BP-16 Power Rates Workshop

July 24, 2014

BP-16 Power Rates Workshop Agenda

Topic	Presenter
Customer Acquisition of AURORA	Peter Williams
South Idaho Load Service (SILS): Interim Service Cost Treatment	Paul Garrett Peter Stiffler
Demand Rate	Eddie Abadi Daniel Fisher
Expanding the New Resources (NR) Energy Shaping Service to include a Capacity Service	Daniel Fisher Annamarie Weekley Al Ingram
Explore providing Resource Support Services for Resources Serving a New Large Single Load (NLSL)	Daniel Fisher Annamarie Weekley Al Ingram

Customer Acquisition of AURORA

- Intervenor licenses will be made available to interested parties.
- Cost is $2,000 for version with no vendor support, and $3,000 for Limited Support.
  - 'Limited Support' provides one 8-hour training session and 10 hours of technical support per month for 2 months.
- Term of license is shorter of 12 months or duration of Rate Case.
- User may only use data provided by BPA, and may not use license for any purpose other than status as intervenor.
- License is single user/single machine.
- Workshop in Fall 2014 with Rate Case participants to cover AURORA topics.
- Similar to terms offered in BP-12.
- Interested parties may contact BPA via the Tech Forum (techforum@bpa.gov and include "AURORA" in the subject line) for contracts to purchase licenses.

South Idaho Load Service:
Interim Service Cost Treatment

Transfer Service

- BPA's requirements customers are spread across the Northwest. Transfer Service has long been an integral part of delivering Federal power to serve these customers.
  - Over the years as a new customer or Point of delivery emerged, it was logical to take service over pre-existing third party transmission facilities, rather than BPA building out the FCRTS to reach every single load in the region.
  - Transfer Service has generally been more economical than a transmission build to reach remote requirements loads.
  - While the total amount of savings may be debatable, such wide-spread expansion of the FCRTS would have undoubtedly cost regional rate payers significantly more than what BPA has paid third-party providers for Transfer Service.
- Under the general heading of Transfer Service, Power Services currently acquires transmission from 21 separate transmission providers.
- BPA currently has 134 requirements power sales customers. Power Services acquires Transfer Service to serve 84 of them to at least one point of delivery, or over 60%.
- Transfer customer loads represent approximately 2,200 MWs of peak load.

