RECA Generation Procurement Model Study:
Discussion Paper

Prepared for the Maryland Public Service Commission

April 2026

Contents

Introduction

Pursuant to the requirement established in the Public Utilities – Generating Stations – Generation and Siting Act ("Renewable Energy Certainty Act" or "RECA"), the Maryland Public Service Commission (the "Commission") is conducting a study to evaluate the advantages and disadvantages of different generation procurement models to enable Maryland to achieve its resource adequacy objectives. Power Advisory was engaged by the Commission to conduct this generation procurement models study.

To engender stakeholder input Power Advisory has developed this discussion paper reviewing different procurement models and highlighting aspects that could lead to differences in their effective cost to customers, underlying risk profiles and ability to address Maryland's resource adequacy requirements. Where appropriate, Power Advisory references comments filed in Administrative Docket PC66, highlighting some of the procurement model pros and cons identified by stakeholders.

The procurement models reviewed in this discussion paper are not exhaustive, and stakeholders are invited to propose alternative procurement models or variants of the models described herein. We identify pros and cons of the different models in an effort to generate feedback and promote alignment regarding the relative performance of the models.

Feedback on these models and additional information provided by stakeholders will inform assumptions that will be employed in multi-criteria decision analysis of procurement models that will weight the performance of each model relative to specific criteria including their relative costs and risks, incentives for efficient construction, contribution to resource adequacy, and alignment with Maryland's policy objectives and statutory requirements.

Power Advisory is requesting that stakeholders submit written comments regarding these different generation procurement models and the evaluation criteria to be used in their relative performance in Administrative Docket PC66.

Summary of Generation Procurement Models

Summary of Generation Procurement Models (1/2)

The following procurement models are evaluated in this discussion paper.

1. Business as Usual (BAU) where generation is procured through PJM's Base Residual Auction (BRA), which currently is the primary market mechanism to incent new entry.

2. Utility-owned generation where an electric utility builds the generation under traditional cost-of-service regulation with oversight from the Commission.

3. Partnership where an independent power producer (IPP) or developer/constructor constructs a generation project for an electric utility and transfers the project to the electric utility upon competition (aka Build-Transfer or "BT"), which recovers the cost of the project under traditional cost-of-service regulation.

4. Power purchase agreement (PPA) where an electric utility purchases the output from the project under a long-term PPA.

5. Tolling agreement where an offtaker (electric utility?) pays a power plant or battery energy storage system owner a fee (the toll) to convert fuel into electricity or manage the operation of the battery under a long-term tolling agreement.

6. Competitive Dialogue where the procuring entity engages in a structured dialogue with prequalified developers prior to submission of final bids, enabling project specifications and contractual terms to be refined in light of market conditions.

7. Index payment to the generator for renewable energy certificates (RECs) or GCCs based on the generator's residual revenue requirement when accounting for revenues from the energy and capacity markets.

Summary of Generation Procurement Models (2/2)

8. PJM Reliability Backstop following the model being developed by PJM with stakeholder input.

9. Generation capacity credit purchases where electricity suppliers purchase Generation Capacity Credits (GCCs) in proportion to the supplier's load obligations.

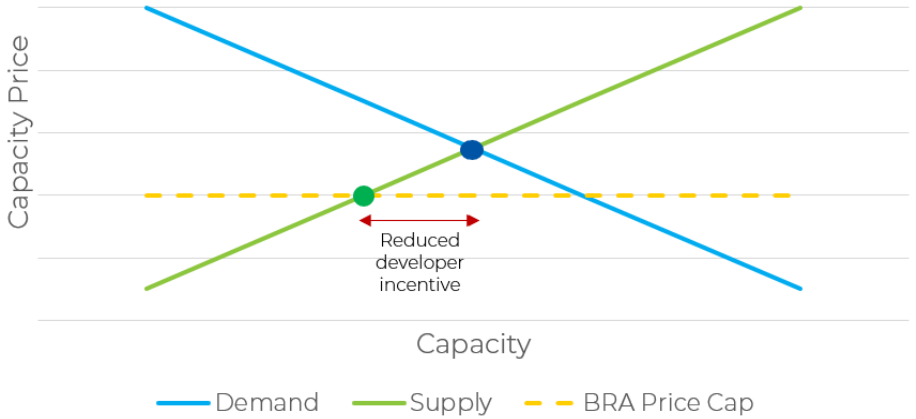
Generation Procurement Models

PJM Base Residual Auction: Description

- Under the current market structure PJM's Base Residual Auction (BRA) is used to send a price signal that is designed to induce new entry to ensure supply adequacy. In the BRA PJM seeks to procure a target capacity reserve level in a least-cost manner recognizing locational reliability constraints. Suppliers are able to lock in the auction clearing price in the BRA three years prior for a one-year term (the Delivery Year). The limited term of the pricing commitment subjects suppliers to considerable market risks, regarding future BRA pricing, which can limit market entry.

