CONSERVATION TRANSFERS AMONG UTILITIES: A PACIFIC NORTHWEST CASE STUDY

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This paper describes the implementation of a concept whereby the energy savings resulting from the installation of conservation measures by one entity is transferred and made available to another entity as a source of power.

The very idea of transferring energy savings from one utility to another leads to some interesting considerations. For example, energy savings, which appear as a reduction in load, cannot be transferred. As such, any conservation transfer must be supported by an available source of generation, as well as transmission. Also, energy savings cannot be "metered" as is the case with generation. They can be measured, however, but the results of such measurements are inexact and will most likely change from year to year. Therefore, in order to implement a conservation transfer effectively, methods must be established to quantify these savings in such a way that the parties involved are confident that the amounts agreed upon to be transferred are close to the actual energy savings being realized. Finally, there was a need to consider the extent to which there is an equitable sharing of benefits and risks among all of the following entities involved in the transaction: the utilities installing the conservation measures, the transferor, and the utility purchasing the transferred power.

In the authors' opinion, the conservation transfer concept, as implemented and described in this paper, is precedent-setting and a breakthrough for the Pacific Northwest, as well as the nation. The conservation transfer concept has tremendous implications, not the least of which is making the energy savings resulting from conservation activities a marketable commodity with market characteristics.

INTRODUCTION

In 1988, Bonneville Power Administration (BPA), was approached by Snohomish County PUD, Lewis County PUD, and Mason County PUD No. 3 (Conserving Utilities) to implement a conservation transfer proposal. Shortly thereafter, negotiations began among the Conserving Utilities, a transferring utility (BPA), and Puget Sound Power & Light Company (the Purchasing Utility), and continued for over 2 years, resulting in contracts which became effective March 1, 1990. A conservation transfer is any method whereby the energy savings resulting from the installation of conservation measures by one entity is transferred and made available to another entity as a source of power. The very idea of transferring energy savings from one utility to another leads to some interesting considerations. For example, energy savings, which appear as a reduction in load, cannot be transferred. As such, any conservation transfer must be supported by an available source of generation, as well as transmission. This means that the cost of a transfer must include the cost of generation, transmission, and some or all of the cost of the installation of conservation measures. Also, energy savings cannot be "metered," as is the case with generation. They can be measured, however, but the results of such

measurements are inexact and will most likely change from year to year. Therefore, in order to implement a conservation transfer effectively, methods must be established to quantify these savings in such a way that the parties involved are confident that the amounts agreed upon to be transferred are close to the actual energy savings being realized.

Specifically, the elements of the conservation transfer described in this paper are as follows. The Conserving Utilities agree to install and pay for conservation measures in their service territories, thereby reducing their loads on BPA, whom they rely upon for the majority of their firm power needs. BPA agrees to sell the "freed-up" energy created by the reduction in load to the Conserving Utilities at a "surplus" rate equal to the rate charged for the Conserving Utilities' firm power needs. The Conserving Utilities resell such energy to the Purchasing Utility at a rate greater than the rate which it pays BPA. Finally, BPA agrees to transfer such energy over its transmission lines to the Purchasing Utility's system.

The conservation transfer described in this paper creates a "win-win-win" situation. The Conserving Utilities benefit because the monies received from the Purchasing Utility help pay for conservation in their service territories. Also, the Conserving Utilities gain flexibility to implement programs which are responsive to their customers' needs. The Purchasing Utility benefits because it obtains a low-cost, long-term power supply to help meet its growing load at a price lower than its avoided cost. BPA benefits because the transfer provides for the development of conservation in the region without use of BPA funds, and BPA receives the benefit of a load reduction after the year 2001, when the conservation transfer contracts terminate. A discussion of the general applicability of conservation transfers may be found in the CONCLUSIONS section of this paper.

