SIXTH FLOOR, 900 HOWE STREET, BOX 250
VANCOUVER, B.C. V6Z 2N3
CANADA

BRITISH COLUMBIA UTILITIES COMMISSION

BRITISH COLUMBIA
UTILITIES COMMISSION

ORDER
NUMBER G-127-97

TELEPHONE: (604) 660-4700
BC TOLL FREE: 1-800-663-1385
FACSIMILE: (604) 660-1102

IN THE MATTER OF
the Utilities Commission Act, R.S.B.C. 1996, Chapter 473

and

An Application by Princeton Light and Power Company, Limited
for Approval of its Rate Design - TRANS-X Application

BEFORE: L.R. Barr, Deputy Chair and Acting Chair; K.L. Hall, Commissioner; F.C. Leighton, Commissioner — December 4, 1997

O R D E R

WHEREAS:

A. On June 9, 1997 Princeton Light and Power Company, Limited ("PLP") applied to the Commission for approval of its Rate Design initiatives identified as "TRANS-X Rates" pursuant to Sections 23 and 61 of the Utilities Commission Act; and

B. The Commission, by Order No. G-71-97, set the application down for a written public hearing process by which Intervenors and Interested Parties could obtain information from PLP. The written hearing process concluded on October 1, 1997 with the submission by PLP of its final information response; and

C. The Commission has reviewed the evidence and information filed in the proceeding and issues its Reasons for Decision.

NOW THEREFORE the Commission orders that PLP's application for approval of Rate Design initiatives be denied. The Commission's Reasons for Decision is attached as Appendix A to this Order.

DATED at the City of Vancouver, in the Province of British Columbia, this 4th day of December, 1997.

BY ORDER

Original signed by:

Lorna R. Barr
Deputy Chair
and Acting Chair

Attachment
Order/PLP-TRANS X Reasons

PRINCETON LIGHT & POWER COMPANY, LIMITED
TRANS-X RATE DESIGN APPLICATION

REASONS FOR DECISION

1.0 INTRODUCTION

1.1 Background

Princeton Light & Power Company, Limited ("PLP") is an investor-owned utility located in Princeton, B.C. PLP serves primarily residential and commercial customers, along with a single large industrial customer (Weyerhaeuser).

On June 9, 1997 PLP submitted to the Commission a Rate Design Application entitled TRANS-X. This application, made pursuant to Sections 23 and 61 of the Utilities Commission Act ("the Act"), is aimed at unbundling existing rates and providing new service options.

On July 2, 1997 the Commission issued Order No. G-71-97, which determined that the TRANS-X application would be considered by way of a written hearing process.

No intervenors elected to participate in the written process and, therefore, Commission staff and PLP worked directly to analyze the TRANS-X application.

On August 1, 1997, Commission staff met with John Hall, President and CEO of PLP. At the meeting, it was decided that PLP would commission a Cost of Service Study ("COSS"), provide a report supporting and justifying new Energy Efficient Usage ("EEU") rates, and submit revised pages to correct errors in the original application. The demand for this (and other) information was formalized in an Information Request dated August 14, 1997. The response to this Information Request was submitted by PLP on August 22, 1997, except for the COSS (prepared by Willis Energy Services), which was filed on September 26, 1997.

2.0 THE APPLICATION

2.1 Description of the Application

In its TRANS-X application, PLP proposes two new initiatives designed to respond to changing market conditions. The Utility seeks to unbundle its rates, and to introduce new Energy Efficient Usage rates. In

addition, PLP seeks to allocate its revenue requirements in a manner that reflects the true cost of service for each customer class.

