Catalogue Testing and Performance

A. Background

The CTR model depends on a number of assumptions regarding netting, diversity and non-tradability. This paper begins the process of "stress-testing" of these assumptions by reviewing a series of examples.

B. Working Assumptions for CTR Model

The CTR model relies on the following assumptions:

1. The CTR model for honoring existing rights will allow the system to continue to benefit from the netting and diversity that exists in today's system.
2. Defining CTRs as non-tradable instruments means that no third party will be able to benefit from a contract customer's CTR.
3. A contract customer cannot make use of the CTR to achieve a congestion hedge for a dispatch that is different from the one it uses today.

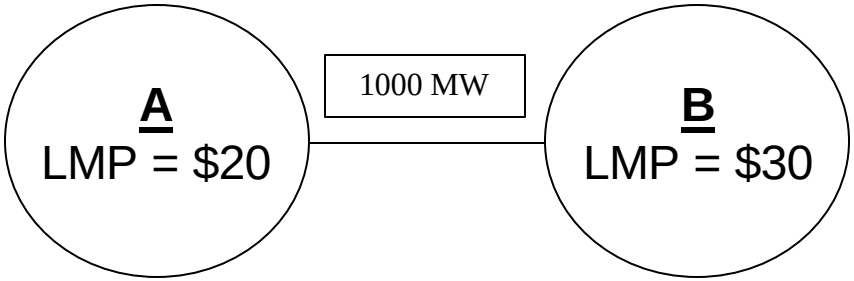
C. Assumptions for Examples in this paper

4. A CTR-holder can schedule injections and withdrawals with either its original PTO and or with RTO West, or both.
5. A market participant can buy and sell an unlimited amount of energy at the LMP at each location on the grid. [Mechanisms could include bilateral market, redispatch market, netting against a schedule that would otherwise pay congestion, or others.]
6. There are no effective administrative safeguards against the behavior described for each example. [This may be truer for some contracts than for others. To the extent safeguards are available, the effects described would be mitigated].

D. Summary of the issues identified by these examples

- If the working assumptions for these examples hold, there are a variety of ways CTR-holders might be able to capture additional value from their CTRs beyond what they receive today:
    - They could capture the value of "netting and diversity" for themselves.
    - They could trade or rent their CTRs through buy-sell deals, perhaps including those for network service.
    - They could use their CTRs to obtain a hedge against a dispatch that is outside the catalogue.
- The consequence from this would be a revenue leak in the congestion management system, leading to cost shifts. There are two places this problem could land:
    - On the PTO, in the form of a revenue shortfall due to greater-than-anticipated congestion payments to RTO West for honoring CTRs, or greater-than-expected amount of redispatch required in catalogue sufficiency test.
    - On RTO West, in the form of a revenue shortfall due to greater-than-anticipated congestion credits granted to converted CTR-holders.

Example 1: Capturing the Value of Netting



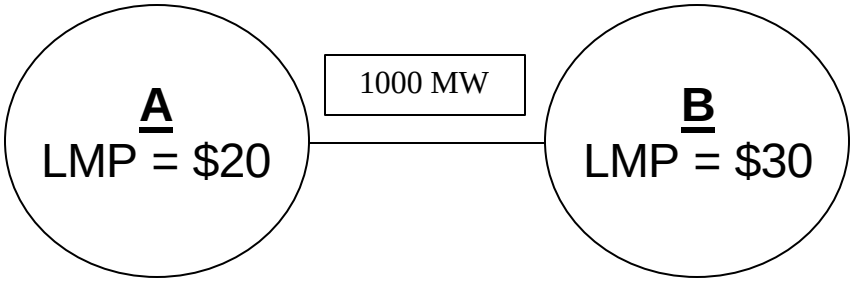
Details

- Company X owns 1200 MW of A B CTRs.
- Company Y owns 200 MW of B A CTRs from same PTO.
- PTO counts on 200 MW of netting to avoid congestion.
- Company X schedules 1200 MW from A to B with PTO, no congestion bill.
- Company Y chooses not to schedule B to A transaction with PTO. Sells 200 MW at B, receiving $6000, buys 200 MW at A, paying $4000.
- Company Y receives a net payment of $2000.

Implications

- Company Y has captured the value of netting for itself, creating a revenue loss.
- If Company X has converted to RTO service, RTO West bears the revenue loss. If Company X has not converted, the PTO bears the revenue loss.
- Note that the revenue loss for honoring X's CTRs is caused by Y's actions.
- Does not require fraud or gaming.

