Considerations To Better Align Default Service Programs With PJM Capacity Market

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Executive Summary

Following deregulation, states increasingly turned to competitive markets to match supply and demand needs, send transparent investment signals, maintain resource adequacy, and encourage cost effective innovation. Restructured jurisdictions began procuring energy, capacity and ancillary services from wholesale competitive markets.

Within PJM's footprint, restructured states typically bundle such services into a single product for procurement through competitive auctions held at the state level. Generally, state procurements align with PJM's capacity market to purchase capacity at the PJM wholesale price, while hedging future energy and ancillary service costs.

Currently, these states rely heavily, if not exclusively, on PJM's capacity market to fulfill their resource adequacy needs. The capacity market, also known as the Base Residual Auction, was initially intended to be a truly residual market for states to procure for additional unfilled capacity needs, not to serve as the primary market to satisfy such needs.

To strengthen the effectiveness of state default service programs at both the state and wholesale level, PJM offers the states the following items for consideration:

1	Continue use of competitive procurements to secure bundled full-service products.
2	Continue staggering multiple procurements for a single delivery year to utilize blended rates for customers.
3	Diversify procurement strategies by contracting at least 25% of default service load obligations through long-term contracting (*i.e.*, 5+ years).
4	De-harmonize reliance between near-term competitive default service auctions and PJM Base Residual Auction schedules to promote effective capacity price hedging.
5	Establish a state-level reliability procurement mechanism that allows states to proactively address emerging resource adequacy needs.

Background

Regulated vs. Deregulated Jurisdictions

For the electricity industry in the United States, retail electric service utilities operate under two primary regulatory frameworks:

- "vertically integrated" (or regulated) and
- "restructured" (or "deregulated").

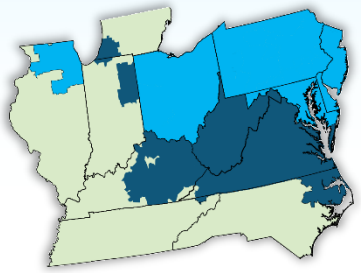
In 1978, Congress passed Public Utility Regulatory Policies Act (PURPA), introducing independent power producers (IPPs). IPPs own generation (i.e., "supply") but do not own regional transmission or local distribution infrastructure, maintaining the electric utility as the sole "provider" of transmission and distribution (i.e., "delivery"). This first introduced the idea of market-based competition in the electricity industry. Eventually, due to a variety of industry factors, the concept of deregulating the electric power supply to remove the utilities' ownership over electric power generation began to emerge as an alternative approach in the late 1990s.

Vertically integrated jurisdictions allow for single ownership for all electric infrastructure – generation, transmission and distribution – needed to generate and deliver electricity to end-use customers. State commissions regulate investment of electric infrastructure and ensure retail rates align with the cost of providing such services. Under the traditional vertically integrated model, as demand for electricity boomed, small electric utility companies held the right to serve all customers located within their service territory. Utilities would invest in electric infrastructure to ensure delivery to end-use customers as new demand showed up. To avoid excessive infrastructure build-out, the industry evolved to allow one sole provider of electricity in any given location (electric utilities are natural monopolies).[1]

Demand

70% **Restructured Retail Supply Market**

30% **Traditionally Regulated Retail Supply Market**



Restructured states rely on competitive markets and, therefore, price signals from the markets to drive new investment in electric generation. Deregulation efforts in many states have resulted in increased reliance on wholesale markets, facilitated by regional transmission organizations (RTOs), for setting the cost of electricity; compared to vertically integrated jurisdictions that ensure customer rates reflect the regulated cost of service. Customers participate in competitive markets at the retail level (state regulated). In retail markets, wholesale suppliers of electric services sell end-use products to retail customers. Wholesale suppliers participate in wholesale markets (regulated by the Federal Energy Regulatory Commission), to purchase electric services available to resale at the retail level. PJM facilitates competitive wholesale energy, capacity and ancillary service markets. Within PJM, there are seven restructured jurisdictions – District of Columbia, Delaware, Illinois, Maryland, New Jersey, Ohio and