- PJM has implemented a price collar (cap and floor) to limit volatility in the BRA. The price cap, which has been hit in the last two auctions, dulls the price signal for developers, reducing the incentive for the development of additional generation. Constellation recommended price formation reforms to ensure efficient investment decisions suggesting that "rather than relying on capacity price signals alone, new reserve products could highlight the need for quick ramping units. Similarly, PJM could enact shortage pricing reforms…. to reflect the value of lost load and encourage better-informed investment decisions."[1]

- The costs of the BRA auction are passed through to customers in retail rates. For customers taking service under Standard Offer Service (SOS) where the Zonal Net Load Price for capacity is unknown at the time of the SOS auction, suppliers use a proxy price, and the final costs are reconciled later, allowing for the pass-through of actual BRA costs to ratepayers



[1] PC66, No. 46, pg. 4-5.

PJM Base Residual Auction: Pros/Cons

Pros

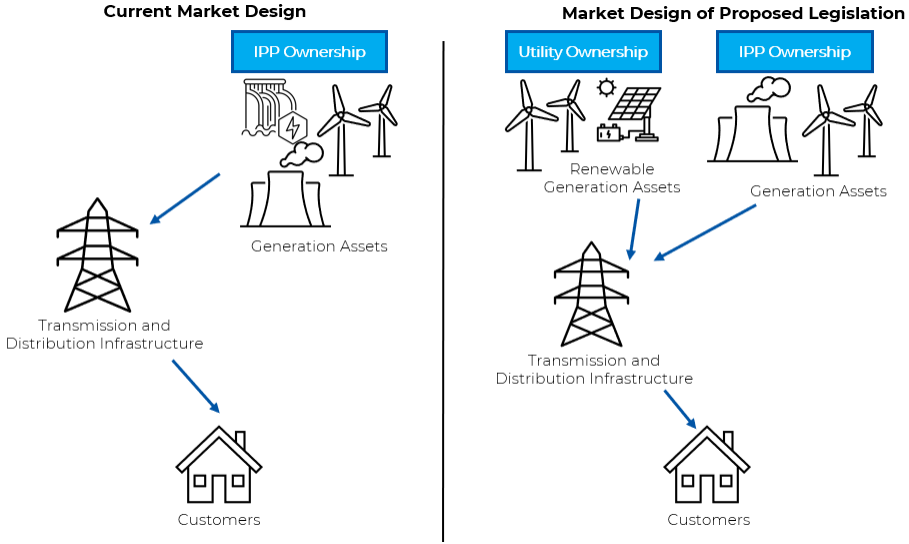
- Customers pay the market price for capacity annually and aren't committed to long-term contracts that could become uneconomic.
- Auction process seeks to promote economic efficiency sending a price signal to promote new entry and induce higher cost, inefficient generation to retire, rewarding suppliers that offer the lowest cost capacity resources.

Cons

- Recent increases in capacity prices set in the BRA have raised concerns with the volatility of the resulting price signals. These higher prices are in contrast to prices in prior auctions that were insufficient to induce new entry.
    - Interventions in the market by policymakers indicates that they are reluctant to accept the rate impacts caused by the high capacity prices needed to incent new entry.
    - Rapid load growth driven largely by datacenters have raised concerns that annual capacity markets are not the right mechanism to meet this exogenous growth factor.
- Inability to provide long-term price signals coupled with a slow interconnection process has resulted in capacity shortfalls that are increasing supply adequacy concerns.

Utility-Owned Generation: Description

- Utility-owned generation (UOG) represents a return to the electricity sector market structure that existed before Maryland restructured its electricity market in 1999.[1] Under this market structure, utilities are vertically integrated owning generation, transmission and distribution and having responsibility for supplying customers. A move to competitive wholesale electricity markets was pursued to promote efficiencies with the operation and ownership of electricity generation facilities by shifting the financial risk associated with building and operating these generating facilities power plants away from Maryland's utility customers and on to IPPs.
- Commission Staff noted that "PJM market participation revenues should flow entirely to ratepayers in the absence of an acceptable performance incentive mechanism ("PIM") that transfers risk from ratepayers to the utility operator in exchange for an opportunity for the utility to increase revenue with exceptional performance."[2]
    - Power Advisory understands that the Maryland legislature recently considered legislation that would allow investor-owned electric utilities in the state to build or acquire new renewable generation and recover costs via electric rates, subject to approval by the Commission. In effect, electric utilities would directly compete with IPPs for the sale of generation.



