

RESIDENTIAL EXCHANGE PROGRAM & AVERAGE SYSTEM COST

August 21, 2007

PURPOSE

Review how the Residential Exchange Program evolved and historically operated.

Review the issues that could influence the calculation of the average system cost and / or the structure of the Residential Exchange Program

Start the dialog on how to structure the Residential Exchange Program (REP) and an Average System Cost Methodology (ASCM).



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The Northwest Power Act

- The Residential Exchange Program was established in the Northwest Power Act of 1980 to provide a form of access to the benefits of the Federal Columbia River Power System (FCRPS) to residential and small farm customers of Northwest utilities whose average system cost of resources is high relative to the BPA PF Exchange Rate.
- The Northwest Power Act provides for the exchange to be available to “*any Pacific Northwest electric utility.*”
- Section 5(c)(1) of the Northwest Power Act states “*Whenever a Pacific Northwest electric utility offers to sell electric power...at [its] average system cost...the Administrator shall acquire by purchase such power and shall offer, in exchange, to sell an equivalent amount of power to such utility...*” at the PF Exchange Rate, as calculated in a section 7(i) ratemaking process.



The Northwest Power Act – Key Sections

- 5(c)(1) – Purchase & Sale (exchange)
- 5(c)(2) – Ramping in of benefits (no longer applicable)
- 5(c)(3) – Benefit must pass-through to residential customers
- 5(c)(4) – Termination conditions
- 5(c)(5) - In lieu transactions
- 5(c)(6) – Limitations on restrictions of exchange sales
- 5(c)(7) - Average System Cost Methodology
- Exclusions
 - 5(c)(7)(A) – the costs of additional resources in an amount sufficient to serve any new large single load (NLSL)
 - 5(c)(7)(B) – the costs of additional resources in an amount sufficient to meet any additional load outside the region
 - 5(c)(7)(C) – any cost of any generating facility which is terminated prior to initial commercial operation
- Section 7(b)(2) and 7(b)(3)

Exchange Benefits

$$\text{Exchange Benefits} = (\text{Utility's Average System Cost} - \text{BPAs PF Exchange Rate}) \times \text{Utility's Exchange Load}$$

BPAs PF Exchange Rate is a posted rate that is set using a forecast of ASCs and exchangeable loads and set in a BPA rate case.*

The Residential Exchange Program (REP) is responsible for the determination of the **utility's Average System Cost** and the verification of the **utility's Exchange Load**

**The forecasted ASCs and exchangeable loads will more than likely be different than the actual ASCs and exchangeable loads used to determine exchange benefits.*