[1] *See generally*, "The regulatory compact is an agreement codified by statute and case law that is unique to the utility space and calls for: the utility to provide safe, reliable and reasonably priced service; the commission to provide the utility with a reasonable opportunity to recover its costs and earn a return similar to that of other investments that have similar risk characteristics; the customer to pay the approved rates; and, the investor to supply the capital necessary to maintain or expand the utility system." RRA Regulatory Focus, The Rate Case Process: A Conduit to Enlightenment, p. 1 (July 3, 2018).

Pennsylvania – collectively, these states represent approximately 70% of PJM's total load,[2] highlighting the significance of competitive markets within the PJM region.

Overview of the PJM Capacity Market

The PJM capacity market is designed to procure adequate supply to meet demand for a future delivery year. In PJM, the capacity market structure is a combination of a Base Residual Auction (BRA)* for a future delivery year and the Fixed Resource Requirement (FRR) Alternative. The longer-term price signals are intended to incent longer-term bilateral contracts, as an effective means of hedging the reliability charges assessed under RPM.

The FRR Alternative provides a Load Serving Entity with the option to submit an FRR Capacity Plan and meet a fixed capacity resource requirement through its own procurement mechanism. Together, these two procurement methods satisfy PJM's reliability requirement for capacity commitments for all states participating in the capacity market.

**Typically, the Base Residual Auction occurs three years prior to the start of a delivery year and is balanced with Incremental Auctions held to true-up actual supply and demand needs as the delivery year approaches.*

The goal is to provide:

- a transparent, forward-looking price signal
- that aligns capacity pricing with system reliability requirements and
- provides information to all market participants far enough in advance for actionable response to the information.

A party that procures (self-supplies) capacity resources outside of the BRA must secure commitments for any given delivery year prior to the relevant BRA. As the BRA is designed to allow all resources that have not secured purchase agreements and load that has not procured generation – the residual supply and demand after independent procurements – to be matched and traded in a transparent manner. The concept was introduced in 2005 when the Reliability Pricing Model was established, explicitly enabling load serving entities to self-supply to hedge their reliability charges under RPM and rely on the market to procure any remaining capacity.

However, in PJM, nearly all of the restructured states that are in PJM rely on the BRA to supply their capacity needs. The market is not residual in practice; some states allow their default service provider to rely on the capacity market for nearly 100% of its' capacity needs. This is not the intent of the marketplace; the BRA is designed to be a residual market for short-term, unfulfilled capacity needs.

Retail Choice and Default Service Obligation in Deregulated Jurisdictions

Generally, deregulated states restructured their electric utility regulatory models in the late 1990s aimed to foster competition as a method to place downward pressure on prices through the use of a competitive market dynamic. With deregulation came the opportunity for end-use customers to shop for electric service plans that best fit their needs, known as *retail choice*. There are two main groups of customer classes: residential and small commercial customers, and large commercial and industrial customers. Larger customers historically have had the resources (time, experts

[2] Based on data from Monitoring Analytics, "PJM Load by State – 2024" published July 16, 2025.

and financial stability) to evaluate and enter into long-term contracts. A mechanism has been created as a safeguard for smaller customers who through evaluation have affirmatively determined not to shop, or for those customers who may not have been presented with the opportunity or lack the knowledge to enter into a contract to shop.

As traditional utilities became electric distribution companies (EDCs) and divested their generation assets, they gained a new legal obligation to provide default service to supply power to non-shopping customers. Specifically, "default service" supplies electricity to those retail customers within the EDC's franchise service territory: (a) who are non-shoppers or (b) whose alternative retail energy supplier became unable to service the retail customer.

To fulfill this role, EDCs comply with state-regulated procurement programs to secure energy, capacity and ancillary services (sometimes additional services) for the retail customer, as the EDCs no longer own generation. Typically, the state utility regulator has oversight of default service programs. Further, over time, many state regulators have gradually increased dependency over generation pricing (if any authority remained) and resource adequacy on the capacity market in particular.

