NAVIGANT CONSULTING

20 Madison Ave. Ext.
Albany, NY 12203
518.464.2700 phone
518.456.6008 fax

Memorandum

To: **Charles King**

From: **David Clarke**

Date: **August 28, 2003**

Re: **LIPA Virtual Regional Dispatch (VRD) Comments**

Summary

LIPA continues to believe that VRD holds significant promise for allowing economic flows to occur on the Northport/Norwalk (1385) cable, either with or without market participants scheduling on the cable. LIPA notes that posted prices show much larger historic differences in real-time prices between Northport and Norwalk than other points discussed for benchmarking NYISO and ISO-NE prices, such as Roseton or NPX/Sandy Pond since ISO-NE adoption of LMP. Although LIPA would not rule out (and would actually prefer) a VRD implementation that solved for separate flows on controllable and free floating portions of the interface (1385 and upstate interties), LIPA also notes significant advantages in locating single VRD flows over controllable portions of the interface such as the Norhtport/Norwalk Cable (1385). These advantages include both significantly larger price differential and the ability, without extensive software modification, to predict to point of entrance or exit of VRD power.

Finally, LIPA raises concerns with several mechanisms proposed for allocating VRD revenues collected from differences in locational prices in selling and buying ISOs, takes exception to allocating congestion collected exclusively to selling area loads, cautions against defining the benchmarking busses in a way that carves congestion within an ISO into the VRD fund, and notes that grandfathered financial rights (TCCs) should be protected while creating cross border hedging instruments.

Finally, LIPA continues to support the development of VRD consistent with the goals of allowing economic VRD flows over 1385 and appropriately allocating congestion revenues to those transmission customers paying for the transmission investments that make VRD flows possible.

Comments

Why VRD Flows Should be Allowed on Controllable Parts of An Interface Even If MP Transactions Have Not Yet Been Accommodated

Concerns have been raised that allowing VRD flows on parts of an interface on which MP transactions are not allowed creates difficulties in identifying the party that is responsible for the revenue implications of differences between day-ahead and real-time flows. For example, it is possible to construct an example where a price-sensitive MP transaction would be selected if a single VRD flow was picked across an interface, but not selected if VRD could select flows over both the

controllable and free-floating part of an interface. One could even make the generous assumptions that the market participant had been scheduled for a transaction in the day-ahead market at prices that exactly matched those of the one VRD real-time solution, but not of the solution reflecting VRD flows on two parts of the interface. In other words, assume that allowing VRD flows on two parts of the interface caused price differences between day ahead and real time prices on the part of the interface over which MP transactions were scheduled in the DAM. First, the MP that scheduled the DAM transaction would receive either the same or higher revenues: if they met their DAM schedule they would receive revenues as calculated in the DAM and the schedule would change only if prices were favorable in RT, a condition under which they would receive more revenues. Second, VRD flows could cause loads not hedged day-ahead or generators changing schedule in real time to see different prices whether there were one or two VRD flows scheduled. Third, there would be an opportunity for virtual bidders to cause day-ahead prices to converge on those calculated in real-time, again whether one or two VRD flows were scheduled.

Why the Northport/Norwalk Tie Might be a Better Choice for a single VRD Scheduling than the Free-Floating Interties Connecting Upstate New York to New England

Although LIPA would not rule out (and would actually prefer) a VRD implementation that solved for separate flows on controllable and free floating portions of the interface (1385 and upstate interties), LIPA also notes significant advantages in locating single VRD flows over controllable portions of the interface and recommends that the ISOs explore the advantages of this implementation.

Although the total NYISO/ISO-NE interface rating has been reduced to roughly 600 MW (implying roughly a factor of three on upstate VRD flows above the 1385 limit of 200MW), between March 1 and July 31, 2003 average real-time price differentials between Northport and Norwalk have exceeded those at Sandy Pond (the NY external proxy bus in New England) and at Roseton (the NE External node in New York) by more than a factor of 10.

Table 1 - Average Real Time Prices, March 1 – July 31, 2003 ($/MWh)

	New York	New England	Difference
Roseton	50.8	51.6	0.8
NPX/Sandy Pond	49.5	50.3	0.8
Northport/Norwalk	65.6	54.4	-10.2

The value of up to 200 MW of VRD flows on 1385 appears to exceed the value of up to 600 MW of VRD flows upstate. With 200 MW of flow, a first order estimate of value over 1385 is $2000/hour or nearly $18M annually. With an average difference of $0.8/Mwh and 600 MW of potential VRD flow upstate, first order savings estimates total only $4.2M.