Residential Exchange – An Overview

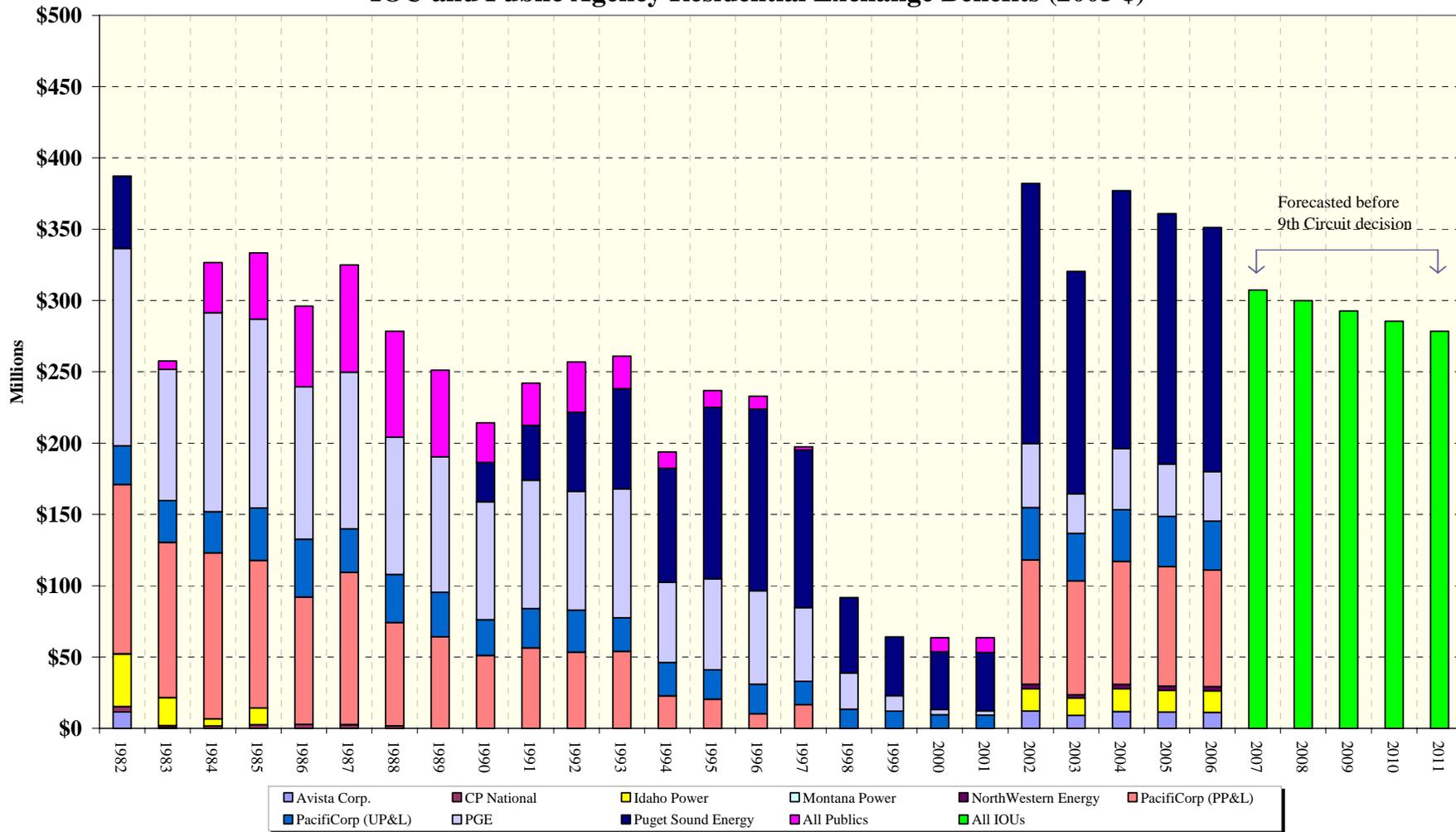
- The Northwest Power Act provides that the Residential Exchange is available to “any Pacific Northwest electric utility,” including public and private utilities
- The amount of power exchanged is based on the amount of the utility’s qualifying residential and small farm load.
- Benefits are based on the utility’s Average System Cost (ASC) compared to the PF Exchange rate.
- Monetary benefits must be passed through directly to the utility’s residential and small farm consumers.
- In the mid-1980s BPA started settling and terminating Residential Exchange contracts.
- Prior to June 1985, the DSI customers paid for the Residential Exchange costs not recovered from other customers.

Residential Exchange – An Overview (Continued)

- Post June 1985, the cost of the Residential Exchange has been recovered through BPAs firm power rates, subject to the section 7(b)(2) rate test.
- Beginning in 1997, this interruptible DSI load no longer existed. Benefits provided through termination agreements.
- BPA currently does not have an active Residential Exchange Program.

History of the Residential Exchange Program Benefits

IOU and Public Agency Residential Exchange Benefits (2005 \$)



1981 ASC Methodology

- Following passage of the Northwest Power Act, BPA, in conjunction with regional parties, established the 1981 Average System Cost Methodology and made the Residential Exchange a paper transaction.
- The resulting ASC methodology was based on a jurisdictional approach. It utilized costs as approved in local utility rate cases as the basis for the ASCs
- Utilities must file a new ASC with each rate change.
- Income related taxes and return on equity are allowed as part of the utility's ASC.
- Utility's that have ASCs less than BPAs PF Exchange rate are allowed to enter "deemer status," rather than pay BPA the differential.



1981 ASC Methodology & Reconsultation

- Issues leading up to the 1984 ASC Methodology Reconsultation
 - Certain utilities were found to exchange terminated plant costs contrary to Section 5(c)(7)(C) of the NWPA.