BACKGROUND

The Pacific Northwest Electric Power Planning and Conservation Act (Public Law 96-501) was passed by Congress in 1980. Known as the Northwest Regional Power Act (Regional Act), it brought about many big changes in Bonneville Power Administration's (BPA) roles and responsibilities as a Federal power marketing agency. For one, the Regional Act added power acquisition authority to BPA's marketing role, and established conservation as a first priority resource. The Regional Act also established a Regional Power Planning Council (Council), comprised of representatives from the four states which define the Pacific Northwest region (Oregon, Washington, and portions of Idaho and Montana). The Regional Act directs the Council to produce regional power acquisition plans, and further directs that BPA resource acquisitions be consistent with these plans. The Council adopted its first 20-year regional power plan in 1983, which was succeeded by its second 20-year regional power plan in 1986 (1986 Power Plan). The 1986 Power Plan took note of significant changes to the regional power situation since the passage of the Regional Act and the issuance of the first regional power plan in 1983.

When Congress passed the Regional Act in 1980, it was assumed that BPA would assume a lead role in the acquisition of most of the new conservation and generating resources in the region. The Council's 1983 power plan continued to assume that BPA would lead the region in acquiring new resources, and that the region's utilities and Federal agencies would work cooperatively with BPA to acquire the lowest cost, environmentally acceptable resources.

However, the 1986 Power Plan noted that regional cooperation with BPA for resource acquisition purposes had not been pursued to the extent assumed when the Regional Act was passed. BPA currently supplies about half of the region's power needs, while the other half is supplied primarily by investor-owned utilities (IOUs), who are not looking toward BPA as a source of firm power. When the 1986 Power Plan was prepared, BPA had a large energy surplus, and was not actively pursuing the acquisition of new resources, including conservation. In fact, BPA was looking at further reducing its conservation acquisition expenditures.

The 1986 Power Plan recognized that resource acquisition roles in the region would likely remain divided between BPA and the IOUs, and that this division would likely result in the acquisition of

more expensive resources than if the region were united around a cooperative resource acquisition strategy. In a worst-case scenario, low-cost conservation would remain undeveloped in public utility service areas served by BPA, where BPA's low and stable firm power rate and decreasing conservation program support offered little financial incentive to conserve. Other utilities, such as IOUs, who are charged a higher rate by BPA for firm power than the publics, were not choosing to buy firm power from BPA. They are instead turning to other resource alternatives to meet their needs. To the extent that these other resource alternatives (such as coal-fired generation) are costly, this would translate to higher electric rates for the IOU ratepayers, a situation that could adversely impact the region's economy and also contribute to increasing rate disparity among utilities. The 1986 Power Plan emphasized a renewed effort toward regional cooperation in resource acquisition.

The concept of conservation transfers was identified by the Council in the 1986 Power Plan as a mechanism for encouraging the development of low-cost, environmentally acceptable conservation resources in public utility service areas and transferring these resources to other utilities with higher cost resource options, such as IOUs. The 1986 Power Plan included the concept of conservation transfers as a linchpin in a package of actions which it estimated could save the region over $2 billion in power costs during a 20-year planning horizon. A BPA analysis done at that time confirmed that the potential benefits were large. Conservation transfers were estimated to provide about $1.3 billion of these total benefits, depending upon the magnitude of such transfers and the implementation of the concept.

METHODOLOGY

Obligations Incurred by the Conserving Utilities to Pay for and Install Conservation Measures

Quantifying the Energy Savings Resulting from the Installation of Conservation Measures. The mechanism for selling and transferring generation in amounts equal to energy savings ("Conservation Power") to the Purchasing Utility began with a desire by the Purchasing Utility that the Conservation Power be made continuously available to the Purchasing Utility on a firm basis during the period of the transfer. So obviously, it was necessary to establish an agreed-upon energy savings amount as close as possible to the actual energy savings, rather than attempt to measure the energy savings over time and adjust the Conservation Power amounts accordingly. The Purchasing Utility was not interested in a power purchase that would be changed from time to time as a result of "truing up" deliveries according to some agreed-upon method used to "meter" the actual energy savings. As a result, BPA and the Conserving Utilities set out to establish and fix the amount of energy savings, and thus the amount of Conservation Power available for transfer over the duration of the contract. Although this approach may sound risky, there are many known difficulties in measuring actual energy savings, which in fact would result in significant additional costs and still leave some parties with an uneasiness about the actual energy savings. BPA was able to mitigate this risk by using savings estimates based on field evaluations of programs similar to those implemented by the Conserving Utilities.