2.2 Unbundling of Rates

PLP seeks to unbundle its rates in preparation for market restructuring. In putting forward this proposal, PLP states it believes that:

> "... the markets of the future are going to be much different than we presently deal with. We think that competition will become a reality – it is only to what degree that remains uncertain. Wholesale wheeling, or system access, is a major opportunity for PLP as it expands the options for purchasing its energy requirements without putting its own customer base at risk. Retail wheeling does put [PLP's] customer[s] in a position to make choices as to whether they purchase their energy requirements directly from the Company or from another supplier. In this event [i.e., retail access being introduced] the Company will require an approved Tariff to provide...transportation service while being allowed to earn sufficient revenue to keep it financially whole. PLP does not feel that it is appropriate to wait until this condition [retail wheeling] may become a reality; but that it should proceed with planning to acknowledge this possibility by way of a new Tariff."
> (TRANS-X application: p. 5)

The TRANS-X application proposes to break rates into three charges: ENERGY, SERVICE, and ACCESS. The purpose of this, according to PLP, is to prepare the utility for the advent of retail wheeling, which it sees as inevitable.

In the TRANS-X Tariff, the ENERGY charge is designed to be a straight pass-through to the customer of the Utility's cost of purchased power. Every customer, regardless of rate class, would pay the same per-kilowatt-hour price for ENERGY, without reference to the differences in load factor from one customer class to another. Similarly, the SERVICE charge is based on meter reading costs and is levied at the same rate for every reading, regardless of customer class.

The ACCESS portion of the rates is a residual, collecting the remaining revenue requirement not earned by the ENERGY or SERVICE charges. In the TRANS-X application, the ACCESS charge is intended to capture the cost of operating the distribution plant and the individual customer service connections. According to PLP, differences in load factors are addressed through the ACCESS charge.

Once the revenue to be collected through the ACCESS charge is established, PLP seeks the appropriate ratio between kV.a demand and kW.h consumption to establish the ACCESS charges for each rate class. The approach used to determine this ratio is critical if differences in class load factors are to be captured in rates.

Commission staff sought additional detail on the approach taken to allocate the ACCESS charges between energy and demand for each rate class. In response, PLP has produced a report illustrating the criteria and methods it used in developing the TRANS-X rates (Exhibit C, BCUC IR#1). This report suggests that the allocation ratios are based on subjective assessments. For example, the report states:

> "With the appropriate amount of income to be collected through the access charge established, a judgment as to the appropriate ratio between KVA demand versus KWH consumption was made to establish the ACCESS charge for each class."
> (TRANS-X Application: p. 1)

More specific examples show the type of analysis used to generate these allocation ratios:

- Class JX (Weyerhaeuser):

  "'As goes Weyerhaeuser, goes PLP' when it comes to setting a system load factor. For this reason alone, it was established that the access charge for Schedule JX would be 100 per cent allocated to KVA demand." (TRANS-X Application: p. 2)

- Class C-4X (Small General Service):

  "Our judgment after review of the data available [no details are given on either the data or the analysis] on this class was that we start by placing a 25% value on the KVA usage and 75% on the KWH consumption." (TRANS-X Application: p. 3)

- Class C1-X (General Service):

  "Many [of these customers] have wide seasonal swings in KWH consumption [and] all have significant but not large KVA requirements. [Therefore it is] judged that there should be more emphasis placed on KVA than KWH consumption, [so] access [is] set at 55% KVA [and] 45% KWH." (TRANS-X Application: p. 3)

2.3 Energy Efficient Usage Rates

PLP seeks to institute Energy Efficient Usage rates, in part to adopt a strategy for more effective use of Demand Side Management ("DSM") resources and, in part, to improve the utility's competitiveness with gas in the space- and water-heating markets for new construction. PLP states:

> "Our study shows that "energy efficiency" can be much better addressed, and rewarded, by introducing new rate schedules which specifically deal with the issues facing the available DSM alternatives. Energy efficient electric heating, lighting and water heating control systems are very hard to sell during new construction due to their poor pay-back ratios. PLP is proposing to introduce two new schedules which will offer much lower rates to customers who can meet the stringent 'energy efficient usage' specifications set for these schedules...The SERVICE and ENERGY rates will not differ from the rest of the TRANS-X rates but significant savings will be offered through additional discounting on the ACCESS rates. This creates a '*forever*' incentive and improves the pay-back period for these investments by the customer." (TRANS-X Application: p. 64)

and

> "Without these [EEU] rates customers who have access to natural gas will obviously choose to go that route for space- and water-heating." (TRANS-X Application: p. 67)

The energy efficient usage rates proposed by PLP are intended to address two basic problems. First, PLP feels that its existing electricity rates leave the utility uncompetitive against gas in space heating for new construction. Second, PLP feels poorly served by the existing Power Smart program, and believes that price-breaks built into energy rates are preferable to grants as an incentive to build energy efficient technologies into new construction.

