Pancaking
An Efficiency Problem for the Pacific Northwest

A. Introduction

The term "rate pancaking"refers to the payment of multiple embedded-cost transmission rates for a single transaction across multiple transmission systems. Pancaking also refers to transactional pancaking—the difficulties associated with doing business with multiple transmission owners for a single power transaction. These difficulties include having to request transmission using multiple OASIS sites, multiple system impact studies and solutions if necessary, subsequent multiple contracts, differing scheduling protocols from owner to owner, multiple ancillary charges in addition to embedded charges, multiple credit checks, differing methods of calculating ATC from owner to owner, and the general transactional friction of having to deal with more than one transmission system.

In short, problems cause by rate and transactional pancaking include the following.

1) Pancaking impacts the efficiency of short-term markets by imposing fully embedded costs on marginal transactions, resulting in less than efficient dispatch of resources, many missed opportunities, and overall increased costs to consumers.
2) Pancaking impacts long-term markets and resource choices because of the difficulties in dealing with multiple queuing and planning (system impact) processes. This includes evaluation of system improvements on a system-by-system basis, rather than on a grid-wide basis. Timing difference in the answers to requests on multiple systems may create difficulty if multiple, but mutually contingent, commitments are required.
3) Pancaking also limits both long- and short-term transactions because of the transactional costs imposed by having to deal with multiple reservation, scheduling, credit, and settlement procedures.
4) Pancaking inhibits the creation of an ancillary services market through both payment of multiple embedded costs rates and the transactional difficulties of dealing with multiple systems. Transactions otherwise beneficial to sellers and buyers may not be concluded due to the timing required to negotiate multiple transmission systems and the difficulty in reserving ATC for ancillary service products.

Rate pancaking can effectively be eliminated without cost shifts through use of the Company Rate pricing approach used in the RTO West Stage 2 filing. The Company Rate approach along with the commitment to recatalogue non-converted rights each year to account for load growth went a long way towards solving the problem of long-term rate pancaking for BPA's preference customers served over GTAs or their replacements.

B. Short Term Impacts of Pancaking

Short-term economy energy purchases help bring the lowest cost power to consumers. In this market, higher cost resources can be displaced on a short-term basis and the least expensive marginal cost resource can be run and delivered to load. Embedded costs of a transmission system are collected primarily from long-term firm uses of that system. The marginal use of the transmission system by short-term sales imposes little, if any costs on the transmission system[1]. Charging fully embedded cost to these marginal power transaction often results in the loss of the beneficial transaction. In other words, the addition of multiple pancaked embedded cost charges can add enough costs to a transaction that the delivered cost of power from a low cost resource may ultimately be higher than that of a higher cost resource as a result of pancaked rates.

Consider a situation where a buyer must choose between two resources to serve its load on a marginal basis. The first resource, Resource A, costs $22 per megawatt-hour to operate on an incremental basis. Assume there is no congestion associated with bringing either Resource A or Resource B generation to the load in question. Resource A is located within the same control area as the load, thus faces its embedded transmission charge associated with the first transmission owner, let's say $3/MWH. The delivered cost to bring Resource A to load is $25/MWH. A second, less expensive, distant generator is available, Resource B. Power from this generator is available for $20/MWH on an incremental basis. However, in order to import power from the cheaper distant generator, the buyer must pay another embedded transmission cost across an intervening control area; let's say $4/MWH, plus the charge for the transmission system where the load is located. Thus, the buyer's total cost of using the cheaper generator is $27/MWH.

In this example, the resource with the more expensive incremental cost resource is run, Resource A. Not only is the delivered price of Resource A less expensive, $25/MWH, than Resource B, but also it is easier for the operators to get this resource to load since they only have to deal with request, scheduling, ancillary service, and settlement on one system. Society in general, and this load in particular has a less than efficient result. The inefficiency results from the charging of embedded costs of the second transmission system to a marginal transaction. The costs of these inefficiencies are paid by all of us in rates, either our own, through more expensive than necessary transactions, or BPA's through missed economy transactions which do not take place due to pancaking.

