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Accounting for Capability Period Implementation of Demand Curves and Cost of Capital Assumptions

ICAP Working Group

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Insight in Economics™

2007 Approach

- NERA developed Demand Curve reference values on an annual basis
- NYISO used annual reference values and implemented seasonal adjustment
- Seasonal adjustment is a function of aggregate locational summer to winter capability and summer/winter capability of new peaking unit

Issues with 2007 approach

- In practice, the Demand Curve is applied by capability period
- 2007 approach essentially assumed one Demand Curve would apply all year
- More explicit modeling of summer and winter curves, and where on the curve the price will be set, can only improve accuracy

Methodology

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- Incorporate NYISO summer/winter reference point formula into spreadsheet model
- Populate model with 2007 data on aggregate seasonal capacity by location and new unit seasonal capability ratio
- Simulate results using parameters used in 2007 to develop 2008/2009 demand curves
- As reference point in MW is the same summer and winter, the market clears lower in the winter due to the added capability, and the model simulates the range of clearing prices given the excess capacity and variability in excess assumption

There is more than one driver

- A higher aggregate seasonal ratio should increase impact
- This effect can be mitigated by unit capacity that is much higher in the winter and enables greater sales volume
- Impact is lowest in LI as a result of a relatively low aggregate ratio (1.056) and the fact that the Frame 7 can sell almost 20% more capacity in the winter

Preliminary comparative results applied to 2008/2009 demand curve reference points (all else equal)

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2007 Method

- NYCA
  - S $ 8.19/KW
  - W $ 4.80/KW
- NYC
  - S $ 13.36/KW
  - W $ 6.88/KW

Revised Seasonal Method

- NYCA
  - S $ 9.33/KW
  - W $ 5.47/KW
- NYC
  - S $ 14.61/KW
  - W $ 7.53/KW

Additional model information

- Initial model changes will be posted to NYISO website when validated
- Model changes subject to ongoing validation
- Intention is to implement model with revised seasonal capability data

Merchant Generator Cost of Debt

	Assumption A	Assumption B
Credit Rating	BBB	BB
Debt Cost	6.50%	7.25%

As of April 15, 2010, yield on BBB index is observed to be 6.28%, while the yield on BB index is 7.04%. A small adjustment upwards has been made to reflect the fact that the merchant generator would likely be on the lower credit quality spectrum within the rating range.

Debt to capital ratio for base case assumption is 50%.

Merchant Generator Cost of Equity

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Capital Asset Pricing Model Used to Estimate Cost of Equity

	Assumption A	Assumption B	Assumption A 2007 Beta	Assumption B 2007 Beta
Risk Free Rate	4.72%	3.86%	4.72%	3.86%
Market Risk Premium	6.47%	6.47%	6.47%	6.47%
Equity Beta	1.32	1.32	1.00	1.00
Cost of Equity	13.26%	12.40%	11.19%	10.33%

The 4.72% risk-free rate reflects the yield on 30-year treasury bonds as of April 15, 2010, while the 3.86% is the yield on 10-year treasury bonds as of the same day.

For the equity Beta, two assumptions are considered. The Beta of 1.32 reflects the average beta reported in Value Line for AES, NRG and RRI (April 2010). The alternative assumption of 1.0 is based on the study performed in 2007.

Merchant Generator Cost of Capital Recap

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- Range of results depends on specific assumptions chosen
- Debt cost in range of 6.50 – 7.25 %
- Equity cost in range of 10.3 to 13.3%
- Recommendation is to use 7.0/12.0 with a 50/50 capital structure