[1] In 1999 the Maryland General Assembly passed the Electric Customer Choice and Competition Act, restructuring its electricity sector to shield customers from the risks of bad generation investment decisions and to promote greater market efficiency.

[2] PC66, No. 42, pg. 16.

Utility-Owned Generation: Pros

- Advocates of UOG assert that it can complement, not replace competitive generation and by so doing enhance the overall level of competition to the benefit of customers.
    - The Joint Maryland Exelon Utilities (Baltimore Gas and Electric Company, Potomac Electric Power Company, and Delmarva Power & Light Company) note that PJM capacity prices have increased approximately 300% from historical averages and imply that UOG can reduce these prices by adding an additional source of competition in the PJM capacity market. [1]

- Advocates of UOG assert that utilities typically have lower costs of capital, which can translate to lower generation costs, particularly given that they are unable to capitalize on generation shortages by increasing prices and their profits are limited to their allowed return on equity.

- Furthermore, utilities can be directed to make generation investments "to meet long-term anticipated demand in the State for standard offer service and other electricity supply…subject to appropriate cost recovery"[2]. These generation investments would presumably address concerns with adequacy of supply and this regulatory oversight can help to ensure that the investment occurs.
    - Assurances that IPP generation investments will occur are limited to the financial incentives and contractual provisions in their contracts. Experience indicates that these performance incentives can be insufficient to ensure performance, particularly during periods of significant market dislocations (e.g., inflationary environment after the Ukrainian War). Under these market conditions, regulators can employ regulatory oversight to seek to determine appropriate generation project cost increases that allow projects to continue to advance toward commercial operation.

[1] PC66, No. 39, pg. 5.

[2] Md. Code Ann., Public Utilities § 7-510(c)(6)

Utility-Owned Generation: Cons (1/3)

- In comments submitted in response to the Commission's request for Comments on RECA Generation Procurement Models Study, Advanced Energy United, Chesapeake Solar and Storage Association, and the Solar Energy Industries Association (collectively the "Clean Energy Parties") opposed UOG because "there is no way to ensure effective and fair oversight that would prevent vertical market power ("VMP") and information asymmetry." [1] The Clean Energy Parties assert that broad utility ownership will:
    - Increase costs to customers because: (1) "Expanding utility ownership would shift risks currently borne by private developers to ratepayers. Whereas third-party developers assume financial loss when projects face permitting challenges, are subject to increased costs or delays, or are cancelled for other reasons, utilities pass the risk of unrecovered expenses to ratepayers."[2] (2) "Private developers and IPPs raise and deploy private capital to build resources whose profitability is reliant upon cost-effective management and performance over time. By contrast, regulated utilities deploy capital to build resources and their return is based solely upon the cost of the resource." [3]

[1] PC66, No. 36, pg. 2.
[2] Constellation argued that "The study should determine the true cost of utility investments, incorporating historical ROE and actual performance delivering large-scale infrastructure projects, since regulated utilities shift the financial risk of projects onto captive ratepayers. In Maryland, for instance, a BG&E transmission project associated with the Brandon Shores deactivation saw costs more than double, rising from $739 million to $1.5 billion." PC66, No. 46, pg. 2.
[3] PC66, No. 36, pg. 3.

Utility-Owned Generation: Cons (2/3)

- **Slow Progress Toward Energy Goals** because there is: (1)"no demonstrated timeline advantage… Project timelines for new generation facilities follow substantially similar sequences for utilities and private developers, including project planning, regulatory and permitting approvals, environmental reviews, equipment procurement, and construction."[1] (2) "risk of chilling private investment…. First, since utility projects pass the risk of cost overruns to ratepayers, utilities can assume highly optimistic economics when bidding for sites or evaluating interconnection costs, thereby undercutting private sector opportunities. Second, regulatory and market uncertainty associated with utility participation in generation and storage markets increases perceived risk among developers and financiers, largely out of concern that the utilities will use their competitive advantage to crowd out third parties". [2]
- **Distort the Market** by creating "structural competitive disadvantages for private projects and market price distortions that undermine the effective functioning of Maryland's competitive electricity markets" and "significant structural advantages unavailable to third parties, including privileged access to distribution interconnection information, processes, and control that third parties cannot access."[3] In essence, utility generation investments will face a lower overall risk profile given that they don't face the same development, construction or market risks as IPPs.

