 1** locational marginal price considers flows on **LINE 1** due to pick-up by **GEN SYSTEM**.

# Remedial action scheme modeling proposal

## Models that generator on remedial action scheme trips-off if line is lost



**GEN 1** is part of remedial action scheme and trips off if **LINE 1** or **LINE 2** go out

**GEN 2** is not on remedial action scheme

**GEN 1** locational marginal price considers that **GEN 1** will not overload **LINE 1** or **LINE 2** if they go out.

**GEN 1's** locational marginal price has a lower congestion component than **GEN 2**

## Initiative includes components within EIM Governing Body's primary decisional authority and components within its advisory role

- Allowing EIM Entities to have market model generator contingencies and/or remedial action schemes in their balancing areas is within primary approval authority
- General design is within advisory role

Management requests the EIM Governing Body approve allowing EIM Entities to have the option to have the ISO model generator contingencies and remedial action schemes in their respective balancing areas

- Replaces manual operator monitoring and action
- Incorporates generator contingencies and remedial action schemes into the market
- Stakeholders support, with some exceptions
- Market Surveillance Committee and Department of Market Monitoring support