It was agreed that the Conservation Transfer would be based on predetermined estimates of energy savings resulting from installed measures and that these agreed-upon amounts would be specified in the contracts. Subsequent negotiations led to a determination of annual energy savings for each conservation program, how each program would be operated in order to minimize uncertainty of achieving the agreed-upon energy savings, and the schedule for the installation of the conservation measures under each program.

Assigning Energy Savings Values to "Units" Completed Under Conservation Programs. The Conserving Utilities expressed a desire to reduce the amount of oversight by BPA of the conservation activities carried out by the Conserving Utilities, as well as the administrative burden and costs of administering the contracts once the conservation programs were under way. The parties recognized that counting each measure as it was installed, and assigning an annual energy savings value to each such measure after it was installed, would be an administrative nightmare.

As a result, the concept of a "Unit" was developed by the parties, which was defined as the installation of one or more measures, depending on the conservation program, which would be assigned an annual amount of energy savings. For example, in the case of residential weatherization, a completed Unit would be a single-family home or a single apartment in a multifamily dwelling that had a certain minimum number of eligible conservation measures installed and assigned a specified amount of annual kilowatthours (kWh) of savings.

Thus, the job of accounting for the number of installed measures and the energy savings of each was made much easier, since all that was necessary was a count of the completed Units. For example, for the weatherization program, a simple count of the completed homes or apartments multiplied by the agreed-upon energy savings amounts for such Units established the savings.

However, in order to be comfortable with this simple form of accounting and the amount of energy savings assigned to completed Units, BPA required that a minimum set of major energy savings measures would have to be installed in each Unit, to be chosen by the Conserving Utilities from an agreed-upon list of eligible measures. BPA evaluations indicated this approach would produce on average the energy savings assigned to each completed Unit. For example, for a residential weatherization program, a completed Unit might be identified as an electrically heated single-family residence in which two major conservation measures were installed from the agreed-upon list. Specifications for correct installation of each eligible measure were also agreed upon.

Eligible Measures. The Conserving Utilities are operating four conservation programs: (1) Residential Weatherization, (2) Water Heating Efficiency, (3) Water Heater Rebates, and (4) Conservation Voltage Reduction. The conservation measures which were agreed upon for these programs were, for the most part, measures which had been offered by BPA under its own programs. The primary reason for this provision was a requirement by BPA that the eligible measures conform with the requirements of the National Environmental Policy Act (NEPA). The Conservation Transfer contract between BPA and each of the Conserving Utilities does allow for measure (and program) changes upon mutual agreement, as long as the total amount of agreed-upon savings is not compromised.

Oversight, Annual Reports, and Inspections. Although it was preferred by all parties that the amount of oversight and administrative burden be minimized, it was necessary for the protection of BPA's non-participating customers that Units were being completed correctly, and on schedule. As such, each Conserving Utility was required to submit to BPA at the end of each of the first 5 years of the contract an annual report describing the previous year's progress in each conservation program. Only five annual reports were required because all conservation measures will have been installed by the end of the fifth year. The annual reports would specify, among other things, how many Units were completed in each program for that year, and the costs incurred by the Conserving Utilities to complete those Units. BPA was interested in comparing the costs incurred by the Conserving Utilities with costs incurred by BPA under its own programs.

In addition to the requirement that BPA review and approve these annual reports, BPA also maintained the right to inspect completed Units and audit records relating to completed Units. As such, detailed records were required to be maintained by each Conserving Utility. These records must be sufficient to verify costs related to installment of all claimed measures (and thus Units).