[1] Constellation also questioned whether utilities are better positioned than competitive developers to overcome challenges that are contributing to longer project development and construction cycles including (preferential access to long lead-time components and accelerated permitting schedules). PC66, No. 46, pg. 4.
[2] PC66, No. 36, pg. 4.
[3] PC66, No. 36, pg. 4-5

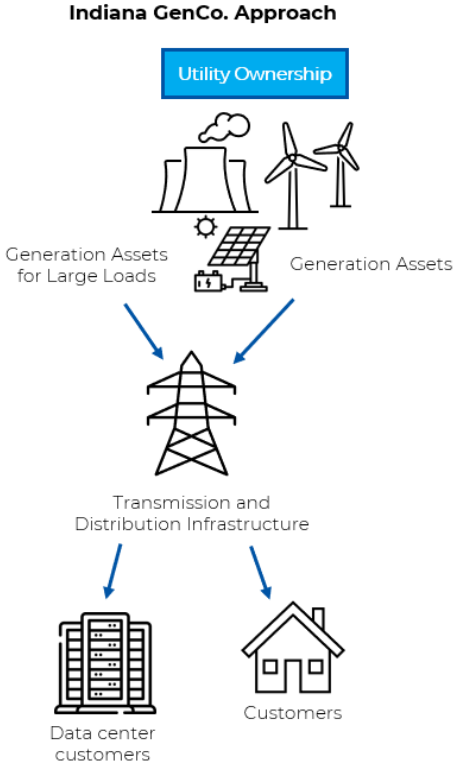
Utility-Owned Generation: Cons (3/3)

- Ensuring that utilities are developing the most cost-effective generation requires regulatory oversight (e.g., an integrated resource planning (IRP) process) and even if the IRP identifies the least cost resource, customers are generally at risk if market conditions change and the resource is no longer least-cost.

- As the Clean Energy Parties suggest, ensuring appropriate regulatory oversight over utility investment decisions is challenging. This typically involves employing the "prudent investment test", which assesses utility decision-making and investments based on what could be reasonably known at the time that the investment decision was made and whether based on this information the investment was "prudent". Power Advisory notes that in many jurisdictions policymakers elected to move to competitive markets because this regulatory oversight framework wasn't viewed as offering customers sufficient protections from bad investment decisions that represented an economic burden to them.
    - Under this traditional regulatory construct electric utilities are still able to recover the costs of an investment even if the investment is not economic as long as they are able to demonstrate that they made reasonable investment decisions (i.e., ignoring sunk costs as economic theory suggests) throughout the construction process.
    - Under the competitive market framework, investors only recover and earn a return on their investment if it is economic, i.e., offers costs lower than competing resources and based on these lower costs and favorable operating performance yields returns.

UOG Competitive Affiliate for Large Loads: Description

- A variant on the UOG model is the Indiana GenCo. This approach is being employed in Indiana by NiSource Inc. where NIPSCO Generation LLC was approved by the Indiana Utility Regulatory Commission (IURC) in late 2025 to develop own, build, and manage new, dedicated power generation to supply data centers. NIPSCO proposed and the IURC approved protections to ensure that the costs and risks of this generation is properly ringfenced to limit costs and risks to utility customers. This alternative is less appropriate for Maryland's restructured market because there are not major constraints on competitive utility affiliates from developing generation.



UOG Competitive Affiliate for Large Loads: Pros/Cons

Pros

- Limiting UOG to large loads would appear to limit the impact on competitive generators, by clearly defining the UOG market opportunity and ensuring a market for competitive generators.

Cons

- There may be some adverse impacts on the competitive generation market from providing a role for UOG.
- While there can be accounting and administrative safeguards to protect adverse impacts on ratepayers, if the competitive generation affiliate loses money it could affect the finances and credit rating of the parent increasing costs to ratepayers.
- One challenge with respect to overseeing the contractual arrangements between the competitive affiliate and the generator is that these commercial relationships are typically confidential limiting stakeholder oversight.