Importantly, scheduling over 1385 could improve the ISOs ability to accurately simulate the point of origin of VRD power, whereas over the upstate ties, the point of origin of the power could only be estimated or would require extensive software modifications to locate external area marginal generation. Arguably, the location of power sent over 1385 can be more accurately represented than that sent over free-floating interties. Thus, absent a VRD process that accommodates two VRD schedules over the interface, LIPA recommends that the ISOs carefully review the potential savings from the controllable and free-floating portions of the interface before finalizing the software design.

Cross Border Hedges (CBH)

It is also important that the ISOs pay attention to the manner in which Cross Border Hedges (CBH) are implemented. LIPA notes that a different allocation of congestion revenues might be appropriate within the context and rules of each ISO, takes exception to allocating these revenues exclusively to loads in the sending area, and raises some concerns about the location of busses used for benchmarking prices in respective ISOs.

Why a Mandatory Auction of CBHs Does Not Make Sense in Both ISOs: Why a Divided Share of CBHs Should be Allocated to Appropriate Parties in Each ISO, and Different Rules Applied in Each ISO

In ISO-NE there is a mandatory auction of all FTRs except for a selected set of 'exempted transactions', a sharing of all costs of Pool Transmission Facilities (PTF), and a sharing of auction revenue rights resulting from the sale of the FTRs. There is also a sharing of congestion rent surpluses and shortfalls and auction revenue shortfalls and surpluses.

In NYISO there is no mandatory auction of all TCCs , although there is a voluntary auction and a small class of TCCs that must be auctioned: "Existing Transmission Capacity for Native Load" (ETCNL). All transmission owners had been assigned TCCs on the basis of their historic investment in the transmission system, and a separate transmission service rate is charged for each transmission owner. There is an allocation of auction revenues to all those voluntarily releasing TCCs to be auctioned, and a separate allocation of congestion rent surpluses and shortfalls and auction revenue shortfalls and surpluses.

Although a mandatory auction of FTRs associated with the day-ahead market is consistent with ISO-NE rules, a mandatory auction would not be consistent with the NYISO rules for TCCs, nor would a result where all mandatory auction revenues were all allocating exclusively among ISO-NE loads (or even transmission customers). This suggests that a share of CBHs be allocated within each ISO to the appropriate parties, with separate rules applied to each. This is by far the easiest way to reconcile the disparate treatment of all aspects congestion revenue rights in the NYISO and ISO-NE markets.

Why Allocating these Congestion Revenues to Loads in the Sending Area is Not What FERC Had in Mind

One alternative discussed was to allocate these congestion revenues to loads in the selling area to prevent or offset increases in wholesale prices associated with the sale. In LMP, price divergence occurs when transmission between the selling and buying areas is congested. In these circumstances, the load in the buying area pays more for the imported power than generation in the selling area receives for supplying that power and the difference accrues to the holders of congestion revenue rights (TCCs, FTRs, etc.). In New York, these rights (or in limited instances a parallel auction revenue right) is allocated to transmission customers associated with the transmission owner of the constrained facility or those to whom they have released these rights. In New England, parallel auction revenue rights are shared among all transmission customers paying the shared PTF costs. FERC has already ruled that these auction revenues should offset the costs to all transmission customers, and not to the subset of those customers that are New England loads - on the principle that those paying for the transmission, the rights to which are being auctioned, should receive the auction revenues.

The same principle, that those that pay for the cost of the transmission should receive the revenues that that transmission creates, should be applied to CBH. Failure to allocate these revenues to those that are paying for the transmission that makes these revenues possible creates a class of transmission customers paying for transmission from which they do not benefit. For the costs of existing intertie facilities or investment in new intertie facilities, allocating the revenues to sending area loads creates a class of transmission customers paying for the facilities, customers who have no direct stake in either the net prices paid by sending or receiving area loads nor prices paid to generators - a disincentive for transmission customers as a class to make otherwise economic transmission investment.

Why Owners of Interconnecting Transmission (Or Their Assignees) Are the Appropriate Parties to whom to Allocate CBH

New intertie capacity can increase the volume of VRD flows that can take place, can increase the savings that VRD can create, and can increase the revenues collected in the CBH accounts as the product of flows and price differentials increase. Likewise, a reduction in intertie capability can reduce VRD efficacy. It is important, therefore, that those transmission customers paying for potential expansions in intertie capability experience an appropriate economic incentive for doing so. For these customers, the calculus is straightforward: ensuring that an investment in intertie capability that increases inter-ISO trade through VRD flows results in a net decrease in transmission rates. Allocating CBH revenues exclusively to loads in the sending area will assure that transmission customers as a class that might be making an investment in inter-tie capability that increases VRD capability will not see a net reduction in their transmission costs by making the investment. Allocating CBH to those making the investment (or paying for or maintaining existing capability) would assure that an opportunity to reduce their net transmission rates would occur whenever CBH revenues exceeded expansion costs, i.e whenever the expansion was cost effective.