Transfer Service Cost and Rate Treatment

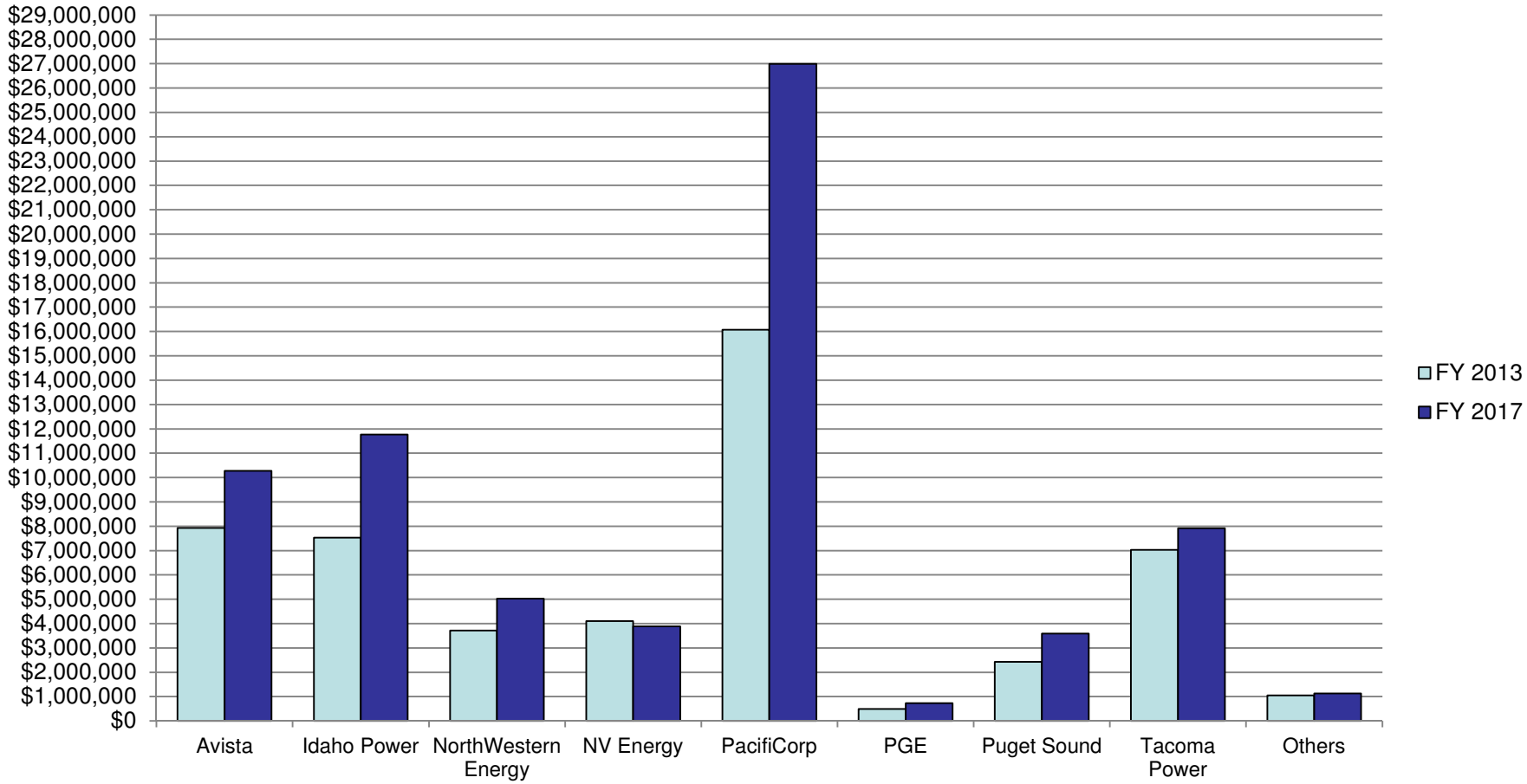
- Historically, with few exceptions, BPA has contracted for Transfer Service on behalf of its customers.
  - This commitment is currently memorialized in the Regional Dialogue power sales contracts, as well as the supporting policies and RODs.

- The cost of Transfer Service has been rolled into BPA rates, and since 1996, it has been included in power rates.
  - Specifically, under the Tiered Rate Methodology, Transfer Service costs are identified as a component of the composite cost pool and recovered from all requirements power customers.

- In addition, BPA has agreed, through the Agreement Regarding Transfer Service (ARTS) contract with all transfer customers, to propose 'rolled in' treatment for these costs in BPA's initial rate proposals.

- As a result of the acquisition of Transfer Services to wheel Federal power, Power Services currently spends more than $50 million per year.
  - The recently concluded Integrated Program Review identified that beginning in July 2016, Transfer Service costs associated with serving BPA customers in SE Idaho will increase significantly as legacy agreements with PacifiCorp are converted to service under their Open Access Transmission Tariff (OATT).
  - This, coupled with transfer provider rate increases, has the potential for increasing the Transfer Service budget by as much as 50% to $75 million in FY 2017.

Costs By Transfer Provider



South Idaho Exchange and the PacifiCorp East General Transfer Agreement (GTA)

- BPA has had requirements loads in Southeast Idaho since taking over the service obligation from the Bureau of Reclamation in the 1960's. At that time these loads were served over Utah Power and Light facilities.

- As these loads grew, obtaining enough transmission capacity to meet the loads became difficult. In 1989, PacifiCorp merged with Utah Power and Light which made it possible to enter into a long-term exchange with PacifiCorp.

- The South Idaho Exchange allowed BPA to deliver power to the PacifiCorp west system and in exchange, PacifiCorp would then deliver a like amount of power to the Goshen substation in Southeast Idaho.
  - The PacifiCorp East GTA was then used to deliver the power over PacifiCorp transmission facilities to the loads not served out of Goshen.
  - This arrangement solved the problems of maintaining firm service through transmission constraints and multiple wheeling pancakes associated with the service prior to the Exchange.