Build-Transfer (BT): Description (1/2)

- A partnership where an independent power producer (IPP) or project developer/constructor constructs a generation project for an electric utility (or other ultimate asset owner) and transfers the project to the electric utility upon completion.
    - The BT description above assumes that the generation project will be transferred to an electric utility. It could be transferred to another type of entity that was to serve as the generation asset owner.
        - An example of this is in New Mexico with the Renewable Energy Transmission Authority which was established through statue in 2007 to plan, finance, develop and acquire high voltage transmission lines and storage projects. Power Advisory notes that the operation and management of generation typically requires more administrative and management oversight than transmission facilities, suggesting that this example is not directly transferable.
        - In New York State, the New York Power Authority (NYPA) is a state-owned utility that has recently taken on increased responsibility for renewable energy project development and has been acquiring projects through the BT model. NYPA was created to own and operate large hydroelectric generation projects in New York State and therefore, was in a position to take on this increased responsibility without undue expansion of the scope of its activities and responsibilities.

Build-Transfer (BT): Description (2/2)

- A competitive procurement process can be used to select the generation project developer and constructor and to seek to secure the best possible commercial deal for the transfer of the generation project. Under this commercial structure the project developer/constructor typically bears the risk associated with delivering the project at the offered capacity rate for a fixed cost with specified performance characteristics (e.g., energy conversion efficiencies, unit availability). The electric utility then bears the risk associated with the future performance of the generation asset.

Build-Transfer (BT): Pros/Cons

Pros

- Stakeholders have noted that there are risks associated with utility ownership as outlined in the UOG discussion (pages 12-13) . Some of these are mitigated by BT, e.g., ratepayer risks associated with cost overruns.

Cons

- With future performance of the generation project based on the design, equipment specification, and project construction, carefully evaluating these aspects of the project is important and can be difficult. The ultimate project owner needs to thoroughly assess the project design and equipment offered and oversee the construction and acceptance testing to seek to ensure that the project is able to operate as specified.

- Stakeholders also commented that because project developers/constructors are not able to offset project development or construction risks with higher market revenues that this could lead to premiums in the offered BT pricing. We believe that competitive discipline from the procurement process, the developer/constructor's experience, and various construction contracting strategies will help to mitigate these premiums.

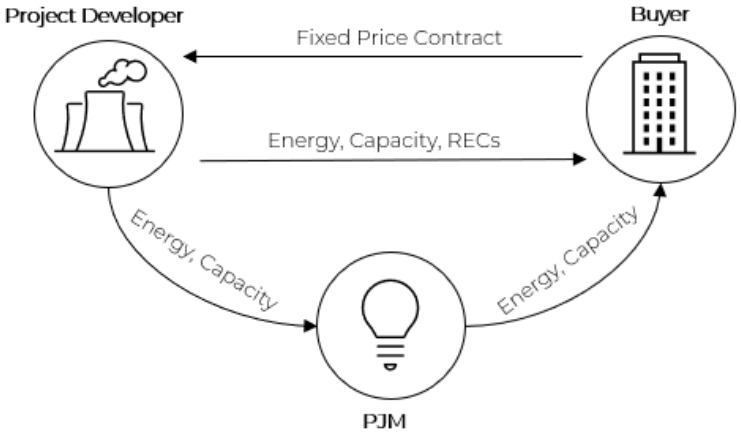
- There are a number of issues associated with how the generation project fits within the utility's Standard Offer supply obligations. One option would be to require Standard Offer suppliers to provide the residual supply requirements beyond those supplied by the generation project and would require them to manage the uncertainty regarding the operation of the asset. (Office of People's Counsel (OPC) comments reviewed alternatives for addressing this issues.[1] This is likely to result in additional premiums in the Standard Offer supply pricing. Alternatively, Generation Capacity Credits (GCCs) could be used to recover the residual cost of the project. See page 31 for a discussion of Generation Capacity Credits.

[1] PC66, No. 41, pg. 11.

Power Purchase Agreement (PPA): Description (1/2)

- A contract structure where a customer (perhaps an electric utility) purchases the output from an electricity generation project under a long-term PPA. The PPA specifies key terms and conditions including: (1) the price (fixed, escalating with a fixed (e.g., 2% per year) escalator or indexed (e.g., tied to CPI or other cost driver)); (2) the contract tenor (length); (3) volume commitments (e.g., pay as produced or fixed volume); (4) commercial operation date, with penalties for delays; and (5) performance obligations (e.g., penalties for failure to be available or deliver quantity offered). PPA terms and conditions vary depending on the specific needs of the buyer or seller and PPAs often are 100+ pages. PPAs are commonly used to purchase the output from renewable energy resources (e.g., wind and solar projects).

