BP-20 Rate Case Workshop: Power Rates

Transmission Scheduling Service and Tier 2 Rates

July 25, 2018
Transmission Scheduling Service

• Transmission Scheduling Service (TSS) allows BPA Power Services to use the flexibilities of customers’ network rights in combination with other network customers’ rights to manage BPA’s power resources efficiently.

• Power Services schedules all Federal power deliveries and Non-Federal resource deliveries to the customers’ load.

• Power Services performs necessary scheduling functions by creating E-Tags and making preschedule and real-time adjustments as needed.
Current TSS requirements

- Customers are required to enter their hourly Non-Federal resource schedule into the ISSAC portal on a preschedule basis so that Power Services can create all E-Tags.
- Customers that purchase TSS can elect to use Transmission Curtailment Management Service (TCMS).
  - BPA provides TCMS when power from a customer’s Non-Federal resource cannot be delivered to the customer’s load, due to congestion or a transmission outage.
  - Customers taking TCMS avoid exposure to UAI charges and instead are charged a market indexed rate based on BPA’s cost to replace the customer’s Non-Federal power.
- Customers with scheduled Non-Federal resource deliveries are required to pay a TSS fee. This is a flat monthly fee calculated every Rate Case.
TSS-Lite proposal

• The customer (or its agent):
  – takes on all scheduling and tagging functions for their Non-Federal resources;
  – creates all E-Tags for Non-Federal resources and ‘CC’ BPA Power Services (BPAP) on each tag;
  – will not be required to use the ISAAC portal;
  – will still be eligible for TCMS; and
  – must use TSS-lite for all scheduled Non-Federal resources.

• To be eligible for TSS-lite, transfer service customers will be required to use the Non-Federal market purchase exchange that was established in the CHWM Contracts during the BP-18 rate case.
TSS-Lite rate design proposal

• TSS-lite rate: $180/TSS-lite event
  – $180 is based on 3 hours of BPA FTE staffing time. An average BPA employee costs $125,000 (including benefits) per year or $60 per hour.

• TSS-lite billing determinant: Count of TSS-lite events, a TSS-lite event includes:
  – each time a customer fails to CC Power Services on a schedule
  – each day a customer has a TCMS charge

• Other considerations:
  – A customer may have multiple events for a single hour if there are multiple schedules for an hour that do not include CCs to Power Services.
  – If a TCMS charge occurs, then the customer will pay the TSS-lite rate in addition to paying for replacement power and transmission (if applicable) during the transmission curtailment.
  – If the customer fails to CC Power Services and the schedule is curtailed; then the customer is subject to UAI charges.
Tier 2 rates

• Review BP-18 Tier 2 Short Term rates
• Share our BP-20 Tier 2 Short Term and Load Growth rate proposals
• Discuss Tier 2 Vintage rates

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Rate Case</th>
<th>Load Growth</th>
<th>VR1-2014</th>
<th>VR1-2016</th>
<th>Short Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>BP-12</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>$46.48</td>
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<td>2013</td>
<td>BP-12</td>
<td>$48.63</td>
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<td>2014</td>
<td>BP-14</td>
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<td>2015</td>
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<td>2016</td>
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<td>$44.72</td>
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<td>2017</td>
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<td>$49.08</td>
<td>$43.18</td>
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<td>2018</td>
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<td>$45.42</td>
<td>$53.02</td>
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</table>
Short Term rates

Tier 2 Short Term Rates and Rate Case Market Price Forecasts ($/MWh)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Rate Case</th>
<th>Market Purchase?</th>
<th>Purchase/Forecast Price</th>
<th>Risk Adder</th>
<th>Losses</th>
<th>TSS</th>
<th>Overhead Adder</th>
<th>Short Term Rate</th>
<th>Market Price Forecast</th>
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<tbody>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80-year Average</td>
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<tr>
<td>2012</td>
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<td>$43.70</td>
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<td>$0.23</td>
<td>$1.16</td>
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<td>2013</td>
<td>BP-12</td>
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<td>$45.98</td>
<td>$0.00</td>
<td>$1.30</td>
<td>$0.23</td>
<td>$1.18</td>
<td>$48.69</td>
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<td>$33.28</td>
<td>$0.00</td>
<td>$0.97</td>
<td>$0.15</td>
<td>$1.18</td>
<td>$35.58</td>
<td>$28.84</td>
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<tr>
<td>2015</td>
<td>BP-14</td>
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<td>$37.25</td>
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<td>$0.15</td>
<td>$1.21</td>
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<td>no</td>
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<td>$29.72</td>
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<td>BP-16</td>
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<td>$26.43</td>
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<tr>
<td>2018</td>
<td>BP-18</td>
<td>no</td>
<td>$23.14</td>
<td>$2.06</td>
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<td>$0.14</td>
<td>$1.09</td>
<td>$27.20</td>
<td>$23.14</td>
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<td>2019</td>
<td>BP-18</td>
<td>yes</td>
<td>$23.00</td>
<td>$0.00</td>
<td>$0.71</td>
<td>$0.14</td>
<td>$1.12</td>
<td>$24.97</td>
<td>$22.83</td>
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</table>