2.4 Allocation of the Revenue Requirement

In working toward these objectives, PLP seeks to ensure that its TRANS-X proposal properly reflects the true cost of service to each customer class. PLP states that:

> "The purpose of revising the electric tariffs to our TRANS-X proposal is to properly reflect the true costs of service to each customer class without causing excessive cross subsidies between the classes to occur." (TRANS-X Application: p. 5)

To that end, PLP filed what it describes as a Cost of Plant in Service Study and a Fully Allocated Cost of Service Study. These studies are designed to demonstrate that the proposed rate design reflects true costs on both an intra-class and inter-class basis.

In general, cost of service studies follow four distinct steps:

1. the total costs to be allocated are determined;
2. these costs are divided by function (e.g., generation, transmission, distribution, and so on);
3. the functionalized costs are classified between capacity, commodity, customer, and so on; and
4. these costs are allocated to customer rate classes.

Various decisions are required in the preparation of a cost of service study. The two most significant are determining the type of study to be undertaken (e.g., historical or marginal cost) and choosing a method to allocate the capacity costs to the rate classes (e.g., average demand, coincident peak responsibility, or average and excess). Depending on the method selected, a rate class can be assigned a significant portion of capacity costs or no capacity costs at all. Less judgment is required in the functionalization and classification of costs.

The PLP COSS should illustrate the appropriateness of cost recoveries expected under the TRANS-X Tariff for each customer rate class (PLP used a fully allocated cost of service methodology, and analyzed 1996/97 data on an historical basis, and 1997/98 data on a prospective basis, with little difference in outcomes between the two).

In the Plant in Service Study, the TRANS-X revenue to cost contribution ratios are shown as follows:

Class	Contribution Ratio
Residential	0.6
Small General Service	1.3
General Service	4.1
Large Industrial	1.0
Street Lights	3.4
Lease Lights	1.9
Irrigation	0.2

According to the COSS, the TRANS-X rate design process does not address the serious revenue to cost ratio problems built into the current PLP rate structure. Specifically, the COSS predicted the following changes under the proposed TRANS-X rates (it should be noted that the COSS contained no explicit calculations of current or expected revenue to cost ratios):

- Total cost under-recovery is $13,000 under the current rates and calculated to be $6,000 under the TRANS-X rates.

- Residential under-recovery is $401,000 under the current rates and calculated to be $404,000 under the TRANS-X rates.

- Industrial/commercial class over-recovery is $294,000 under the current rates and calculated to be $289,000 under the TRANS-X rates.

- Weyerhaeuser over-recovery is $22,000 under the current rates, and calculated to be $24,000 under the TRANS-X rates.

3.0 COMMISSION DETERMINATIONS

The Commission views the TRANS-X application as a major rate re-design. It is important for PLP's ratepayers, of course, but PLP is also attempting to innovate – to position itself ahead of the general pace of market change. This is a fair approach and, the Commission believes, a prerogative of PLP's management. Still, while the Commission wishes to encourage innovation, PLP must also address the regulatory issues of cost incidence and fairness to all ratepayers before a major rate re-design can be endorsed.

The Commission endorses the broad initiatives in the TRANS-X application, and supports its stated objectives. However, detailed review has exposed some serious weaknesses.

First, PLP has failed to demonstrate that its proposed methodology for unbundling is fair and economically sound. In particular, the Commission is not satisfied that the rates, as structured, will send the appropriate price signals (i.e., the appropriate encouragement to improve load factors). In short, the Commission does not believe that the demand component of the ACCESS charge is a sufficient and acceptable alternative to setting a demand charge in the ENERGY portion of the rates. This view is a function, in part, of the subjective methodology used to develop the allocation ratios underlying the ACCESS charge for each class.

