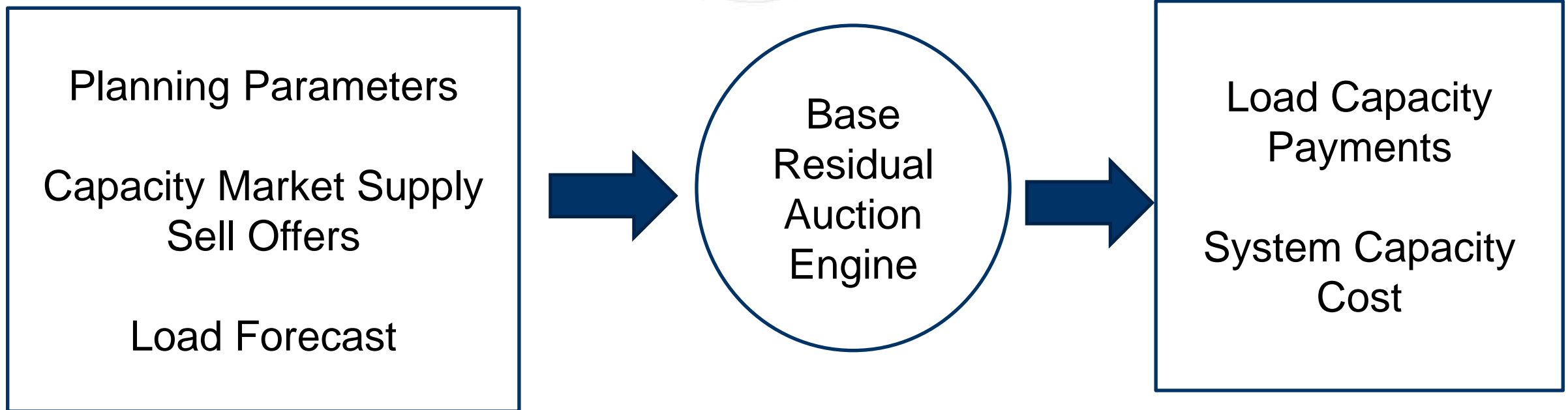


PJM Market Efficiency Capacity Benefits Calculation

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- Market Efficiency Projects may address:
 - Energy market constraints (drivers)
 - Capacity market constraints (drivers)
- Market Efficiency Projects may generate:
 - Energy market benefits
 - Capacity market benefits (RPM Benefits)
- Total Benefits = Energy Benefits + RPM Benefits



- Regional Projects: 50% Change in System Capacity Cost + 50% Change in Load Capacity Payment
- Lower Voltage Projects: 100% change in Load Capacity Payment

* Only zones with decrease in net load payments

- Change in Total System Capacity Cost
 - Calculated for the PJM Region
- Change in Load Capacity Payment
 - Calculated for each transmission zone
 - Only zones that show a LMP decrease in capacity payment will be considered

Item	Capacity Cost Benefits	Load Capacity Payment Benefits
Granularity	PJM region	Benefitting Transmission Zones
Simulated years	Three years (RTEP, RTEP+3, RTEP+6)	
Trend	Interpolated between the simulated years & Extrapolated after the last simulated years	
Benefits horizon	Calculated for 15 years starting with the project in-service date (Net Present Value)	

- Planning parameters applicable for capacity market driver cannot be calculated beyond RTEP year
- Capacity market benefits are calculated assuming most recent capacity market offers
- Reproducing CETL calculations are difficult, as PJM does not post the list of LDA constraints behind the first binding constraints
- Model inputs not available: market sensitive bids are not shared by PJM
- BRA software is not available to participants
- PJM and stakeholders believe that alternative methods should be investigated for this analysis to be done in a more transparent fashion.



PJM's proposal to decouple energy and the capacity benefits

- Based on the experience of the recent Windows PJM sees a need to decouple the energy and the capacity proposals and analyses
 - Capacity and energy constraints apply to different years (RPM year for capacity and RTEP year for energy constraints)
 - Due to the volatility of the capacity constraints, is not appropriate to consider that the binding element for the RPM year will be binding in the capacity market for the RTEP year
 - When projects provide capacity benefits, the additional energy benefits are very small

- Analyzing the binding constraints after each BRA
- Procurement process with a 30 day window for Targeted Capacity ME projects
- If the solution is a simple upgrade, PJM will assign it to the corresponding T.O. for implementation.
- If the solution is more comprehensive requiring a greenfield, then the capacity constraint will be put in a competitive window.

Appendix A - Glossary

- **Change in Total System Capacity Cost**
 - Calculated as the difference between the sum of the megawatts that are estimated to be cleared in the Base Residual Auction under PJM's Reliability Pricing Model capacity construct times the prices that are estimated to be contained in the offers for each such cleared megawatt (times the number of days in the study year) without and with the economic-based enhancement or expansion.
- **Change in Load Capacity Payment**
 - Calculated as the sum of the estimated zonal load megawatts in each PJM transmission zone times the estimated Final Zonal Capacity Prices (payments paid by load in each transmission zone) for capacity under the Reliability Pricing Model construct (times the number of days in the study year) minus the value of Capacity Transfer Rights for each PJM transmission zone without and with the economic-based enhancement or expansion.
 - Only PJM transmission zones that show a decrease will be considered in determining the Change in Load Capacity Payment.