Payment by the Conserving Utilities for Non-Performance of Their Conservation Obligations. If annual reports indicate that insufficient Units have been completed, or if BPA determines, through its rights to audit records and inspect Units, that sufficient Units have not been completed or have not been installed correctly, then BPA will notify the Conserving Utility of its findings. If the Conserving Utility receives such a notice and does not rectify the insufficiencies specified in the notice within a specified period of time, then the Conserving Utility must pay BPA the full cost required for

BPA to complete the number of Units required to ensure conformance with the contract. These costs are specified in the contract, as well as an appropriate method for escalating these costs over time according to the rate of general price inflation. Obviously, from BPA's standpoint, the penalty provisions for non-performance were necessary to assure that the Units would be completed as specified in the contract, and that the energy savings would be realized. This is particularly important, because the underlying principle in designing the sale and transfer of Conservation Power is that the energy savings from the completed Units be equal to the Conservation Power generated and transferred by BPA.

BPA Sale of Conservation Power to the Conserving Utilities

Description of Conserving Utilities' Power Sales Contracts with BPA. Each of the Conserving Utilities is a public utility district and has a long-term power sales contract with BPA. Public bodies, cooperatives, and Federal agencies within the Pacific Northwest region are entitled to preference and priority to BPA's firm power, and the "preference rate" which these public bodies pay for power is lower than that charged to the Purchasing Utility, which is an investor-owned utility.

Amount of Conservation Power Sold by BPA to the Conserving Utilities. As discussed in the first section under Methodology, BPA and the Conserving Utilities agreed that the completion of the conservation work would produce a specified level of energy savings during each year. This level of energy savings would manifest itself as a reduction in each Conserving Utility's load and thus a reduction of each utility's requirement on BPA under its power sales contract with BPA. This reduced requirement "frees up" an amount of Conservation Power which is then available for transfer. BPA agreed to sell to the Conserving Utilities and transfer to the Purchasing Utility an amount of Conservation Power deemed to be equal to the energy savings realized. The word "deemed" is used, because BPA and the Conserving Utilities agreed that the contractually specified annual kWh energy savings amounts are based on estimated rather than "actual" savings. Since the Conserving Utilities are installing the conservation measures during the initial 5 years of the term of the contract, the energy savings "ramp up" from 0 to a maximum of 6 average annual megawatts by the end of year 5. Correspondingly, the amount of Conservation Power sold and transferred ramps up to match the energy savings as they are realized. After year 5, the parties agreed to make the annual energy savings amounts equal, taking into account decay at the end of various measures' useful lives. The transfer of Conservation Power by BPA ends in 2001.

BPA Rate to the Conserving Utilities for Conservation Power Sold and Transferred. The rate charged by BPA for the sale and transfer of Conservation Power was derived from a surplus firm power rate schedule. Sales under this rate schedule are made when BPA has surplus power. Because this schedule allows for a negotiated rate, BPA agreed to sell and transfer this Conservation Power at a surplus rate equal to the "preference rate" under the Conserving Utilities' requirements contracts. Thus, assuming the amounts of Conservation Power are equal to the energy savings, BPA's revenues and load remain unchanged during the transfer, and BPA's other customers would remain unaffected.

Term of Contracts for Sale and Transfer of Conservation Power. The Conserving Utilities felt the sale and transfer of Conservation Power should continue for the life of the conservation measures being installed. BPA, on the other hand, felt that since this transaction was being tested on a pilot program basis, it should not go beyond July 1, 2001, the date of termination of the power sales contracts with BPA. Since BPA was unwilling to go beyond July 1, 2001, the Conserving Utilities asked that the total energy savings realized over the entire measure lives be "compressed" into the March 1, 1990 through July 1, 2001 time period, thus providing the Conserving Utilities with a greater amount of Conservation Power to mark up and resell to the Purchasing Utility. BPA rejected this proposal as well, due to the economic risk that this would place on all other BPA customers.