Each state has unique and individualized programs and terminology referring to default service, often defined in statute or regulation.

PJM States Default Service Programs:

DE, DC, MD	Standard Offer Service
IL	Procurement Plan
NJ	Basic Generation Service
OH	Standard Service Offer
PA	Provider of Last Resort

Analysis of Default Service Programs

All default service programs are uniquely tailored to individual states and shaped by a combination of statutory mandates, regulatory provisions and oversight by state public utility commissions. These programs are executed by electric distribution companies, which bear the operational responsibility for delivering electricity to their customers. Given the layered regulatory frameworks and implementation requirements, no two state programs are alike. Nevertheless, among the seven PJM jurisdictions that administer default service programs, notable similarities exist in their core design features and overarching implementation objectives.

Design Feature	Most Common Across States
Applicable Load	100% of state retail load that: 1. Does not choose an alternative supplier 2. Have a supplier that does not service the customer
Procurement Term	1-, 2-, or 3-year contracts
Procurement Methods	1. Competitive auction 2. Request for proposal
Supply Product Type	Energy, capacity, ancillary services
Contract Type	1. Fixed rate, load following ($/MWh) 2. Fixed rate, block ($/MWh)

Design Components of Default Service Programs

1. Applicable Load

Applicable load refers to the group of customers that a default service provider must procure generation for and be able to serve that load at any given time. Most default service providers are obligated to procure on behalf of 100% of state retail load that does not choose an alternative supplier and retail load that has a supplier that does not service the customer. In most states, the default service providers are legally required to procure generation sufficient to serve up to 100% of this load at all times, ensuring continuous and reliable service.

2. Supply Product Type

Supply product type refers to the configuration of services that is being procured by the default service provider. Product types can be bundles (multiple services offered as one product at one total price) or unbundled (a separate procurement for different services needed). Most default service programs use an all-inclusive bundled supply product, meaning any service needed to supply electricity reliably is bundled into one product and traded at one cost. Most supply product types include energy, capacity and ancillary services. Depending on state-specific mandates, additional services like environmental attributes needed to comply with state laws, or transmission costs are also bundled into supply products.

3. Procurement Term

Procurement term is the duration of time that a contract remains in effect. Leading up to a delivery year, states may conduct multiple procurement rounds, with timing and frequency influencing contract duration. Most default service programs contract for one to three years, often staggering the timing of procurement prior to a delivery year. Some states have tried to align the procurement term with PJM's BRA, mainly after it occurs, allowing suppliers to factor in the known cost of capacity before finalizing default service offer bids.

4. Procurement Method

There are three main procurement methods used to contract default service suppliers. The most common in restructured states is the use of competitive auction. Competitive auctions can be structured differently depending on the jurisdiction but typically involve multiple bidding rounds where supply and demand are matched in blocks or tranches of preset megawatt values until all demand needs are fulfilled. Competitive auctions can be statewide, where multiple default service providers participate as the demand in one single auction, or individually designed by each of the default service providers. The second is procurement through a request for proposal (RFP), where a default service provider defines contract parameters and solicits bids to fulfill specific supply needs. The third approach, utilized least often, is long-term (more than three years) bilateral contracting. Long-term bilateral contracting is a process in which generators with available supply and default service providers negotiate contract terms and lock-in supply costs for a longer period. While some states have the authority to utilize this option, it is not currently used in default service programs.

Likely Goals in Default Service Implementation

Cost Minimization

States with the goal of cost minimization aim to ensure that consumers receive electric service at the lowest possible price. In practice, cost minimization is often defined as the lowest cost, on average, across a long-term planning horizon while ensuring reliability. Under this approach, states can leverage the benefit of competitive markets to drive down costs when there is excess supply. Alternatively, cost minimization may also be interpreted as the lowest possible cost for supply every year. If pursued, this short-term focus could undermine long-term reliability by failing to support investment in new generation or discouraging existing generation from continuing to operate. Based on our analysis, no default service programs explicitly adopt short-term cost minimization as the primary goal.