**BP-18 Tier 2 Short Term rates:**
- BPA forecast a surplus for FY 2018 and the Short Term rate was based on the average of the two rate case spot market price forecasts (critical water and 80 water year average).
- BPA forecast a deficit for FY 2019 and the Short Term rate was based on the price of a market purchase made for that fiscal year.
Decision criteria

- Decision criteria used to develop and evaluate BP-20 Tier 2 Short Term rate proposals:
  - Consistent with Tiered Rate Methodology, previous rate case decisions, and CHWM Contracts.
  - Tier 2 Short Term rate should be reasonably comparable to products/prices available from the market, but with added benefits. BPA’s Tier 2 rates include the following benefits:
    - Firm network transmission
    - No adder for odd lot purchase size (>25 MW or < 25 MW increments)
    - No requirement for customer to post additional credit support
    - No adder for the very low carbon output of the FCRPS
  - Clear documentation: Straightforward to implement and understand in the rate case.
Short Term rate proposals

• If BPA is forecasting a surplus, then the Short Term rate would be based on a proxy forward market price. We are considering two methods for establishing a proxy price for a flat annual block of power:
  – BP-18 method: rate case 80-year annual average spot market price forecast (Aurora) plus a risk adder; or
  – ICE method: average (from three consecutive dates) forward market settlement prices on ICE for Mid-C electricity futures contracts, may include a small risk adder.

• If BPA is forecasting a deficit, then BPA would make market purchases to meet its load obligations and the Tier 2 Short Term rate would be based on the market purchase price.
Load Growth rate proposal

• BPA would use the same methodology used to establish the Short Term rate to determine the Load Growth rate (BP-20 Short Term rate = BP-20 Load Growth rate).

• Both Short Term and Load Growth rates would continue to include adders for losses, TSS, and overhead costs. It may also be appropriate to include a risk adder.
Tier 2 – ICE market settlements

• The Intercontinental Exchange (ICE), a web-based trading platform for commodity energy, publishes daily settlement prices for a 10 year listing cycle of monthly Mid-C electricity futures contracts.
  – Daily settlement prices reflect actual transactions and systematic adjustments to those futures contracts not traded.
  – These prices do not necessarily reflect the actual price at which BPA could transact.

• For the last two rounds of purchases of Tier 2 energy, BPA paid slightly above the comparable ICE settlement prices.

<table>
<thead>
<tr>
<th>Delivery Period</th>
<th>FY14</th>
<th>FY15</th>
<th>FY19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchase Date</td>
<td>11/16/2012</td>
<td>11/16/2012</td>
<td>2/20/2017</td>
</tr>
<tr>
<td>Actual Purchase Price*</td>
<td>$33.28</td>
<td>$37.25</td>
<td>$23.00</td>
</tr>
<tr>
<td>Purchase Date ICE Settlement</td>
<td>$33.10</td>
<td>$36.58</td>
<td>$22.22</td>
</tr>
<tr>
<td>Delta Actual-ICE</td>
<td>$0.18</td>
<td>$0.67</td>
<td>$0.78</td>
</tr>
</tbody>
</table>

*Including Letter of Credit
Tier 2 – ICE market settlements (cont.)

- There are a variety of ways physical delivered power differs from the futures contracts traded on ICE, such as transmission costs and the impact on system emission factors.

- Reasons a physical purchase might be higher than comparable ICE Settlements:
  - Required credit support
  - Lack of liquidity
  - Odd lot size
  - Carbon market uncertainty
  - ICE market settlement price

- Comparison of Tier 2 purchases to ICE market settlements indicates a small adder (~$0.50) may be appropriate to convert a financial price to a physical price.
## Proxy forward market prices

<table>
<thead>
<tr>
<th>BP-18 Method: Rate case spot market price forecast (Aurora) plus risk adder</th>
<th>Consistent with TRM, rate cases, contracts</th>
<th>Comparable to products available in market</th>
<th>Straightforward to implement and understand in rate case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, methodology has been used in two rate cases.</td>
<td>Possibly, although using this method for FY2018 resulted in a rate $2 higher than the FY2019 rate that was based on an actual market purchase.</td>
<td>Yes, methodology is based on market price forecast data developed for the rate case.</td>
<td></td>
</tr>
</tbody>
</table>

| ICE Method: Forward market settlement prices on ICE for Mid-C electricity futures contracts may include a small risk adder | Yes, provided that BPA has sufficiently mitigated for risks, including the risk of shifting costs from Tier 2 to Tier 1. | Yes, daily settlement prices reflect actual transactions and systemic adjustments to those futures contracts not traded. Could be more comparable if a small risk adder, benchmarked to actual annual block purchases, is added. | Yes, will need to develop the specific methodology for the rate case proposal. Will also need consent from ICE to use ICE settlements pricing data in the rate case. |
Vintage rates

• BPA is open to offering Tier 2 Vintage rates for customers with specific resource objectives (solar, wind, market, etc.)
• Customers looking for direct market purchases outside of the Tier 2 Short Term/Load Growth framework should contact BPA’s trading floor.
Next steps

• Comments or questions? Email techforum@bpa.gov
• Please provide comments by August 8th.