Example 2: Buy-Sell Deals to Defeat Non-Tradability



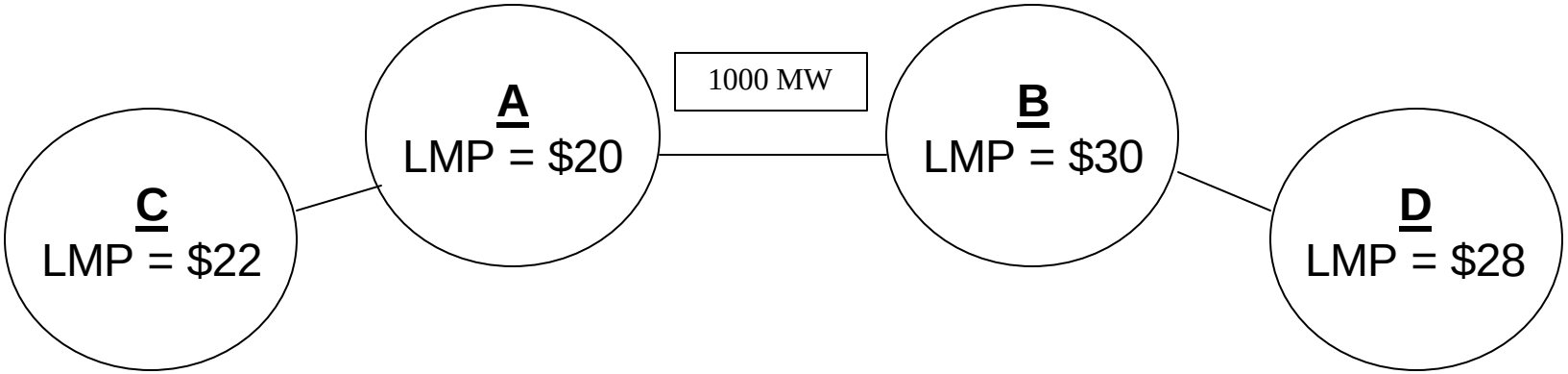
Details

- Company X owns 1000 MW of A B CTRs.
- Assume it only needs 800 MW in this hour.
- Assume Company Y has 200 MW of generation at A, 200 MW of load at B, no rights.
- Company Y sells 200 MW of power to Company X at A, buys it back at B.
- Company X schedules 1000 MW A to B with PTO, no congestion bill.
- Company Y "rents" extra 200 MW of CTRs from Company X, willlling to pay up to $2000.
- Total value reaped by X: up to $10,000. Actual congestion caused by X: $8,000.

Implications

- Company X has effectively "traded" its CTR to Company X. This may create a revenue loss, depending on whether the PTO is able to capture the value of the right today (e.g., by selling non-firm).
- If Company X has converted to RTO service, RTO West bears the revenue loss. If Company X has not converted, the PTO bears the revenue loss.

Example 3: Using CTR as Hedge Against any Dispatch



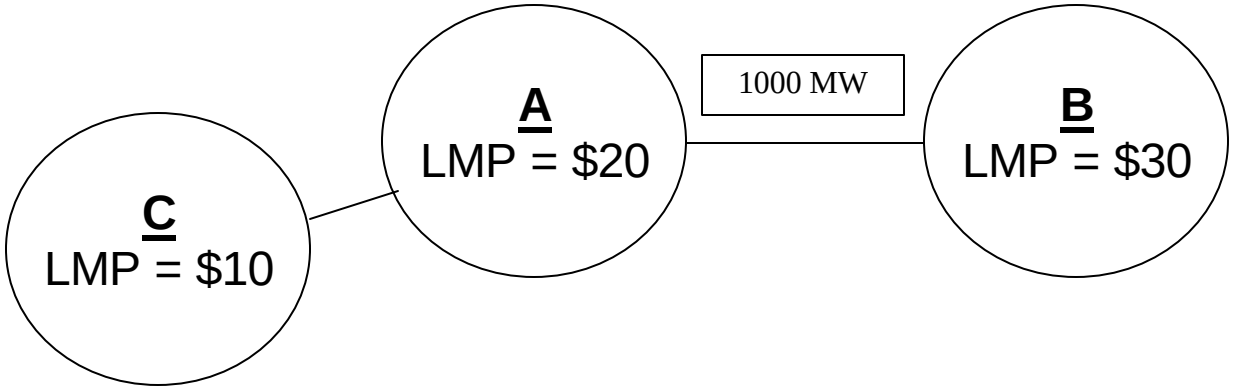
Details

- Company X owns 1000 MW of A B CTRs from PTO.
- Wants to use generation at C to serve load at D, has no rights.
- Sells 1000 MW at C, receives $22,000. Buys 1000 MW at A, pays $20,000. Net: +$2,000.
- Schedules 1000 MW A to B with PTO, no congestion bill.
- Sells 1000 MW at B, receives $30,000. Buys 1000 MW at D, pays $28,000. Net: +$2,000.
- Total value reaped: $10,000 ($4,000 plus $6,000 in congestion credits).
- Actual congestion caused: $6,000.

Implications

- X has been able to capture full $10,000 value of CTR for A to B schedule, even though CTR is supposed to have a value of zero for schedules outside catalogue, and actual congestion caused is only $6,000.

Example 4: Capturing Maximum Value from Network Service



Details

- Company X owns 1000 MW of NT CTRs, with injections at A and C, withdrawal at B
- Wants to serve 1000 MW of load at B with resources at A.
- Sells 1000 MW at A, receives $20,000. Buys 1000 MW at C, pays $10,000. Net: $10,000.
- Schedules 1000 MW from C to B with PTO, no congestion bill.
- Total value reaped by X: $20,000. Actual congestion caused: $10,000.
- Variation: Assume Company Y has 1000 MW of generation and load at C. X serves Y's load at C, Y serves X's load at B, they split the $20,000.

Implications

- Network customers may have ability to choose the most valuable injection points in a given hour. This would create a revenue hole to the extent PTO was counting on diversity among network customers to make existing rights fit.
- Some contracts may have safeguards against this, e.g., can check against generation meter data.