BPA Right to Terminate the Conservation Power Sale Prior to July 1, 2001. The law requires that BPA's sales of surplus power may be terminated by

BPA, to the extent such surplus power is needed by BPA to serve its firm requirements obligations to utilities, Federal agencies, and direct service industries within the Pacific Northwest. Accordingly, since the sale of Conservation Power is being made under a surplus rate schedule, BPA may terminate the surplus sale following a 5-year notice. If BPA issues a 5-year notice to terminate the sale, and the expiration of such notice occurs prior to July 1, 2001, then BPA has agreed to pay the Conserving Utilities money in amounts needed to purchase power for delivery to the Purchasing Utility until July 1, 2001. But if the Conserving Utilities use their own generating resources (which are currently being used to meet load under their power sales contracts with BPA) to serve the Purchasing Utility obligation, then BPA pays no money.

Transfer of Conservation Power to the Purchasing Utility

BPA agreed to transfer Conservation Power equal to the aggregate of the agreed-upon energy savings directly to the Purchasing Utility. Normal BPA practice would be to deliver the Conservation Power to each Conserving Utility, and each Conserving Utility would then incur a charge to wheel the Conservation Power over BPA's transmission system to the Purchasing Utility. However, because BPA had not developed a policy with regard to wheeling for conservation transfers, and because of the benefit to BPA of this particular transaction, BPA agreed to transfer the Conservation Power directly to the Purchasing Utility. BPA entered into a scheduling contract with the Purchasing Utility, which allowed for specified amounts of Conservation Power to be prescheduled and delivered to the Purchasing Utility's system.

In addition to the wheeling concern, determining the seasonal and hourly shape of BPA's deliveries of Conservation Power to the Purchasing Utility was also a major issue. BPA was adamant that the shape of the Conservation Power deliveries match the shape of the energy savings being realized, to the extent possible. The Purchasing Utility shared BPA's concern. Drawing on their respective programmatic conservation evaluation experiences, BPA and the Purchasing Utility were able to agree on a shape for deliveries that both felt was representative of the shape of the energy savings.

Resale of Conservation Power by Conserving Utilities to the Purchasing Utility

Contractual Arrangements. The Conserving Utilities entered into contractual arrangements to resell the Conservation Power purchased from BPA to the Purchasing Utility at a negotiated rate which exceeds the rate paid to BPA. The net revenues received by the Conserving Utilities will be used to defray their conservation program expenditures. Only one of the Conserving Utilities (Snohomish County PUD) contracted directly with the Purchasing Utility. As a result, Snohomish then entered into separate contracts with the other two Conserving Utilities (Lewis County PUD and Mason PUD No. 3). Under these contracts, Snohomish agreed to resell the aggregate of the energy savings realized from all three Conserving Utilities to the Purchasing Utility. Snohomish would then, under its contracts with the other two Conserving Utilities, pay those utilities a portion of the monies received from the Purchasing Utility, which is in direct proportion to the energy savings being realized by each such utility.

Purchasing Utility to Receive Conservation Power for 20 Years. Snohomish agreed to sell Conservation Power on a non-interruptible basis to the Purchasing Utility for 20 years, even though the transfer arrangements with BPA and the separate contracts between Snohomish and the other two Conserving Utilities terminate on July 1, 2001. Until July 1, 2001, the Conserving Utilities are reselling Conservation Power purchased from BPA. After July 1, 2001, Snohomish will continue to provide the Purchasing Utility with Conservation Power until 2010. Snohomish will provide this Conservation Power either from its own generating resources or from another source.

RESULTS

The obvious major result was the execution of contracts by all participating parties. The effective date specified in these contracts is March 1, 1990, so conservation program operation, Conservation

Power deliveries, etc., have begun. BPA has also begun a process evaluation of the conservation transfer contracts, the results of which are not yet available. Following is a discussion of benefits, costs, and risks for the various participants.

Benefits to the Conserving Utilities and the Purchasing Utility

Benefits to the Conserving Utilities. The Conserving Utilities benefit because the net revenues received from the Purchasing Utility help pay for conservation in their service territories. The Conserving Utilities also gain flexibility to implement programs of their choice which are responsive to their customers' needs. For example, the Conserving Utilities are faced with long backlogs of residential customers waiting for weatherization services. The transfer provides revenues from the Purchasing Utility to defray program costs, thus minimizing rate impacts.