Why It is Important to Use the Same Bus or Adjacent Busses As Calculated by NYISO and ISO-NE to Determine Price Divergence

Some have suggested creating CBHs using the external nodes (proxy busses) of each ISO, for example creating CBHs between Roseton and Sandy Pond. Although LIPA does support the notion of creating such CBHs between adjacent busses such as Norwalk and Northport; LIPA has concerns with using non-adjacent busses when creating VRD hedges. Using Roseton and Sandy Pond for example, will create revenue inadequacy by paying twice for congestion, both to CBH holders and to Holders of TCCs for the congestion on these facilities as calculated in New York, since there is both systematic real-time losses and congestion between Roseton and NPX (Sandy Pond) as calculated by New York and an obligation to pay this congestion as recognized in the DAM to TCC holders.

The hourly average real time (BME) prices as calculated (and posted) by NYISO between March 1, 2003 and July 31, 2003 are shown in Table 2, similar numbers as calculated by ISO-NE are shown in Table 3. While little congestion exists between these points as calculated by New England, on the average over this period, New York LMPs between Roseton and NPX (Sandy Pond) have differed by about $1.9/MWh, much of which (say $1/MWh) can be attributed to New York-only congestion between these points. Thus, by using Roseton as the point for calculating prices within New York for funding the CBH, nearly $1 in New York-only congestion might be allocated to the fund. Even with the lower interface capability of 600 MW, this represents $5 - $10 million in congestion and losses on the New York system not paid to those owning transmission rights in New York.

Table 2 -
Posted Average Hourly Real-Time Prices As Calculated by NYISO (March 1 – July 31, 2003, $/MWh)

	LMP	Congestion (1)	Losses
Roseton	50.8	-4.2	2.1
NPX (Sandy Pond)	49.5	-1.8	1.7
Difference	**1.9**	**2.4**	**0.6**

(1) By convention, a larger negative number indicates more congestion, although posted prices used appear to contain price inconsistencies.

Table 3 –
Posted Average Hourly Real-Time Prices As Calculated by ISO-NE (March 1 – July 31, 2003, $/MWh)

	LMP	Congestion	Losses
Roseton	51.6	-0.2	0.5
(NPX) Sandy Pond 345	50.3	-0.1	-0.9
Difference	**1.3**	**-0.1**	**1.4**

In New York, the congestion between these points as calculated in the DAM is obligated to holders of TCCs, with surpluses or deficiencies arising from differences in transmission capability in real time being allocated to transmission owners on a load ratio share basis. LIPA is concerned that by allocating congestion between Roseton and NPX to CHB, insufficient revenues would be collected to pay both TCC holders and those holding CHB or that a real-time deficit would accrue to those owning transmission in New York.

Hedging Day-Ahead Congestion Using CHB

The challenge in designing CHB is to honor existing and grandfathered day-ahead financial rights (TCCs/FTRs that may depend on transmission to the border), create a CBH, and prevent revenue inadequacy. To be most useful, those adding transmission inter-tie capability should be able to hedge the difference in day-ahead ISO prices for any transaction that is scheduled day-ahead, which actually flows in real time. Thus, CHBs based on a multi-settlement model should be considered, perhaps funding CHB day-ahead based on full VRD flow (at day-ahead prices) determined after both ISOs close their day-ahead markets. This would allow those owning CHBs to hedge day-ahead transactions up to the full capability of the inter-ties, providing that actual flows matched day-ahead schedules. A revenue offset against the CHB, equivalent to that portion of the full capability that was not used for MP and VRD flows in real time, might be charged, assuring that CHB did not create a revenue inadequacy situation. A multi-party CHB settlement system should be explored.

Why the CBHs Should be a Separable Pair of Uni-Directional Congestion Options

With day-ahead capability and price and real time flow differentials and prices determining CHB funding, the fund should collect congestion rents whenever there is a flow consistent with the congestion gradient. In other words, congestion revenues should be collected for flows in either direction. Based on price differentials between ISOs at adjacent points, existing TCC/FTR auction software would not need to be modified since the CHB would not capture congestion revenues arising from congestion price differentials within either ISO.