Legal Disclaimers and Admonitions

This presentation provides a general overview of the Texas Nodal Market and is not intended to be a substitute for the ERCOT Protocols, as amended from time to time. If any conflict exists between this presentation and the ERCOT Protocols, the ERCOT Protocols shall control in all respects.

For more information, please visit:

http://www.ercot.com/mktrules/nprotocols/
Housekeeping

- Restrooms
- Refreshments
- Attendance sheet
- Questions

Please silence smart phones & other electronics
Course Topics

CRR Auction

- Charges & Payments for CRRs
- Revenue Distribution

for CRRs
Course Topics

CRR Auction
- Charges & Payments for CRRs
- Revenue Distribution

DAM
- Participation in DAM
  - Energy
  - AS
  - PTP Obligations
- DAM Commitment
  - Make-Whole
- Settlement of CRRs purchased in the Auction
**Course Topics**

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**CRR Balancing Account**
- Reconcile CRR Short payments

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  - Make-Whole
  - Clawback
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Real-Time
- Real-Time Activities
  - Imbalances
  - Base Point Deviations
  - Other odds & ends
- Settlement of PTP Obligations purchased in the DAM
- Real Time Ancillary Service Settlements
- Revenue Neutrality
Course Topics

Statements & Invoicing

CRR Balancing Account

Real-Time

CRR Auction

DAM

RUC
• Review Operational Concepts
• Define operational impact to settlements
• Settlement Examples
  • Payments
  • Charges
  • Revenue Neutrality
    – Direct Assignment
    – Obligation
    – Load Allocation
Cast of Characters
Please let us know your:

• Name

• Company for which you work

• Market Entity
  • QSE
  • TSP
  • ERCOT
  • Resources
  • Other

• Experience in the industry or experience with Settlements
Activity: Market Settlement Terminology

Terminology – Something old; Something new

As a class, we will:

• See two definitions on the screen for a Nodal Settlements term

• Choose which statement is true
**Locational Marginal Pricing (LMP):**

<table>
<thead>
<tr>
<th>Description</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>The marginal cost of relieving one MW of congestion on a Transmission constraint</td>
<td>?</td>
</tr>
<tr>
<td>The marginal cost of serving the next increment of Load at an Electrical Bus</td>
<td>?</td>
</tr>
</tbody>
</table>
## Activity: Market Settlement Terminology

### Settlement Point Price:

| A price calculated for a Settlement Point for each Settlement Interval using Shadow Prices | ? |
| A price calculated for a Settlement Point for each Settlement Interval using LMPs | ? |
### Settlement Intervals:

<table>
<thead>
<tr>
<th>15 minutes:</th>
<th>Hourly:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Day-Ahead Market</td>
<td>• Real-Time</td>
</tr>
<tr>
<td></td>
<td>• Congestion Revenue Rights</td>
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</table>
## Charge Type:

<table>
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<tr>
<th>A line item on an ERCOT Settlement Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>A choice a customer must make when paying their bill (i.e. Visa, MasterCard, etc.)</td>
</tr>
<tr>
<td>Billing Determinant:</td>
</tr>
<tr>
<td>--------------------------------------------------------------</td>
</tr>
<tr>
<td>A variable used in Settlements to calculate a Charge Type</td>
</tr>
<tr>
<td>A flag that determines the Statement on which a Charge Type Appears</td>
</tr>
</tbody>
</table>
Adjusted Metered Load:

Load usage data that has been adjusted for the difference between scheduled load and actual load.

Load usage data that has been adjusted for Transmission Losses, Distribution Losses, and Unaccounted for Energy (UFE)
Activity: Market Settlement Terminology

**Metering and Data Aggregation**

- **Adjusted Metered Load (QSE)**
  - Unaccounted For Energy (UFE)
  - Transmission Losses
  - Distribution Losses
  - Meter Data

- **Qualified Scheduling Entity (QSE)**

- **Load Serving Entity (LSE)**
### Load Ratio Share:

<table>
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<th>Formula</th>
</tr>
</thead>
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<tr>
<td>The ratio of an Entity’s Adjusted Metered Load to total ERCOT Adjusted Metered Load for an interval</td>
<td>![Image]</td>
</tr>
<tr>
<td>The ratio of an Entity’s Adjusted Metered Load to Adjusted Metered Generation for an interval</td>
<td>![Image]</td>
</tr>
</tbody>
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Module Conclusion

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