1984 Methodology

- With the 1984 ASCM, a “cookbook” model was formulated and became the standard model for determining the final ASC for the filing utility.
- The ASCM retained the “jurisdictional approach.” A utility files for a revised ASC with every rate change approved by its Commission or Board.
 - In a General Rate Case, the ASC filing is complicated and requires extensive ASC review.
 - A utility can have one or more filings that resulted from one-issue rate cases, such as a Power Cost Adjustment case or a Demand Side Management case.
 - ASC filings overlap and require significant staff resources.
- The jurisdictional approach anticipated BPA staff and other BPA regional power sales customers intervening in the exchanging utility’s rate cases.
- The 1984 ASCM established a 210-day ASC filing review process.



Residential Exchange Program – Historical Structure

Residential Exchange Program – Historical Structure

- The operation of the REP under the 1984 ASC was an extremely labor intensive process.
- The REP process during the initial operation of the 1984 ASCM included up to twenty-five (25) BPA analysts, legal staff and supervisors.
 - Transmission staff were used for the determinations of includable transmission plant and distribution loss studies.
 - Resource acquisition staff were needed for prudency reviews.
- In addition, the ASC process was supported by 10 -15 outside consultants.
- As the program matured the number of contractors supporting the ASC review process went down.
- This does not include the extensive staff requirements of the exchanging utilities of BPA customer groups.



Residential Exchange Program – Historical Structure (continued)

Basic components of the Residential Exchange Program

1. ASC Review
2. Forecasting & Analysis
3. Intervention
4. Billing and Invoicing
5. Auditing and Compliance
6. Records Keeping
7. Legal

ASC Review

- The costs approved by the state regulatory commission or public entity (PUD, Co-op, Council) is the starting point for the ASC review. BPA must then make an independent determination as to whether certain costs are appropriate for inclusion in Contract System Costs.
- ASC Filings per year - 20 – 25
- ASC determination requires ASC analysts to review:
 - the rate order and reconcile it to the revised Appendix 1
 - the application of "cookbook" functionalization ratios to ascertain whether they have been correctly applied.
 - the data provided that supports any direct analyses and conduct on-site reviews for more extensive review of supporting documentation when necessary
 - the ASC Reports for previous filings for all utilities to ensure consistent application of precedential decisions to the current filing.
 - the ASC Reports and review workpapers from previous filings for the utility under review to ascertain whether rules regarding switching functionalization methods have been applied



ASC Review (continued)

- Write the ASC Report
- Staff Requirements
 - BPA Staff – 12
 - Contractors – 4-12

Forecasting & Analysis

- ASC forecasts are required for BPA budgets, rate cases (including 7(b)(2)), planning, and forecasts of future BPA rates.
- Forecasts are used in both Residential Exchange and Exchange Transmission Credit Agreement (ETCA) buyouts
- Additionally, the REP requires
 - The forecast of the ASCs for all of the exchanging utilities.
 - System Loads
 - Resource additions and replacements
 - Operation and maintenance costs
 - Purchased Power
 - Analysis of Impact of industry changes on ASCs
 - Determinations of includable transmission plant and distribution loss studies
- Staff Requirements
 - BPA Staff 3-4 FTE
 - Contractors 2-3 FTE



Intervention

- The 1984 ASC Methodology expects that BPA and interested parties will participate in jurisdictional retail rate review proceedings.
- The purpose of the intervention is:
 - thorough understanding of costs
 - ratepayer protection
- Intervention are generally more passive in nature and sufficient information is usually available through ASC filings, the retail rate case record, and data request submitted during BPAs ASC review.
- Staff Requirements - limited

Billing and Invoicing

- Exchanging utilities send monthly invoices to BPA based on their filed ASC until determination of their final ASC.
- The invoice shows the entire benefit calculation
 - Exchangeable load (energy & demand)
 - Gross exchange cost
 - Exchanged revenue
 - Net cost (benefit)
- BPA reviews all component of the invoice
- BPA trues-up all invoices
 - Final ASC determination
 - Exchangeable load revisions are made
- Staff Requirements
 - BPA Staff – 2 FTE



Auditing & Compliance Review

- The REP program includes the compliance review process. This review process includes the following activities:
 - analyzing the accounting process to insure that the REP benefits are passed through.
 - reviewing Irrigation REP benefits. This review looks to see if the irrigator is getting benefits for pumping operations that are larger than allowed. In addition, investigates passing of benefits to family farms that are being divided for ASC purposes.
 - a “drive by process” where a range of residential and small farm customers are drawn from the customer list. The range is determined by the size of the utility, and if the utility is in more than one jurisdiction. A BPA analyst drives by the locations with a person from the utility and notes if the customer qualifies and if the customer’s loads are excessive.
- A report is submitted to the utility after all the issues are resolved.