C. Transactional Difficulties in the Short-Term Market

Operators are often forced to make decisions in extremely short periods of time. Even in the pre-schedule period, time to make short-term resource choices is very limited. Reports from operators indicate that they will generally not deal with a pancaked

[1] Some would argue that losses are an incremental cost of a short-term, marginal use of the transmission system. However, the pancaked system simply charges multiple losses for this transaction. It provides no way to credit what may actually be happening with losses on the system. An incremental transaction may actually reduce losses on the system (if it is a counterflow), or may otherwise improve the overall performance of the system in a given hour.

transaction for periods of less than a month. The incremental amount of time and complexity added by having to access transmission on multiple OASIS, submit multiple schedules, and adjust multiple schedules in real-time, often restrict operators from considering these transactions. These missed opportunities are the reality of the tight time frames that all of our operators must function within. The reality is that transactional pancaking has a cost to the efficiency of the system.

D. Pancaking Adversely Affects The Type and Location of Generation

Transactional pancaking encourages construction of generation close to load in order to minimize the number of control areas and embedded costs rates a generator must deal with. Currently, this means natural gas-fired generation is accounting for the vast majority of new resources in the Pacific Northwest. Transactional pancaking has a pronounced impact on resource development. The securing of long-term firm transmission on multiple systems can be difficult. Multiple queues for transmission requests may be answered at different time. System impact studies may mean incremental costs on multiple systems. Without the ability to look across the entire grid, the improvements required for a single generator may be more costly than necessary, redundant to, or even in conflict with, improvements going on in other parts of the system. We have heard time and time again that developers cannot secure firm transmission rights across one system, let alone multiple systems, and so can not secure financing. No doubt there is a better solution to this problem.

By not addressing this problem we are indeed limiting the ability of the market to provide a mixed basket of resources to our power system. Leaving these problems unresolved increases our dependence on one fuel type, natural gas, and makes the power system more susceptible to price volatility and supply disruption. Our experience over the past 3 years has demonstrated that the rate-paying public has little stomach for volatile energy prices.

The pancaked system of transmission also does not take into account benefits that may accrue from remote generation. There are many reasons why remote generation is preferable from a societal viewpoint. Reduced impacts on urban air quality, noise pollution, and land use considerations, to name a few, are potential benefits from remote generation. The current pancaked system has no way to deal with these potential benefits or to address the inefficiencies brought about by pancaking.

E. Pancaking Inhibits Creation of Ancillary Services Markets

Ancillary service markets have not developed for many reasons. Contributing to the problem is pancaking. The payment of multiple embedded cost transmission rates and the transactional burden of multiple control areas generally may make it difficult or uneconomical to reserve transmission needed for ancillary services. Our current system does not deal well with reservation of capacity for ancillary services unless you happen to be a control area operator. This creates market power for control area operators in the ancillary service arena.

Addressing the pancaking issue could rationalize the need for and provision of transmission for ancillary services across multiple systems resulting in efficiencies. These efficiencies translate into lower rates for customers. Indeed, all loads including rural dispersed loads would benefit from the creation of ancillary service markets. Band-aid solutions such as creating ancillary service markets close to load only benefit major urban load centers and do not provide a system-wide solution.

Instead of crafting solutions that accept the inefficiencies of the current pancaked system, elimination of the underlying problem would create a more efficient system all together.

F. Cost Shifting Can be Avoided through use of the Company Rate

Some argue that eliminating rate pancaking will cause cost shifts. The costs at issue are the current payments for pancaked rates. This is an issue that the region has struggled with and solved. The Company Rate approach to embedded cost pricing addresses this problem while freeing the market from the hindrances of pancaked rates in the future. Indeed, Company Rate pricing is intended to keep parties whole with respect to current payments.

G. Conclusion

Rate and transactional pancaking is a problem for the Pacific Northwest. It results in reduced efficiency in the use of generation by assigning embedded costs to marginal transactions. This inefficiency increases costs to all consumers, either through there own missed opportunities, or through higher purchased power costs due to missed transactions.

Pancaking adversely affects the type and location of new generation because of the difficulties associated with obtaining firm transmission rights across multiple transmission systems.

Pancaking inhibits the creation of an ancillary services market accessible to all loads. It continues to invest market power in ancillary services with the control area operator. The cost of this inefficiency is borne by all consumers.

Finally, eliminating current rate pancaking can be done without causing cost shifts through the adoption of Company Rates as described in the RTO West Stage 2 filing.

We have the opportunity to put in place a more rational system which would not distort either the long-term resource development market or the short-term power market, and would eliminate unnecessary transactional difficulties without harming parties vis-à-vis their current equity positions.

Aleka Scott PNGC Power August 26, 2003