- Under the South Idaho Exchange, BPA paid PacifiCorp a demand charge and losses on these deliveries.
  - Under the PacifiCorp East GTA, BPA also paid for use of required transmission facilities, including losses.

South Idaho Load Service (SILS)

- In June 2011, PacifiCorp provided notice of termination for the Exchange and the PacifiCorp East GTA.
  - By 2011, PacifiCorp was facing higher transmission costs and the potential of needing to add expensive generation capacity in the PacifiCorp East system.
- About half the forecast increase in the transfer budget is directly linked to termination of the South Idaho Exchange and GTA.
- Interim Service (prior to the implementation of a long-term approach for serving Southeast Idaho loads) will be supplied by transmission acquisitions, market purchases in and around the PacifiCorp East BA, and potentially, purchases or exchanges from specific resources.
- There is some transmission available to serve part of these loads directly from the FCRPS, but some will require a double or triple wheel.
- BPA is in the process of making market purchases near the loads.
  - Under a Request for Offer (RFO) completed in May, BPA is purchasing 50 MW of heavy load hour (HLH) energy for Q2 and Q3 for 5 years. Additional RFOs are planned to be run later this summer.

SILS and the Rate Case

- The costs that BPA will incur to support service to SE Idaho in the interim period are expected to fall into three general categories. These are:
  - The cost of PacifiCorp network transmission for service to SE Idaho Customer Points of Delivery (POD).
  - The cost of transmission from intermediary transmission providers located between BPA's main transmission system and PacifiCorp's transmission system (e.g., Idaho Power).
  - The cost of power purchased in markets near SE Idaho for the purposes of serving SE Idaho loads.
- In order to set rates for the upcoming BP-16 rate period, BPA must determine the appropriate rate treatment for each of these costs.

SILS and the Rate Case (continued)

- Costs associated with acquisition of transmission for SE Idaho load service are typical transfer costs (OATT wheeling to preference customers served over 3rd party transmission facilities), and will be included in the Transfer Services budget.
  - The Transfer Services budget is included in the Integrated Program Review as non-discretionary spending; general discussion on these and other typical transfer costs occur in the IPR process.
- BPA plans to address the allocation of power purchase costs associated with SE Idaho load service in the upcoming rate case.
- Each power purchase made to serve the SE Idaho loads results in two impacts:
  1. the cost of the purchase; and
  2. the resulting additional revenue from either additional surplus energy available for marketing from the FCRPS at the Mid-Columbia (Mid-C) market or a decreased need to purchase power for other load from the Mid-C market.

SILS and the Rate Case (continued)

- If market prices were identical in SE Idaho and in the Mid-C market, these two impacts would simply offset each other, with no additional cost (or benefit) of purchasing power in SE Idaho for service to transfer loads there.
  - To the extent that a price differential is expected, BPA is proposing to allocate the difference to the transfer budget, and thereby into the composite cost pool.
  - After this allocation is made, the power purchases are folded into the net position modeled in RevSim, with modeling treatment similar to the winter hedging contracts in WP-10, BP-12, and BP-14.
  - The remaining power purchase cost (that is, the power purchase valued at forecast Mid-C prices) would flow to the non-slice cost pool as a balancing purchase cost, and the inventory would flow into the secondary position under 80-water years and varying load conditions.

BP-16 Demand Rate

Recap of Previous Assumptions and Proposal for BP-16

Intent of Demand Charge

- "The Demand Charge was designed to send customers . . . a marginal price signal for a portion of the customers' existing demand. Staff's rate design for the proposed Demand Charge placed some amount of existing demand on the margin to encourage demand reduction programs (i.e., Demand Side Management (DSM)) . . ." (TRM ROD, TRM-12-A-1, p.74).
  - Price Signal
  - Designed to encourage demand reduction programs

TRM Demand Rate

- From the TRM (BP-12-A-03, pp. 76-77):
  - Demand Rate to be based on annual fixed costs (capital and O&M) of the marginal capacity resource.
  - Resource to be based on BPA's Resource Program and/or costs of BPA's recent capacity additions, or estimates from EIA, EPRI, NWPCC, PNW IRPs, capacity market (provided that one exists).