- Here as well a competitive procurement process can be used to determine which party is awarded a PPA. A critical aspect of such a competitive procurement process is specifying the desired generation technologies or if the procurement doesn't prescribe specific generation technologies how different technologies will be evaluated in the evaluation process.



Power Purchase Agreement (PPA): Description (2/2)

- PPAs allocate project development, construction and operating risks between the buyer (often an electric utility) and seller (generator/IPP). PPAs generally provide that the seller bears the majority of development, construction and operating risks. However, there can be contractual relief for delays in securing permits, interconnection approvals, and construction of interconnection facilities and contract pricing provisions that share changes in construction cost among the parties through various price indices (e.g., CPI or other publicly available, transparent indices).

- The volumes offered under renewable energy contracts vary depending on the technology. With variable output resources (e.g., wind and solar) typically offering minimum volumes that recognize the inherent uncertainty in the underlying renewable resource.

- Commission Staff also recommended that the study consider shaped PPAs where the seller agrees to deliver a set quantity or profile of energy to the buyer on a daily, monthly or seasonal basis to help the buyer manage "shape risk", i.e., the difference between when energy is produced and when the buyer needs the delivery of energy.[1]
    - If PPAs are determined to be a preferred alternative, Power Advisory will delve deeper into critical aspects of the PPA structure.

- Contract tenors (durations) of 15 to 20 years, are typically needed for IPPs to secure long-term financing, with longer contract tenors generally yielding lower contract prices.

- PPAs are typically used to support the development of generation technologies that are more focused on the provision of energy.

[1] PC66, No. 42, pg. 17.

Power Purchase Agreement (PPA): Pros/Cons

A report prepared by Grid Strategies on behalf of the Sierra Club recommended that the Commission "exercise its pre-existing authority to direct Maryland's distribution utilities to enter into contracts to purchase capacity from solar and solar+storage resources that are solicited through a Request for Proposals ("RFP") process"[1] using PPAs. Grid Strategies recommended a bundled procurement administered by utilities including energy, RECs and capacity.

Pros

- PPAs provide IPPs with a reasonable measure of revenue certainty that can support long-term financing under favorable terms and as a result can yield an attractive contract price for the specific electricity resource. Conversely, depending on the specific pricing provisions in the contract, PPAs typically provide a significant degree of price certainty that allows the buyer to avoid market price uncertainty and volatility.

- IPPs have extensive experience with PPAs and as a result are comfortable with the commercial structure.

Cons

- Disadvantages of PPAs are that they generally require long-term commitments so that the seller can obtain reasonable financing terms. Such a long-term commitment can cause a PPA to no longer be economic if there is a large unanticipated decline in market prices. In addition, with the PPAs representing a fixed obligation some parties claim that large numbers of PPAs that represent a significant portion of a power supply portfolio can be treated by debt rating agencies as a debt-like equivalent.

- Need to determine the type of desired generating resources that will be offered PPAs, with the selection of the wrong resource increasing costs/risks to customers.

[1] PC66, No. 37, pg. 1.

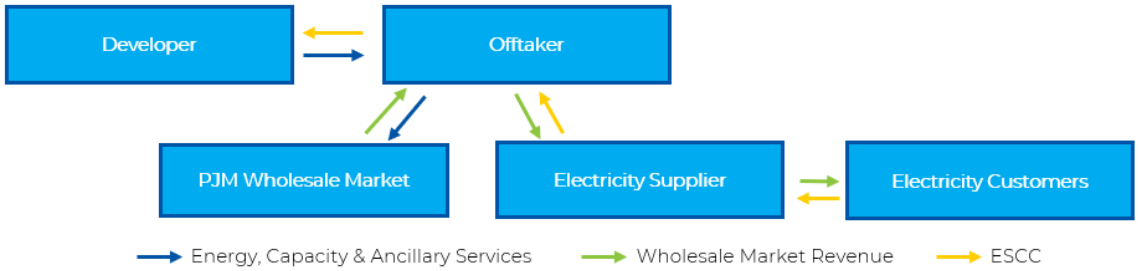
Full Tolling Agreement: Description

- A contract structure where an offtaker pays a generating unit or battery energy storage system owner a fee (the toll) to convert fuel into electricity or manage the operation of the battery under a long-term tolling agreement. The offtaker supplies the fuel (fossil generation, most typically natural gas-fired) or manages the charging and discharging of the battery and bears the market risk and earns the revenue from electricity sales. The toll that the asset owner receives is structured to cover the generation project's fixed capital and operating costs.

- Under this procurement model the asset owner is responsible for construction cost and operating risks (both conversion efficiency and operating costs) and the offtaker bears the market risks.

