California ISO
Shaping a Renewed Future

Decision on Energy Imbalance Market Design

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EIM allows balancing authorities in the West to voluntarily participate in a real-time market operated by the ISO.

- **Increased reliability**: Provides information that improves operational awareness and responsiveness to grid conditions across its large footprint

- **Improved renewable integration**: Helps integrate renewable resources by capturing the benefits of geographic diversity

- **Cost savings**: Benefits all by serving energy imbalance needs from the most economic resources in a larger pool

EIM leverages the full functionality of the ISO's advanced real-time market platform.

Real-time dispatch	5-minute dispatch to meet energy imbalances
Real-time unit commitment	Issues start-up and shut down instructions to short and quick start units Financially binding 15-minute energy schedule: internal generation, import, export
Hour-ahead process	Schedules hourly block imports/exports
Market power mitigation	Mitigates bids with market power

EIM design provides flexibility for EIM balancing authority to develop rules within its tariff framework

- Requirements for participation in its area
  - Transmission service
  - Forecast submission
- Settlement of imbalances for non-participating resources and loads
  - Definition of load aggregation points
  - Utilization of resource specific locational marginal prices
- Allocation of its neutrality accounts

EIM design includes elements to manage seams issues since multiple balancing authorities are participating.

- Resource sufficiency evaluation looks at balance, feasibility and flexibility to address capacity “leaning”

- Reciprocity for transmission used for EIM transfers between California ISO and PacifiCorp for first year

EIM design includes elements to ensure appropriate cost allocation.

- Real-time congestion uplift impacts from the base schedules of other balancing authorities are managed
- Neutrality accounts calculated for each balancing authority, considering EIM transfers where appropriate
- EIM dispatch algorithm will include greenhouse gas bid adder for imbalance energy that transfers to the ISO

ISO has safeguards in place if unexpected market issues arise:

- Authority to limit transfers between EIM balancing authorities
- Market functionality to model flow entitlements between EIM balancing authorities
- Ability to mitigate market power at the balancing authority level

ISO will conduct robust testing & market simulation.

- Management will brief the Board on market simulation results in Summer 2014
  - Review phase-in of EIM transfers if appropriate

- If necessary, Management will seek Board approval to activate software functionality to address:
  - Significant impacts to real-time congestion between EIM balancing authorities
  - Market power at a balancing authority level

Management recommends the Board approve the proposal.

- EIM has moved from concept to a design which will be operational on October 2014
- There is broad support for establishing an energy imbalance market in the West
- Finally, the design is robust and will allow other balancing authorities to join the EIM expanding the benefits for all in the West