CRRs Settled in the Day-Ahead Market

- Charges for Cleared DAM Energy Bids
- Charges for Cleared DAM PTP Obligation Bids
- Payments for Cleared DAM Energy Offers
- Payments for Cleared DAM PTP Obligation Bids

Payment due to CRR Account Holders (Target Payment)
CRRs Settled in the Day-Ahead Market

- Charges for Cleared DAM Energy Bids
- Charges for Cleared DAM PTP Obligation Bids

- Payments for Cleared DAM Energy Offers
- Payments for Cleared DAM PTP Obligation Bids

Payment due to CRR Account Holders (Target Payment)

Some hours there is not enough Congestion Rent to pay CRR Owners
CRRs Settled in the Day-Ahead Market

- Charges for Cleared DAM Energy Bids
- Charges for Cleared DAM PTP Obligation Bids

- Payments for Cleared DAM Energy Offers
- Payments for Cleared DAM PTP Obligation Bids

Some hours there is more Congestion Rent collected than needed to pay CRR Owners

Payment due to CRR Account Holders (Target Payment)
CRRs Settled in the Day-Ahead Market

Occurs hourly

- Charges for Cleared DAM Energy Bids
- Charges for Cleared DAM PTP Obligation Bids

- Payments for Cleared DAM Energy Offers
- Payments for Cleared DAM PTP Obligation Bids

Payment due to CRR Account Holders (Target Payment)
Credit to CRR Balancing Account

\[ \text{CRRBACR} = \max (0, (\text{DACONGRENT} + \text{DACRRCRTOT} + \text{DACRRCHTOT})) \]

Payment due to CRR Account Holders
(Target Payment)

<table>
<thead>
<tr>
<th>Determinants</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRR Balancing Account Credit</td>
</tr>
<tr>
<td>Day-Ahead Congestion Rent</td>
</tr>
<tr>
<td>Day-Ahead CRR Credit Total</td>
</tr>
<tr>
<td>Day-Ahead CRR Charge Total</td>
</tr>
</tbody>
</table>
Any CRR Auction Fees for the month are also added to the CRR Balancing Account

<table>
<thead>
<tr>
<th>Determinants</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRR Auction Fee Total</td>
</tr>
</tbody>
</table>
CRR Balancing Account: Outcomes

**Outcome #1**
Refunding short paid CRR Account Holders from CRR Balancing Account

**Outcome #2**
Dispensing remaining funds in CRR Balancing Account

**Outcome #3**
Refunding short paid CRR Account Holders when funds in CRR Balancing Account are insufficient
CRR Balancing Account: Outcomes

**Outcome #1**
Refunding short paid CRR Account Holders from CRR Balancing Account

**Outcome #2**
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Refunding short paid CRR Account Holders when funds in CRR Balancing Account are insufficient
CRR Balancing Account

Payment due to CRR Account Holders

Monthly
Monthly Refunds to Short-Paid CRR Owners

Outcome #1

Short-paid CRR Account Holders receive a refund for any short-paid Operating Hour in a month

<table>
<thead>
<tr>
<th>What:</th>
<th>Monthly refund to CRR Account Holders that received a Shortfall Charge in the month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why:</td>
<td>Uses Monthly CRR Balancing Account to pay back short paid CRR Account Holders</td>
</tr>
</tbody>
</table>
At the end of the month, the CRR Balancing Account and Shortfall charges included:

- CRRBACRTOT = $27,000
- CRRFEETOT = $3,000
- CRRSAMTTOT = $25,000

If the Shortfall charges for CRRAH1 are $2,500, will they receive a full refund?
Refunds using Monthly CRR Balancing Account

\[ \text{CRRAMT}_o = (-1) \times \min(\text{CRRBACRTOT} + \text{CRRFEETOT}, \text{CRRSAMMTTOT}) \times \text{CRRSAMTRS}_o \]

\[ \text{CRRSAMTRS}_o = \left( \frac{\text{Shortfall Charges to CRR Account Holder}}{\text{Total Shortfall Charges to all CRR Account Holders}} \right) \]

Determinants

- CRR Balancing Account Credit Total
- CRR Auction Fee Total
- CRR Refund Amount
- CRR Shortfall Amount Total
- CRR Short Amount Ratio Share