Second, justification for the new EEU rates is similarly insufficient. The concerns motivating the rates' development – that certain markets are being lost to gas in the area of new construction – is probably legitimate, and the Commission is sensitive to these concerns. However, the appropriateness of the goals does not mitigate the need to demonstrate that, in execution, the proposed rates are an efficient way to achieve the desired end. PLP has failed to make this case.

Further, the main intention of the rates appears to be load retention rather than DSM, since the technological installation-related requirements of the rates are modest and of debatable efficacy relative to the existing building code.

This may be acceptable, if the rates were crafted to reflect a marginal benefit to ratepayers. But this is not shown by the supporting evidence. As a result, the half-off-ACCESS pricing of the EEU rates appears to be basically arbitrary. PLP has not shown that the customers will be drawn away from gas at this price, or that they wouldn't choose electricity for a smaller saving. Without a careful analysis of the marginal costs and benefits to the utility, there can be no means to evaluate the impact of the EEU program on PLP ratepayers.

Third, the Commission is not satisfied that the COSS provided is sufficient to address the most fundamental concerns about PLP's proposed allocation of its revenue requirement under the TRANS-X application. Indeed, the Commission found several problems with the COSS, particularly as regards the allocation of categorized costs to rate classes (the PLP COSS took 31 line-item costs and assigned them among ten different "categories", such as purchased power, transportation, and property taxes). Notably:

- *Purchased Energy Costs* were assigned to classes based on the consumption by customers in the class. Since this is the same method by which revenues are being determined (i.e., load factor is not a consideration), a 1:1 revenue to cost ratio will result by definition.

- *Customer Service Costs* were allocated to classes based on the approach used in the TRANS-X application to develop the customer SERVICE charge. It is axiomatic that this, too, will produce a 1:1 revenue to cost ratio.

- *Maintenance (remainder of) and Depreciation/Amortization Expense* was allocated to classes on the basis of the Plant in Service Study included in the TRANS-X application. This makes sense, according to the COSS, since "[t]he Plant in Service Study identified plant assets which were specifically associated with the delivery of services to different rate classes." In fact, however, the Plant in Service Study is much less exact than that. It links assets to customer classes not by "specific association" but by distance-weighting the entire plant and by an unsupported method of demand cost allocation. Specifically, concentric circles are notionally drawn at 5 kilometer intervals emanating from the PLP substation. Plant is assigned to customer classes within the same geographic ring by "applying the KVA demand caused by each tariff to the overall cost of plant in the zone. Costs of the substation are allocated based on the KVA demand caused by each tariff group, while customer service items are distributed evenly among all customers." There is no evidence that this method of allocation is right for the PLP plant. Moreover, PLP has distance-weighted the entire cost of its plant, rather than attempting to discern which elements of the plant represent costs that are not distance-related. Further, even if this problem is ignored, PLP has not shown that *any* distance-weighting methodology is appropriate given the characteristics of its service area; specific assignment may well be the only viable approach. On its face, the Cost of Plant in Service Study appears to assign too great a share of plant costs to those living on the outskirts of the system.

- *Remaining "Other Costs"* were "arbitrarily" allocated (pro rata) on the basis of the three stages listed above. *Contribution to Financing Costs and Return on Equity* were allocated based on the Plant in Service Study. These stages, therefore, carried with them some or all of the problems identified in the assessments of the first three stages.

Alternatively, if the allocations were accepted as shown, then the COSS would demonstrate that the new rates make no progress toward correcting the very serious allocation problems that now exist. The Commission cannot accept a major rate design initiative such as TRANS-X that entrenches existing inequities between customer classes.

The Commission must, under Section 60 of the Act, have due regard to the setting of rates that are not unjust or unreasonable. **For reasons discussed above, the Commission finds that PLP's TRANS-X application has failed to satisfy this requirement.**

The Commission, therefore, does not approve PLP's TRANS-X rate design application pursuant to Section 60 of the Act.

DATED at the City of Vancouver, in the Province of British Columbia, this 4th day of December 1997.

Original signed by:
Lorna R. Barr
Deputy Chair and Acting Chair

Original signed by:
Kenneth L. Hall, P.Eng.
Commissioner

Original signed by:
Frank C. Leighton, P. Eng.
Commissioner