Benefits to the Purchasing Utility. The Purchasing Utility obtains a relatively low-cost, long-term power supply to help meet its load growth. This power is obtained at a price lower than the Purchasing Utility's avoided cost, thus minimizing rate impacts.

Benefits to BPA

Avoided Conservation Program Costs. The economic benefits that accrue to BPA (and thus to BPA's non-participating customers) come in large part from the conservation program costs that BPA avoids, since the Conserving Utilities have agreed to bear these costs. The value of these conservation resources is realized after BPA stops transferring Conservation Power, and the remaining life of the installed measures becomes a resource to BPA due to the reduction in load. However, the benefits were not assumed to be the same under all future load growth possibilities.

Expected Net Benefits Under Low, Medium, and High Load Scenarios. BPA assumed no net benefit under a low load growth scenario since it was assumed that BPA would wait until beyond 2001 before deciding to operate any of these conservation programs. There are no program costs that are being avoided in this case, and therefore, no benefit. The benefits derived under the high load scenario are greater than the benefits calculated under the medium load scenario because it was assumed that BPA would incur conservation program costs much sooner in time, since the conservation resources would be needed much sooner under high loads. This result alone will provide a larger present value benefit. Also, it was assumed that, under high loads, BPA would be purchasing a greater amount of cost-effective conservation due to much larger power deficits and higher marginal costs. This means that it was assumed that BPA would be willing to use Federal funds to operate all of these programs. The benefit under high load growth is reduced, however, as a result of the need to make acquisition payments to the Conserving Utilities, since it is assumed that a 5-year notice would be issued to terminate the power sale. Under the medium load scenario, BPA assumed it would only be operating a weatherization program, and at a much slower market penetration rate, providing energy savings as needed further out in time but still during the term of the conservation transfer agreement. Under this same medium load scenario, BPA assumed it would be encouraging its utility customers to operate the other conservation programs, but that BPA would not be actively funding them.

Based on the assumptions discussed above, the estimated net benefits to BPA (and its non-participating customers) under the various load growth scenarios are as follows:

Present Value Net Benefits (1989 $000)

Low Loads	Medium Loads	High Loads	Expected Values
-153	7592	5838	5217

Thus, the expected benefit to BPA's non-participating customers from the conservation transfer program is about $5 million over the next 20 years. BPA assumes that the probability of either low or high loads occurring is one-half of the probability of medium loads occurring.

Costs and Risks to the Conserving Utilities and the Purchasing Utility

Costs and Risks to the Conserving Utilities. The Conserving Utilities do not completely recover their conservation investment through the transfer, since

the net revenues from the Purchasing Utility will not cover the entire cost of the programs. So there is some rate impact. However, the energy savings value of the measures is expected to last beyond the transfer period, and will thus continue to provide benefit by way of avoided purchases from BPA. It may be that the combination of net revenues from the Purchasing Utility and reduced power purchases will cover the cost of the conservation investment, especially since the value of the reduced power purchases will escalate over time, while the conservation investment will remain fixed. If BPA issues a 5-year notice to terminate the power sale, the Conserving Utilities may encounter high cost alternatives to continue the sale to the Purchasing Utility, which may not be covered by BPA's acquisition payments. There is also risk that the Conserving Utilities will not be able to implement the programs to the levels required by the contracts, exposing them to liquidated damages payments to BPA.

Costs and Risks to the Purchasing Utility. The Purchasing Utility is not exposed to any identifiable costs and risks.

Costs and Risks to BPA

Risk to BPA of Incurring an Obligation to Make Payments if Conservation Power Deliveries Terminated Prior to 2001. As discussed in Methodology, BPA may terminate deliveries of Conservation Power if such power is needed to serve its firm requirements obligations. In this event, which is assumed to occur only under high load growth, BPA agreed to make payments to the Conserving Utilities during the remaining term of the contract, and it is these payments that have reduced the net benefits shown above under the high load growth case. These payments were based on the difference between the rate charged for Conservation Power and BPA's marginal cost of acquiring power. These payments would be used by the Conserving Utilities to purchase power to support their sale to the Purchasing Utility. But if the Conserving Utilities use their own generating resources (which are currently being used to meet load under their requirements contracts with BPA) to serve the Purchasing Utility obligation, then BPA pays no money. In any event, these payments would create no more of an economic risk to BPA than if BPA did not terminate deliveries, but instead acquired the necessary resources to replace the conservation resources that BPA would otherwise rely on to meet some of this load growth.

