

## **The PSEG Companies' Comments on The Brattle Group's Triennial Review of RPM**

The PSEG Companies appreciate the opportunity to provide feedback on The Brattle Group's review of the three key parameters in the PJM Variable Resource Requirement (VRR) Curve, specifically, the Cost of New Entry (CONE), Energy & Ancillary Services Offset methodology (E&AS Offset); and the VRR Curve shape. We have undertaken a preliminary review of The Brattle Group's recommendations and request that PJM consider the following when finalizing its recommendations of these parameters. Naturally, as we work through the stakeholder process, we may have additional thoughts.

### **I. CONE Review**

- The PSEG Companies do not agree with The Brattle Group's recommendations to use the average of the NET CONES of the Combined Cycle Gas Turbine (CC) and Simple Cycle Combustion Turbine (CT) reference technologies instead of just the CT. The Brattle Group contends that merchants are building CCs, not CTs and its recommended approach avoids a full switch to the CC. The PSEG Companies believe that the CT is a better alternative given that the value of the Net CONE should be based on the least cost source of "pure" capacity available to meet adequacy requirements in PJM. Selection of the CT unit as the reference unit for setting the height of the demand curve provides the appropriate price signal to incentivize the least cost action in the marketplace to assure incremental amounts of additional reliability. The fact that CC technology is currently being built is fully consistent with this view as the selection of CC technology, at this time, is largely driven by the perception of available energy market revenues. However, the capacity market should be designed to provide the most efficient outcomes in all types of market conditions and the selection of the CT as the reference unit will best achieve this goal.
- The Brattle Group's recommendation of 8% for the after-tax weighted average cost of capital (ATWACC) does not appear to fully reflect the risks associated with merchant development. Our preliminary review raises a number of questions. First, we question whether the ATWACC is appropriately based on a truly representative group of merchant developers. The calculation of the ATWACC in the Brattle Report examines a small set of publically traded companies. In fact, however, a number of the "pure" merchant projects in PJM have been undertaken by smaller, privately owned firms. These should also be evaluated. Second, it does not appear that The Brattle Group obtained sufficient "real world" input regarding lending practices and how companies actually employ their corporate cost of funds in evaluating specific projects. Data from banks and other institutions regarding debt cost and capital structure would be needed to thoroughly inform this process. Third, we do not believe that The Brattle Group analysis considers all the types and levels of risk

premiums that merchant developers actually consider. The mechanical approach The Brattle Group uses for their study cannot capture all of these risk-related factors. The PSEG Companies will continue to review this aspect of The Brattle Group's analysis and therefore intend to provide more detailed recommendations regarding an appropriate level and/or methodology for the ATWACC later in the stakeholder process.

- The PSEG Companies disagree with The Brattle Group's recommendation to transition to level-real CONE estimates. The Brattle Group's recommendation ignores the risks associated with net revenues in the out years of the term of a project's financial analysis as well as the fact that lenders will not evaluate their return on investment based on a level-real valuation since it under values the project in the short-term. Thus, the PSEG Companies believe that it is appropriate to use the nominal levelized financial modeling method to calculate CONE. In its 2011 RPM review, The Brattle Group also suggested transitioning from the nominal levelized method to a real levelized approach. However, PJM witness, Dr. Sotkiewicz countered this recommendation by explaining that "there are ample reasons to expect that a developer might be wary of the risks implicit in a real levelized model. In other words, a developer legitimately might decline to invest if it is at risk of not receiving the annual revenue increases on which the nominal levelized model depends." Dr. Sotkiewicz also noted that project developers that are risk averse may prefer to receive a greater share of cost recovery in the early years of the project's life given that forecasts about future market conditions and policies affecting the industry 5, 10, 15 and 20 years forward grow ever more uncertain. This risk aversion could ultimately result in a reluctance to build new generation when needed, thereby impacting resource adequacy and reliability. The PSEG Companies agree with Dr. Sotkiewicz that the CONE level used to set the level of the VRR Curve should not be allowed to deter development by developers that apply more conservative financial screens in their analyses. Accordingly, we believe that the nominal levelized modeling approach should be retained.

## II. E&AS Offset Methodology Review

- The PSEG Companies disagree with The Brattle Group's recommendation to utilize a forward looking E&AS calculation instead of a purely historic. We believe that the use of historic data is more reliable and subject to fewer modeling assumptions than the forwarding looking EA&S. Further, we believe there will be too much subjectivity in the determining what data should be used in the forward looking approach and in determining exactly how that data should be used. Moreover, most forward trading in PJM takes place at the western hub and is not a good indicator of the prices for the rest of the RTO. In fact, there is very limited liquidity and price

discovery for most of the LDAs in PJM for three or four years into the future. Thus, the prices included in the forward looking model would be assumed based on the basis differential between the western hub and other locations, which requires consideration of many variables such as hourly shapes of energy prices, daily shapes of fuel prices and the joint variability of fuel and energy. Alternatively, the historic approach would not need to rely on such assumptions since it includes all of the required data on price shapes and the joint variability of fuel and energy. Finally, The Brattle Group appears to assume that developers are looking at forward prices, however, as discussed above, forward data is less reliability than historic. Therefore, we believe that many developers also rely on historical prices as significant inputs in their review of development options.

- The PSEG Companies support The Brattle Group’s recommendation to impose the parent LDA Net CONE value as the minimum NET Cone value for nested LDAs. It does not make sense to have lower VRR Curves in areas that are likely to have the most need for additional in-zone resources.

### III. VRR Curve Review

- The PSEG Companies support the shape of the curve as proposed by The Brattle Group. In particular, we believe that it makes sense to have a steeper curve when there is a greater need for new resources to enter the market.
- The Brattle Group suggests that PJM “may consider right shifting the curve 1-2% as insurance against stress scenarios.” The PSEG Companies believe that the VRR Curve should be right-shifted at least 2% to further safeguard reliability as The Brattle Group states. In fact, the PSEG Companies submit that the proposed curve would fail to satisfy the 1-in-10 standard. Under the NERC standard, the PJM system should be planned to be operated at least at the 1-in-10 standard for all years rather than an “average reliability across years at 1-in-10 LOLE for the system.” Averaging the achievement of the standard over multiple years does not confer the same reliability benefits to consumers as meeting the standard in all years. Further, the suggestion that the PJM could operate at levels below the 1-in-10 standard for multiple planning years does not comport with PJM’s transmission planning process which is premised on meeting the 1-in-10 LOLE standard at all times. Accordingly, if the curve is not shifted to the right, transmission projects can be expected to be triggered under the RTEP process *before* the price signaling associated with achievement of the “average” 1-in-10 resource adequacy is ever allowed to occur. Indeed, the interaction of the PJM transmission planning process was apparently not considered by The Brattle Group in its modeling but, if the capacity price impact of operating the PJM system below the 1-in-10 standard is removed, the modeling

results suggest that the resultant capacity market revenues will be insufficient to incentivize adequate new entry.