Auditing & Compliance Review (continued)

- This requirement is a result of a GAO audit of the REP program.
- Staff Requirement. The number of BPA staff and contractors varies with each utility being reviewed.
 - The review of family farms and large irrigation issues
 - BPA Staff 2 -3 FTE
 - Contractors 1-2 FTE
 - Large utility, like PacifiCorp
 - Up to 8 FTE

Records Keeping

- In addition to the ASC review process, the REP program has an extensive record keeping operation. As with BPAs section 7(i) ratemaking proceedings, all of the documents that are included in the ASC record must be cataloged and made available for requests from intervenors.
- The record keeping group must comply with confidentiality requests from the filing utility regarding information that is sensitive. This includes issues that are being litigated outside of the ASC process and issues of cost and revenues that are being used in the ASC process that are considered proprietary.
- Staff Requirement
 - Contractors – 3 FTE



Legal

- **Rate case testimony:** provides legal advice in the development of ASC forecasts for BPAs power rate cases
- **Intervention Activities:** intervenes on BPAs behalf in state retail ratemaking proceedings
- **ASC determinations:** provides legal advice for ASC Reports regarding compliance with Northwest Power Act and ASC Methodology
- **NLSL determination:** provides legal advice regarding statutory definition of NLSL and consistency of load with ASC Methodology NLSL provisions



Application of the 1984 Methodology

Timeline, Procedures & Appendix 1 Example

1984 Average System Cost Methodology Timeline and Procedures

The June 1984 Record of Decision retained the jurisdictional approach under which retail rate orders of regulatory agencies are used as the primary source of data for computing the Average System Cost (ASC) of utilities participating in the Residential Exchange.

- A new ASC filing is required whenever a utility changes retail rates
- Persons (generally customers of BPA) accorded party status may participate in the review (requesting data from the utility, commenting on issues identified during the review) if they have an interest in the outcome of the BPA review
- 210 day* timeline for review of ASC filings
- Review procedures over a 210-day period include data requests, comments and cross comments, and an opportunity to request oral argument before the Administrator

* *Note that a “preliminary filing” is required no later than 5 days after filing for a jurisdictional rate change.*



Major events in the ASC determination process

- Preliminary ASC filing submitted to BPA 5 working days after a utility files for a rate change
- Revised Appendix 1 ASC filing and supporting documentation must be filed 20 days after commencement of new rates.
- BPA may request data from the utility at any time during the review period. Other parties may submit data requests to the utility no later than 40 days after the date the utility files its revised Appendix 1.
- Not later than 80 days following the date that a utility files a revised Appendix 1, Regional Power Sales customers may submit written challenges to costs included in the utility's Contract System Costs.
- BPA mails to the utility and all parties a list of each challenged cost (the "Issues List") within 90 days following the date the utility files its Revised Appendix 1
- Comments on the list of issues must be submitted to BPA within 30 days of the date of the issue list.



Major events in the ASC determination process (continued)

- Cross comments must be in writing and be received by BPA no later than 15 days following the date that the parties submitted written comments.
- Requests for oral arguments must be submitted not later than 150 days following the date the utility files its Revised Appendix 1.
- BPA may issue a notice to all parties requesting comments on costs that have not previously been challenged, on Contract System Loads, and on other issues that have not been raised previously. This “second issues list” must be sent not later than 135 days following the date a utility files its Revised Appendix 1.
- Cross comments on the second issues list must be received by BPA not later than 165 days following the date that a utility files its Revised Appendix 1.
- The review period ends 210 days from the date the utility files its Revised Appendix 1.



1984 ASC Methodology – Application

- Total costs approved by the state regulatory commission must be separated into the Production, Transmission, and Distribution/Other functions to calculate the ASC.
- The 1984 ASC Methodology adopted
 - Direct analysis
 - Direct analysis allows a utility to assign costs when it has sufficient data demonstrating that such cost assignment is appropriate.
 - Preparation of the direct analysis on the part of the utility, and review by BPA is challenging and difficult.
 - The utility is required to submit workpapers and documents demonstrating that the direct analysis assigns costs based on the actual or intended functional use.
 - Failure to support a direct assignment results in reassignment of costs during the review to Distribution/Other.
 - Functionalization ratios (the cookbook method) are used as the methods for assigning costs to Production, Transmission, and Distribution/Other.