Demand Rate Applied

- Historically for rate cases, the marginal capacity resource has been GE's LMS100 Intercooled Combustion Turbine.
- Very popular model, with 19 100MW units installed in California over the past 2 years, or under construction now (Haynes, CPV Sentinel, Walnut Creek).
- Wealth of publicly available information from GE, CEC, NWPCC, etc., on the LMS100's flexibility capabilities.

Demand Rate Applied (continued)

- In the BP-14 rate case, BPA used the following assumptions for the LMS100 cost:
  - $1,105/kw All-In nominal capital cost
  - 100% PUD ownership with a financing rate of 4.04%
  - 30-year financing
  - $9.20/kw/year plant fixed O&M
  - Heat Rate: 8,650 Btu/kWh

Looking Forward

- We feel that the LMS100 still represents the marginal capacity resource intended by the TRM, and that the assumptions used in BP-14 still hold, with minor changes (outlined on following slides).
- Sends correct price signal to encourage Demand Response.
- With nearly 2,000 MW of LMS100's added in California recently, it is widespread enough to be considered an industry standard marginal capacity resource.

Looking Forward (continued)

- While Demand Response (DR) has progressed as a potential capacity resource, many projects are still in 'pilot' stages. Regional penetration has not approached the thousands of MW of installed LMS100's.
  - In addition, the major intent of the Demand Charge is to encourage customers to engage in demand-side management. Making the price signal equal to the cost of DR would likely negate this incentive.
- While contracts for capacity are often signed bilaterally in the Pacific Northwest, liquidity and price discovery are extremely nebulous, and there still exists no formal capacity market in the region.

BP-16 Demand Rate – Staff Proposal

- Two Minor Changes:

1. It is still preliminary, but the NWPCC is proposing an all-in capital cost of $1,119/kw nominal for the 7th Power Plan, BPA staff has been consulted on this figure via the Generating Resources Advisory Committee. This is very close to the 6th Plan figure.
   - We propose to use a figure very close to, if not exactly $1,119/kw, for calculating the Demand Rate.

2. The current BPA forecast for 3rd Party, Tax-Exempt borrowing over 30 years is 4.52%.
   - We propose to use this figure instead of 4.02% used for BP-14 rates.

BP-16 Demand Rate – Staff Proposal

- Both of these represent very slight shifts for the Demand Rate from BP-14.

- The assumptions of 100% PUD ownership with 30-year financing for a public entity, and 8,650 Heat Rate are all still appropriate for this calculation.

Energy Shaping Service for New Large Single Loads (NLSLs)

- Currently BPA offers the New Resource (NR) Energy Shaping Service to Load Following customers that need a service to shape a dedicated resource serving an NLSL to the actual load of the NLSL.

- The capacity requirement of the NLSL must be met by the customer under the current BP-14 version of the NR Energy Shaping Service.

- The service credits or debits the customer the difference between the dedicated resource amount during a monthly diurnal period and the measured NLSL load during that same monthly diurnal period.

- A true-up is applied at the end of each fiscal year to ensure that any net positive power purchased from BPA at the NR Energy Shaping rates is paid for at the applicable NR energy rate.

Energy Shaping Service for NLSLs in BP-16

- Some customers have expressed an interest in expanding the Energy Shaping Service to include a capacity component.
- The addition of a capacity charge would allow more flexibility in the resource shape that is applied to the NLSL. It would also ensure that BPA is adequately compensated for capacity used to serve an NLSL.
- Any projected ESS demand charge revenue would be credited to the Non-Slice Cost Pool.
- This service would be available to Load Following customers that are serving an NLSL with non-Federal resources.

Resource Support Services

- Currently BPA offers access to RSS and related services for their variable, non-dispatchable non-Federal resources, in accordance with the CHWM contract. These services are designed to financially convert a variable, non-dispatchable resource into a flat annual block of power or specified monthly/diurnal resource shape found in Exhibit A of the customer's CHWM contract.
- Resource Support Services are presently offered under the PF rate schedule, but not under the NR rate schedule.
- Customer interest in an NR Resource Support Service has increased and BPA staff proposes to define and offer a Resource Support Service for non-Federal resources serving NLSLs.
- Any projected NR Resource Support Service revenue would be credited to the Composite Cost Pool.
- This service would be available to Load Following customers that are serving an NLSL with non-Federal resources.