\( o = \text{CRR Owner} \)
### CRR Balancing Account: Outcomes

<table>
<thead>
<tr>
<th>Outcome #1</th>
<th>Refunding short paid CRR Account Holders from CRR Balancing Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome #2</td>
<td>Dispensing remaining funds in CRR Balancing Account</td>
</tr>
<tr>
<td>Outcome #3</td>
<td>Refunding short paid CRR Account Holders when funds in CRR Balancing Account are insufficient</td>
</tr>
</tbody>
</table>
CRR Balancing Account

Payment due to CRR Account Holders

Monthly

Pay to QSEs representing Load
**Outcome #2**

**Payment to QSEs that represent Load**

**What:** Monthly payment to QSEs that represent Load to disperse remaining revenues in the Monthly Balancing Account, if the Balancing Account Fund has reached its maximum limit.

**Why:** Keeps ERCOT revenue neutral.
At the end of the month, the CRR Balancing Account and Shortfall charges included:

- \( \text{CRRBACRTOT} = $27,000 \)
- \( \text{CRRFEETOT} = $3,000 \)
- \( \text{CRRSAMTTOT} = $25,000 \)

The Balancing Account Fund is at its limit. If QSE1 has a LRS of 10%, will they receive a payment from the Balancing Account?
CRR Balancing Account Closure

Outcome #2

Amount Paid to QSEs that represent Load $q = (\text{Total left in Monthly CRR Balancing Account after reimbursing short pays when Balancing Account Fund is full}) \times \text{Monthly LRS}_q$

$LACRRAMT_q = (-1) \times \text{Max } ((\text{CRRBACRTOT} + \text{CRRFEETOT} + \text{CRRRAMTTOT}) - (\text{FUNDCAP} - \text{CRRBAFBBAL}), 0) \times \text{MLRS}_q$

Determinants

<table>
<thead>
<tr>
<th>Load Allocated CRR Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRR Refund Amount Total</td>
</tr>
<tr>
<td>CRR Balancing Account Fund Cap</td>
</tr>
<tr>
<td>CRR Balancing Account Fund Beginning Balance</td>
</tr>
</tbody>
</table>
CRR Balancing Account: Outcomes

**Outcome #1**
Refunding short paid CRR Account Holders from CRR Balancing Account

**Outcome #2**
Dispensing remaining funds in CRR Balancing Account

**Outcome #3**
Refunding short paid CRR Account Holders when funds in CRR Balancing Account are insufficient
Payment due to CRR Account Holders
### Outcome #3

**Short-paid CRR Account Holders receive a refund for any short-paid Operating Hour in a month**

<table>
<thead>
<tr>
<th>What:</th>
<th>Monthly refund to CRR Account Holders that received a Shortfall Charge in the month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why:</td>
<td>Uses Monthly CRR Balancing Account and Balancing Account Fund to pay back short paid CRR Account Holders</td>
</tr>
</tbody>
</table>
At the end of the month, the CRR Balancing Account and Shortfall charges included:

- CRRBACRTOT = $27,000
- CRRFEETOT = $3,000
- CRRSAMTTOT = $50,000

With a Balancing Account Fund of $25,000, will the Shortfall charges be fully refunded?
Refunds using CRR Balancing Account Fund

\[
CRRRAMT_o = (-1) \times \min (CRRBACRTOT + CRRFEETOT + CRRBAFA_m, CRRSAMTTOT) \times CRRSAMTRS_o
\]

Where

\[
CRRBAFA_m = \min (CRRBAFBBAL, CRRSAMTTOT - (CRRBACRTOT + CRRFEETOT))
\]

\[
o = CRR \text{ Owner} \\
m = a \text{ month}
\]

Determinants

<table>
<thead>
<tr>
<th>CRR Balancing Account Fund Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRR Balancing Account Fund Beginning Balance</td>
</tr>
</tbody>
</table>
Payment due to CRR Account Holders

may remain short paid
Module Conclusion

CRR Auction
- Charges & Payments for CRRs
- Revenue Distribution

CRR Balancing Account
- Reconcile CRR Short payments

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

RUC
- Commitment
  - Make-Whole
  - Clawback
- Decommitment

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