Cons

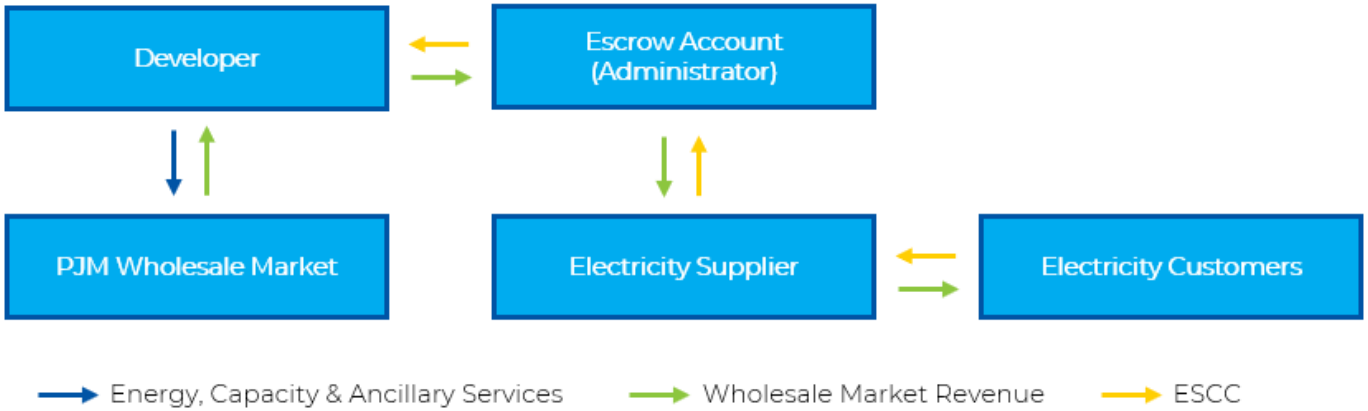
- A critical issue for Maryland with a full toll is who serves as the offtaker, responsible for making operating decisions, bearing market risks, and earning the energy market revenue? Under Maryland's electricity market structure market risks are most often borne by IPPs, marketers and traders. Utilities do not bear market risks, causing them to do so will require regulatory oversight and can increase their underlying risk, potentially with a corresponding increase in their required cost of capital.



Partial Tolling Agreement: Description (1/2)

- A contract structure where payment is provided for the provision of capacity to the facility owner, but the owner/operator of the facility directs dispatch and receives energy revenues and other non-capacity revenues.

- Under the partial-toll settlement framework that is being employed for the Commission's ongoing procurement for transmission connected energy storage projects, the energy storage device will provide energy, capacity, and ancillary services to the PJM wholesale market. The PJM Base Residual Auction (BRA) capacity revenues earned by the Project, will be transferred to the Escrow Administrator. The capacity revenues will be refunded or credited to the electricity customers by the Escrow Administrator through payments to or from Electricity Suppliers. The Project will retain any energy and ancillary services revenues earned.



Partial Tolling Agreement: Description (2/2)

- Under this procurement model the asset owner is responsible for the construction cost and operating risks (conversion efficiency, operating costs and operating performance) and bears the market risks associated with energy market revenues and the buyer is responsible for the risks associated with the market price for capacity.

- As noted in the previous slide, this procurement model is being used for the Commission's ongoing procurement for transmission connected energy storage projects and is well suited to Maryland's existing market structure.
    - In spite of the fact that the procurement required energy storage projects to be in PJM's Fast Lane, Transition Cycle 1 and Transition Cycle 2 Generation Interconnection Agreement processes and thereby limited the number of potential participants, five energy storage projects were submitted offering over 1,300 MW.
    - In Power Advisory's opinion this clearly suggests that a partial toll provides a strong incentive for energy storage project development even though the generation asset owner bears the residual risk associated with net margins earned in the energy and ancillary services market.

Partial Tolling Agreement: Pros/Cons

Pros

- A partial toll is clearly well suited to promoting the construction of energy storage projects, and in fact are well suited to all resources that are focused primarily on providing capacity. This model fits well within Maryland's market structure.
- Provide strong incentives to maximize the effective load carrying capability of the resource.

Cons

- Some storage developers[1] argued that a partial toll doesn't provide a strong enough market signal to support storage development. In Power Advisory's opinion the strong response and competitive pricing offered in the Commission's ongoing NGEA transmission connected energy storage procurement suggests that this is not the case. Regardless, the partial toll commercial construct allows bidders/applicants to specify a higher partial toll if they are concerned with the market risks associated with energy arbitrage revenues.