Risk to BPA of Load Reduction When Not Needed. Under a low load growth scenario, BPA would not be in need of the conservation resources in 2001, and the additional load reduction from the installed measures would result in a revenue loss, since BPA's marginal cost of power is projected to be less than the projected rate for Conservation Power under low load growth. However, the magnitude of this risk is very small.

Risk of Inaccurate Estimates of Conservation Energy Savings. In deriving and thus fixing each energy savings estimate, BPA relied on data and findings from its own program evaluations where possible. Also, there were additional steps taken to minimize the uncertainty of the estimates as described above in Methodology. These include the BPA requirements for the installation of specific eligible measures in each completed Unit, clear specifications for proper installation, and contractual rights for BPA to audit program records and inspect the installation of the measures. Because BPA required a minimum set of eligible measures to be installed in each completed Unit for each program, there is confidence that each program would produce on average the energy savings which were agreed upon.

Nonetheless, the agreed-upon savings estimates were projections, and some uncertainty remained. The risk from uncertainty about the energy savings estimates affects only the cost side of the equation however, and not the benefits that BPA (and all other non-participating utilities) are expected to gain from the Conserving Utilities operating and paying for conservation programs that BPA would otherwise be operating. In other words, without the conservation transfer program, it is assumed that BPA would continue to operate the same programs, pay the same costs, and achieve the same savings.

As such, the risk to BPA's non-participating customers occurs only during the periods under the various load growth scenarios when it was assumed that BPA would not be operating the same

programs. As explained above, this would be during low load growth for all programs, and during medium load growth for some programs. The major concern was that the estimates exceeded actual savings. However, since during these periods the net cost of serving the additional load would be small should the estimates be greater than actual savings, the net benefits shown above would not significantly change.

CONCLUSIONS

The implementation of the conservation transfer concept as described in this paper has shown that what heretofore has only been a concept is now a reality. It should be noted that there are many ways to implement the conservation transfer concept other than the way described in this paper; in fact, the authors explored several alternatives during their negotiations with the participating entities.

Generally, the environment which existed at the time of this transaction included a group of non-deficit utilities with a low and stable firm power rate (Conserving Utilities), and another utility experiencing a power deficit and relatively high power acquisition costs (Purchasing Utility). And of course, the environment included a transferring utility (BPA) with adequate generation and transmission to enable a transaction which has resulted in benefits to all participating entities. The Council has applauded this effort, and has encouraged BPA to continue its partnership approach with regional entities to encourage greater participation.

The reader may wonder about the applicability of conservation transfers on a more general basis than the specific transaction described in this paper. For example, the Conserving Utility and the transferring utility could be one and the same, but only if this utility has generation capability and access to transmission services. So Snohomish could have done the transfer without BPA, but it would have incurred wheeling charges over BPA's transmission lines to Puget. The other two Conserving Utilities were not in a position to assume this role. Successful transfers capture diversity among utilities' costs for providing firm power to their customers. Diversity in available conservation penetration in utility service territories also affects the transfer mechanism. And finally, diversity among utilities experiencing deficits as opposed to utilities with a surplus (or a guaranteed long-term power supply) is a contributing factor. It is also important to keep in mind that BPA's statutes are unique, and would not apply in other utility transfers.

SUMMARY

In the authors' opinion, the conservation transfer concept, as implemented and described in this paper, is precedent-setting and a breakthrough for the Pacific Northwest as well as the nation. The conservation transfer described herein represents an achievement that has tremendous implications, not the least of which is making conservation a marketable commodity with market characteristics.