Overcharging of Congestion in Interface Prices

JCM
November 8, 2013

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John Dadourian

Monitoring Analytics
Monitoring Analytics agrees with the PJM solution of modifying the Market Flow calculation.

Monitoring Analytics does not agree that eliminating the congestion component for M2M constraints in the interface prices is the correct solution.

Monitoring Analytics agrees that the potential for overpayment of congestion exists in the wheeling example Potomac Economics presented.

Monitoring Analytics believes that the non-contiguous nature of the ONT Interface pricing point is contributing to the issue.
Get paid $34
Buy at $28
Net position at C is zero:
Settlement = $0
Net position at D is zero:
Settlement = $0

Pay PJM congestion between B and C
($34 - $30 = $4)
Pay MISO congestion between C and D
($30 - $73 = -$43)
Pay ONT congestion between D and A
($73 - $28 = $45)
Total Congestion between A and B is:
$4 + -$43 + $45 = $6
Net settlement is:
$34 - $28 - $6 = $0
**Interface Pricing**

Buy from Bus A in ONT, sell to Bus B in PJM

Get paid $34  
Buy at $28  
Net position at C is zero: Settlement = $0  
Net position at D is zero: Settlement = $0

Pay PJM congestion between B and A  
($34 - $75 = -$41)  
Pay MISO congestion between C and D  
($30 - $73 = -$43)  
Pay ONT congestion between D and A  
($73 - $28 = $45)  
Total Congestion between A and B is:  
-$41 + -$43 + $45 = -$39  
Net settlement = $34 - $28 - (-$39) = $45
Interface Pricing

• Even if PJM and MISO interface prices were completely converged, market participants may receive more than the value of congestion relief provided.
  • The excess payments come from the congestion dollars which support FTR funding.
Interface Pricing

Buy from Bus A in ONT, sell to Bus B in PJM

Get paid $30
Buy at $20
Net position at C is zero:
Settlement = $0
Net position at D is zero:
Settlement = $0

Pay PJM congestion between B and C
($30 - $26 = $4)
Pay MISO congestion between C and D
($26 - $24 = $2)
Pay ONT congestion between D and A
($24 - $20 = $4)
Total Congestion between A and B is:
$4 + $2 + $4 = $10
Net settlement = $30 - $20 - ($10) = $0
Interface Pricing
Buy from Bus A in ONT, sell to Bus B in PJM

Get paid $30
Buy at $20
Net position at C is zero:
Settlement = $0
Net position at D is zero:
Settlement = $0

Pay PJM congestion between B and A
($30 - $18 = $12)
Pay MISO congestion between C and D
($26 - $24 = $2)
Pay ONT congestion between D and A
($24 - $20 = $4)
Total Congestion between A and B is:
$12 + $2 + $4 = $18
Net settlement = $30 - $20 - $18 = -$8
Interface Pricing

• The current Interface Pricing rules do not reflect how an LMP market should operate, when a non-contiguous interface is used.
• Market participants may double pay for congestion through MISO.
Interface Prices

IESO Interface
LMP: $23.47
MCC: $7.42

MISO SMP: $15.75

PJM Interface
LMP: $25.80
MCC: $10.00

IESO

MISO

NYISO

PJM

IESO Interface
LMP: $26.78
MCC: $1.22

PJM SMP: $25.30

MISO Interface
LMP: -$7.19
MCC: -$31.13

Hourly IESO Price: 23.18
## Settlements: Export from PJM to ONT

### Two Transactions
**PJM-MISO and MISO-ONT**

<table>
<thead>
<tr>
<th>Transaction</th>
<th>PJM-MISO</th>
<th>MISO-ONT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy from PJM</td>
<td>-(-$7.19)</td>
<td>-$23.47</td>
</tr>
<tr>
<td>Sell to MISO</td>
<td>+$25.80</td>
<td>+$23.18</td>
</tr>
<tr>
<td>Net Settlement</td>
<td>$32.99</td>
<td>-$0.29</td>
</tr>
</tbody>
</table>

**TOTAL Settlement**

\[
$32.99 + (-$0.29) = $32.70
\]

**PROFIT**

### One Transaction
**PJM-MISO-ONT**

<table>
<thead>
<tr>
<th>Transaction</th>
<th>PJM-MISO-ONT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy from PJM</td>
<td>-$26.78</td>
</tr>
<tr>
<td>MISO Wheel IN</td>
<td>+$25.80</td>
</tr>
<tr>
<td>MISO Wheel OUT</td>
<td>-$23.47</td>
</tr>
<tr>
<td>Sell to ONT</td>
<td>+$23.18</td>
</tr>
<tr>
<td>Net Settlement</td>
<td>-$1.27</td>
</tr>
</tbody>
</table>

**TOTAL Settlement**

\[
-$1.27
\]

**LOSS**
## Settlements: Import from ONT to PJM

### Two Transactions

**ONT-MISO and MISO-PJM**

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy from ONT:</td>
<td>-$23.18</td>
</tr>
<tr>
<td>Sell to MISO:</td>
<td>+$23.47</td>
</tr>
<tr>
<td><strong>Net Settlement:</strong></td>
<td><strong>$0.29</strong></td>
</tr>
</tbody>
</table>

**MISO-PJM**

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy from MISO:</td>
<td>-$25.80</td>
</tr>
<tr>
<td>Sell to PJM:</td>
<td>+ - $7.19</td>
</tr>
<tr>
<td><strong>Net Settlement:</strong></td>
<td><strong>-$32.99</strong></td>
</tr>
</tbody>
</table>

**TOTAL Settlement**

\[ $0.29 + -$32.99 = -$32.70 \]

**LOSS**

### One Transaction

**ONT-MISO-PJM**

<table>
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<tr>
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<tr>
<td>Sell to PJM:</td>
<td>+$26.78</td>
</tr>
<tr>
<td><strong>Net Settlement:</strong></td>
<td><strong>$1.27</strong></td>
</tr>
</tbody>
</table>

**TOTAL Settlement**

\[ $1.27 \]

**PROFIT**
Sham Schedule

ONT-MISO-PJM with PJM-MISO

ONT-MISO-PJM
- Buy from ONT: -$23.18
- MISO Wheel IN: +$23.47
- MISO Wheel OUT: -$25.80
- Sell to PJM: +$26.78
- Net Settlement: $1.27

PJM-MISO
- Buy from PJM: -(-$7.19)
- Sell to MISO: +$25.80
- Net Settlement: $32.99

TOTAL Settlement
- $32.99 + $1.27 = $34.26
- PROFIT

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Sham Schedule Effect

- The net effect of the two transactions is that ONT raises generation, and MISO lowers generation.
- The predominant flows will be from ONT-MISO which further aggravates the constraint.
- The market participant profits from this activity.