Cost Stability

States with the goal of cost stability aim to shield end-use customers from significant price volatility by promoting predictable and consistent electric rates. Competitive energy markets can be volatile, even within a single 24-hour period, due to generator availability, weather conditions, infrastructure outages and fluctuating demand. To mitigate such volatility, default service programs are designed with tools to attempt to mitigate some of the volatility that may exist in PJM competitive markets. One tool is blended rates, as described above, where the price a customer sees on a bill is the result of multiple different procurement periods being blended together. Default service programs also use full requirement bundled products to attempt to ensure that volatility associated with one product is diluted or offset by other products within the supply bid.

Considerations for Default Service Programs

PJM's mission is clear, which is to maintain reliability for the roughly 67 million consumers it serves. Through its subject matter expertise, use of regional scale and by leveraging competition, PJM seeks to fulfill its mission as cost-effectively as possible. The below is an attempt to utilize our markets expertise at the wholesale level to be of assistance to the states during this period of high pricing and changing market conditions in the PJM capacity market. PJM certainly cannot place itself in the shoes of the states who are currently attempting to simultaneously balance reliability, affordability and its state's particular policy requirements.

Procurement Strategy

One procurement strategy to consider for an effective default service program is diversifying procurement mechanisms, through a combination of both long-term (greater than three years) and short-term (one to three years) procurement to balance price stability, market adaptability and resource adequacy. The mixed-term approach may help mitigate volatility more than single-approach procurement methods to allow for continued responsiveness to changing market conditions.

	Procurement Strategy
Considerations for States	**Long-Term Contracting:** Meet 25% of load obligation through 5- to 10-year contracting.
	Short-Term Contracting: Meet 25% of load obligation through 3-year contracting, 25% through 2-year contracting, 25% through 1-year contracting.
	Harmonization With PJM BRA: Meet at least 25% of load obligation prior to PJM BRA; establish hedging mechanism to allow independence from PJM auction schedules.

This diversified approach would allow states to utilize procurement mechanisms that complement the original design and intent of PJM's capacity market as a residual market – not as the sole procurement mechanism for the capacity component of default service supply products. By incorporating long-term capacity procurements in advance of PJM BRAs, states can enhance flexibility and reduce reliance on centralized market outcomes. The use of both long-term and short-term contracting will strengthen default service providers' ability to secure cost-effective and reliable supply.

Long-Term Contracting

States should consider integrating long-term contracting into default service program procurement strategies by requiring that a certain percentage (for example, 25%) of the load obligation be met through long-term contracts (for example, 5- or 10-year product commitments). Default service programs would be able to use any procurement mechanism to attract long-term offers, but PJM anticipates that the most common would be RFPs and bilateral contracting agreements. PJM believes that states will benefit from enhanced price stability by reducing exposure of a larger portion of costs to wholesale market volatility. Some portion of capacity contracts should be committed under contracts greater than three-years because the capacity construct is directly related to long-term reliability requirements of the system, when entities do not contract until the short-term (less than 3-years forward) it increases the likelihood of out of market, Reliability Must Run contracts, and other short-term crisis that can distort investment signals.[3] Additionally, long-term contracting empowers the states to reassert a role in preserving reliability within their state.

The current PJM-organized wholesale electricity markets are designed as short-term, spot-markets. The load served in both regulated and deregulated states participate in PJM's spot capacity market to fulfill capacity obligations and signal the need for future supply. There are many benefits to a central, transparent procurement mechanism such as PJM wholesale markets, however, the main risk of total reliance is the volatility of prices in spot markets. If there is a desire from states to continue to rely on PJM to procure capacity on behalf of load in their jurisdictions and re-introduce long-term capacity contracting, PJM can work with the states on how to fulfil this facilitation role.