Appendix 1 - Example

- 1984 Average System Cost Methodology ROD (<http://www.bpa.gov/corporate/pubs/RODS/1984/>) Appendix I on pages 120 thru 139.
- Illustrative example using Appendix I

ASC Methodology & REP Implementation Issues

These are issues staff has identified under the current methodology that may need to be addressed in the development of a new methodology and exchange program.

ASC Methodology Issues

- Return on Assets
- Income-related Taxes
- Transmission
- Conservation
- Trading Floors
- Regulatory and Deferred Assets
- NLSL costs in ASC
- Terminated Plant
- Sales outside the region
- Exchangeable Load
- Prudency Review / Used and Useful / Contract & Plant Termination
- Functionalization Method



Return on Assets

Q. What is the appropriate return on asset that should be included as a resource cost, if any?

- Cost of financing generating resources
 - Capital Structure
 - Terminated Plant
-
- The Northwest Power Act specifically excludes the cost of terminated projects that have not become operational in the calculation of the ASCs. The 1984 ASCM ROD states that “BPA cannot agree that equity returns allowed by regulators do not include, at least tacitly, terminated plant costs and the risks of such terminations.”
 - The 1984 ASC Methodology concluded that the appropriate measure of the rate of return is the embedded cost of long term debt.



Taxes

Q. What income-related taxes should be considered as resource costs, if any?

- In the 1984 ASCM ROD, BPA concluded that income taxes were “not resource costs within the meaning of section 5(c).”
- In developing the 1984 ASCM, the issue of taxes centered on two questions:
 - Are income taxes resource related costs?
 - Does a utility exchange the taxes included in rates or the taxes paid by the utility?
- Other Taxes
 - B&O
 - In lieu
 - Property taxes
 - Other



Transmission

Q. Should Transmission Costs be included in the ASC?

- The NW Power Act does not require the inclusion of such costs.
- 1984 ASC Methodology
 - Includes all existing transmission, as defined by the FERC Uniform System of Accounts, in service as of July 1, 1984.
 - Inclusion of new transmission lines constructed to integrate generating resources
 - No radial lines
 - Duplicate or redundant facilities not included
 - Lesser of utility's integration costs from generating facility to load or sum of costs to integrate to the BPA system and BPAs wheeling costs
- Current
 - Separation of Power & Transmission rates
 - "Coal by Wire" issue



Conservation

Q. What is the appropriate level of conservation cost to be included in the ASC?

- In the 1984 ASCM, conservation is included as a Production cost with limitations.
 - The exchanging utility may only exchange Model Conservation Standards that are mandated by Section 4(f)(1) of the Northwest Power Act.
 - Conservation A&G costs are included if the expense is shown to save power consumption.
 - Conservation contract costs are exchangeable
 - Conservation billing credits offset conservation costs.
 - Not exchangeable
 - Cost that promote the building of houses that use electric heating and use Model Conservation Standards
 - Advertising, promotion and audit
 - Surcharges mandated due to the failure of a utility to achieve conservation



Conservation (continued)

- The limitations require that BPA will review each ASC filing that has a change in conservation from a prior utility filing. This necessitates that BPA have trained staff that are knowledgeable of the Model Conservation Standards and can allocate A&G costs.

Trading Floor Activities

Q. Which costs and offsetting revenues resulting from trading floor activities should be included in calculating ASCs?

- The 1984 ASCM assumes that purchased power is a resource necessary for meeting the native load of a utility. Non-firm sales were small in 1984 and most commissions negotiated the amount to be credited.
- Current:
 - Trading floor activities have now created a dynamic where non-firm sales are being supported by purchases. Under the 1984 ASCM, the majority of purchase power costs may be included in ASC. How does BPA determine the level of trading floor revenues as a credit?
 - Another challenging aspect of the trading floor activities is the exchange of derivative accounts and large deferred power cost accounts.
 - Non-regulated trading floor activity.