Currently none of the seven PJM states that have restructured utilize long-term contracting in default service programs. Currently, the only process in place for PJM to procure long-term capacity on behalf of customers is through PJM's Reliability Backstop.[4] Notably, some states already have the authority to implement this today.

Short-Term Contracting

Considerations for continued use of short-term contracting in the procurement strategy for default service programs are to procure only a percentage (for example, 25% or one-third of the load remaining after long-term contracting in each round of procurement) of short-term forward contracts across multiple procurement intervals to complement long-term commitments.

Diversifying procurement methods will dampen price volatility and promote blended rates – to varying extent – in default service programs, many of which already use this strategy. This approach enhances long-term predictability while retaining the short-term flexibility to adapt to evolving market conditions, striking a practical balance between affordability and responsiveness. Each restructured state already implements some form of this staggered procurement mechanism, which appears to be successful in ensuring cost stability and use of blended rates, while allowing for reaction to near-term changes in competitive market conditions.

[3] PJM Interconnection, LLC Reliability Pricing Model Filing, FERC Docket Nos. ER05-141000 and EL05-148-000, August 31, 2005.

[4] PJM Open Access Transmission Tariff Attachment DD, Section 16: Reliability Backstop.

Harmonization With the Base Residual Auction

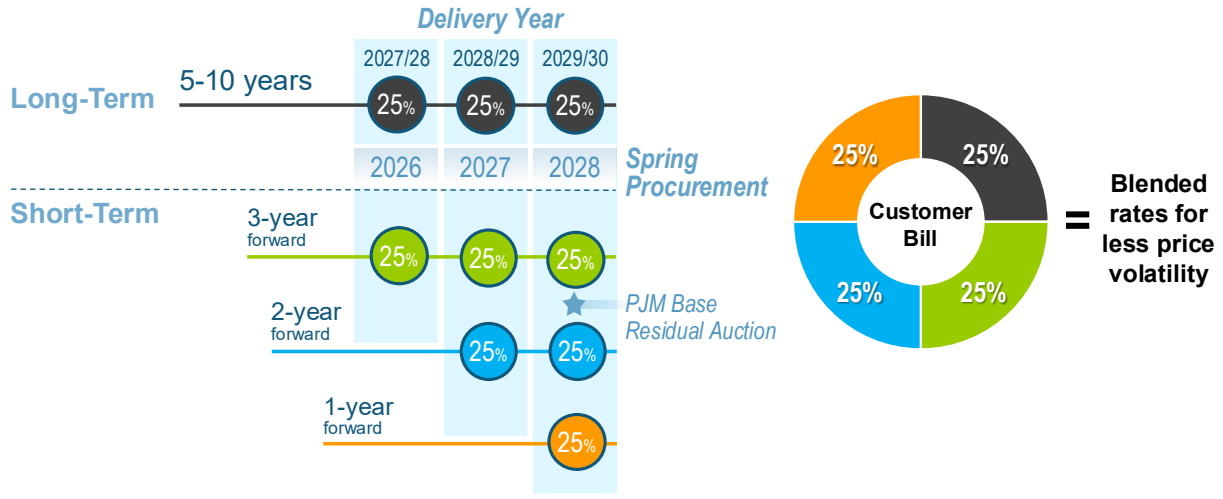
Default service programs are typically aligned with PJM BRAs; PJM suggests states reduce dependence on PJM capacity market as the sole procurement mechanism for capacity. Aligning default service procurement schedules solely after BRAs results in capacity costs being automatic pass-through costs for consumers, leaving no opportunity to hedge against capacity market volatility. States should consider securing a portion of default service obligation in advance of the BRA, such as through long-term contracting or short-term procurements happening prior to PJM BRAs.

Currently, none of PJM's seven restructured states procure capacity outside of the capacity market.

In response to recent PJM capacity auction schedule delays, some states have been using capacity proxy prices to maintain consistency of default service auctions. While PJM has no position on this approach in response to recent changes in the BRA's schedule, use of proxy prices long term does not provide meaningful protection against market volatility. Accordingly, should states consider de-synchronizing default service procurements with the BRA, states should consider proactive procurements rather than proxy prices with true-up mechanisms, as implemented today.