Regulatory and Deferred Assets

Q. How can BPA identify and quantify regulatory assets costs that should be included in the ASC?

- For Example:
 - Intangible Assets
 - Pension Assets and Liabilities
 - Deferred Taxes
 - Deferred Power Plant activities
 - Environmental Costs
 - Customer Choice Programs

New Large Single Load

Q. How should NLSL (size and resources costs to serve) be treated in the ASC calculation?

- Section 5(c)7(A) of the Northwest Power Act provides that the costs of additional resources in an amount sufficient to serve any new Large Single Load shall be excluded from ASC.
- Under the 1984 ASC Methodology, Footnote f describes how the cost to serve an NLSL would be calculated.

Sales Outside the Region

Q. How are the sales and associated costs for sales outside the region to be excluded from ASC?

- Section 5(c)(7)(B) of the Northwest Power Act provides that “the costs of additional resources in an amount sufficient to meet any additional load outside the region” shall be excluded from ASC.

Contract System Load

Q. How can the exchanging utilities' Contract System Loads be calculated and verified for ASC purposes?

- Under the 1984 ASC Methodology's jurisdictional approach, the Contract System Load is the firm energy load used by the state commission for the purpose of establishing retail rates, adjusted for distribution losses.
- Issues:
 - Losses
 - Different if Transmission is excluded
 - Data source
 - Regional vs. out of region
 - Multi-jurisdiction



Exchangeable Load

Q. How can the exchanging utilities' Exchangeable Loads be calculated and verified for ASC purposes?

- Section 5(c)(3) of the Northwest Power Act provides that “(t)he cost benefitswhich are attributable to any electric utility’s residential load within a state shall be passed through directly to such utility’s residential load within such state.”
- Issues:
 - Actual vs. forecast load
 - Rate schedules (residential customers, small farm, etc)
 - Compliance reviews



Prudency Review / Used & Useful /Contract & Plant Terminations

Q. Should the ASC Methodology provide BPA the ability to perform prudency or used and useful reviews?

- Under the 1984 ASC Methodology, resource additions need to be used and useful to be included in the ASC.
- BPA believes the 1984 ASC Methodology provides BPA the ability to perform a prudency review on all resources.



Functionalization Method

Q. What functionalization method(s) should be used to determine exchangeable costs for ASC?

- The 1984 ASC Methodology allows for:
 - Direct analysis
 - Allows a utility to assign costs when it has sufficient data demonstrating that such cost assignment is appropriate.
 - Functionalization ratios
 - Ratio method for assignment of costs to Production, Transmission, and Distribution/Other.

Residential Exchange Program Implementation Issues

Residential Exchange Program Implementation Issues

- Intervention Process
- ASC recalculation and filing frequency
- In Lieu Transactions
- Public Exchangers
- Others?

Intervention Process

Q. What intervention rights are appropriately provided in the ASC Methodology?

- The 1984 ASC Methodology facilitated participation in a jurisdictional rate review for BPA and its regional power sales customers.
- The purposes of intervention are:
 - Thorough understanding of costs
 - Ratepayer protection
- In the practical operation of the REP program, intervention activities were limited.
 - Volume of IOU and PUD filings was significant
 - Staff was limited for intervention.
 - Intervention was time-consuming and costly.



ASC Recalculation and Filing Frequency

Q. What is the appropriate frequency for ASC filings and determinations?

- The 1984 Methodology uses the jurisdictional approach, which requires a new ASC filing whenever a utility changes retail rates.
- Labor intensive for BPA, exchangers, and intervenors
- Assured up-to-date ASCs

In lieu Transactions

- Q. What criteria should apply to BPAs implementation of in lieu transactions?**
- Section 5(c)(5) of the Northwest Power Act provides in part that “in lieu” of purchasing any amount of electric power offered by a utility . . . “the Administrator may acquire an equivalent amount of electric power from other sources to replace power sold to such utility as part of an exchange sale if the cost of such acquisition is less than the cost of purchasing the electric power offered by such utility.”
 - This provision is a tool in controlling Residential Exchange costs. Properly structured, it would allow BPA to reduce its Residential Exchange expenses in situations where the market cost of acquiring power is less than what BPA would pay to acquire a utility’s exchange power at the utility’s ASC.
 - The original Residential Exchange contract (Residential Purchase and Sale Agreements, or RPSAs) required BPA to give a 7-year notice of its intent to in lieu and retention of the acquisition for at least 5 years.



Public Exchangers

Q. What provisions should be included in the ASC Methodology to address the differences between IOUs and public agencies?