Hedging Strategy

Figure 1. Diversified Procurement Approach: Ensure Wholesale Market Hedging and Price Stability in Default Service Programs.



Cost Minimization

Cost minimization goals, however defined by each individual state, are best achieved by use of competitive auctions and competitive procurement mechanisms for procuring default service supply – as we see implemented today. Competitive procurements allow for access to a pool of diverse suppliers that will submit competitive bids, resulting in competitive offers and driving down costs to reflect market conditions. For both long-term and short-term contracts, this cost minimization typically is achieved through responses to competitive bidding in RFP procurements and competitive auctions. Currently, all seven restructured states in PJM utilize some form of a competitive procurement strategy. PJM supports the continued use of competitive procurement mechanisms to achieve cost minimization goals.

Cost Stability

Cost stability for retail customers is best achieved through continued use of bundled full-service requirements and rate blending. Full-service requirements help maintain price stability by allowing fluctuations in the cost of each service component to either be diluted or offset in the total cost end-use customers see. For example, bundled products could result in little to no cost changes in a given year even if energy prices increase because capacity and ancillary service costs may have decreased over the duration of that same contract.

Additionally, rate blending helps the end-use customer transition more gradually to increasing costs over time. Many states already use rate blending by hosting several (three, sometimes six) default service auctions each to procure some percentage of the same load obligation for a single delivery year. When the price is implemented in that delivery year, customers pay an average of all relevant rates on their bill rather than the price impact resulting from a single auction. Currently all seven PJM restructured states require bundled products and utilize some level of blended rates.

Reliability Assurance and Incentives for New Entry

Reliability Procurement Mechanism

States should consider establishing a predefined reliability procurement mechanism for ensuring long-term reliability. The process for using such procurement mechanism should be clearly defined and already approved by the state utility regulator for limited use to serve default service obligation, when appropriate. The reliability procurement mechanism would be the ability for the state public utility commission or an individual default service provider to solicit and enter into a long-term power purchase agreement for new generation based on certain parameters. The parameters could be based on triggers from specific conditions, such as:

- Competitive market conditions, e.g., pricing
- Anticipated load forecast changes
- Notification from PJM of a to-be-defined energy emergency
- Use of PJM's Reliability Backstop[5]
- After a certain number of megawatt retirements within a given time period within the state

PJM is not providing recommendations on triggers for such mechanisms at this time; states should feel empowered to consider any of the above, any other trigger or any combination of triggers the state desires.

This predefined mechanism, when triggered, would allow the state to procure for reliability if generators are not responding to PJM's market signals, for whatever reason. PJM anticipates several benefits to the states, including assurance of long-term reliability, proactive avoidance of extreme wholesale market conditions, prioritization and preference in resource investment aligned with state policy, and potential cost savings. Currently none of the PJM restructured states have a predefined mechanism in place; however, some states do have the authority to establish such processes under current law.

[5] PJM Open Access Transmission Tariff Attachment DD, Section 16: Reliability Backstop.

Considerations for States

Based on PJM's analysis of existing state default service programs and the identification of opportunities for improvement, PJM offers the following for state consideration:

1	Continue use of competitive procurements to secure bundled full-service products.
2	Continue staggering multiple procurements for a single delivery year to utilize blended rates for customers.
3	Diversify procurement strategies by contracting at least 25% of default service load obligations through long-term contracting (*i.e.*, 5+ years).
4	De-harmonize reliance between near-term competitive default service auctions and PJM Base Residual Auction schedules to promote effective capacity price hedging.
5	Establish a state-level reliability procurement mechanism that allows states to proactively address emerging resource adequacy needs.

Each state has a unique default service program, reflecting its statutory framework and regulatory implementation, tailored to meet individual state and default service provider needs. While these considerations are not tailored to specific state programs, PJM is committed to supporting states in navigating opportunities to better retail markets that exist alongside PJM wholesale markets.