[1] PC66, No. 46, pg. 21.

Index Renewable Energy Credits/Index Storage Credits: Description

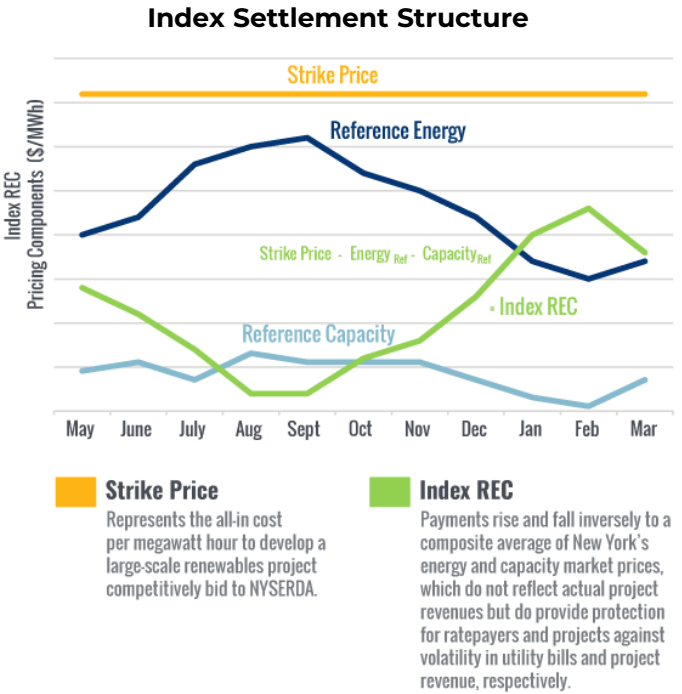
- A contract structure employed by NYSERDA for utility-scale renewable generation (solar, onshore wind, offshore wind, hydropower, fuel cells, tidal, and geothermal) and energy storage projects. Proposers bid a project strike price equivalent to the $/MWh value need to cover the project's capital and operational expenses. The day-ahead energy prices and the capacity prices for the ISO zone the project is located in, are deducted from the project strike price to establish a $/MWh "top up" payment to be made to the project. If the project's strike price less the day-ahead energy prices and capacity prices is negative, the project pays back excess revenues to utilities/ratepayers.

Pros

- Index REC reduces provides a hedge against market risk, supporting lower costs to customers. This structure is well suited to Maryland market and appropriate for renewable resources.

Cons

- Depending on how settled, proposers may embed a premium due to exposure to basis and shape risk. Basis risk is the difference between the nodal and zonal price for settlement. Shape risk is the output profile of the resource.
    - Shape risk can be mitigated by having resource settled against resource specific output profiles.
    - Basis risk can be mitigated through settling at the nodal verse at the zonal level.



Source: NYSERDA 2025

Competitive Dialogue: Description

- The procuring entity engages in a structured dialogue with prequalified developers prior to submission of final bids, enabling project specifications and contractual terms to be refined to reflect market conditions. This procurement model was proposed by MAREC Action. The competitive dialogue employs a multi-stage process:

(1) Pre-qualification: where a Request for Qualifications is issued that outlines the objectives, scope, and structure of the dialogue and procurement process. The statements of qualifications typically focus on experience, financial and technical capability and any essential project pre-requisites such as site control.

(2) Dialogue: where the procuring authority enters into structured, bilateral discussions with each developer qualified in the prior phase. These discussions focus on potential approaches to key commercial, technical, and contractual issues that materially affect project feasibility, risk allocation, and overall cost to ratepayers. Topics addressed during the dialogue may include economic and community benefit structures, transmission development and coordination, feasible commercial operation dates (CODs) and milestone requirements, and alternative pricing structures.

(3) Final bids: the procuring authority solicits final bids that conform to the Power Purchase Agreement (PPA) agreed to in the prior stage. Proposals are then evaluated according to the established evaluation criteria and a selection decision made. To the degree that there is a future need for additional resources the process can move directly to the dialogue stage if there are a sufficient number of prospective bidders to ensure a competitive result.

Competitive Dialogue: Pros/Cons

Pros

- Competitive dialogue procurement provides for iterative discussions with developers and by so doing provides an opportunity for alignment regarding preferred technical solutions. The dialogue with the procuring entity can enhance the developer's confidence in the procurement process and by so doing support their willingness to make the necessary investments to mature the project (e.g., secure permits)

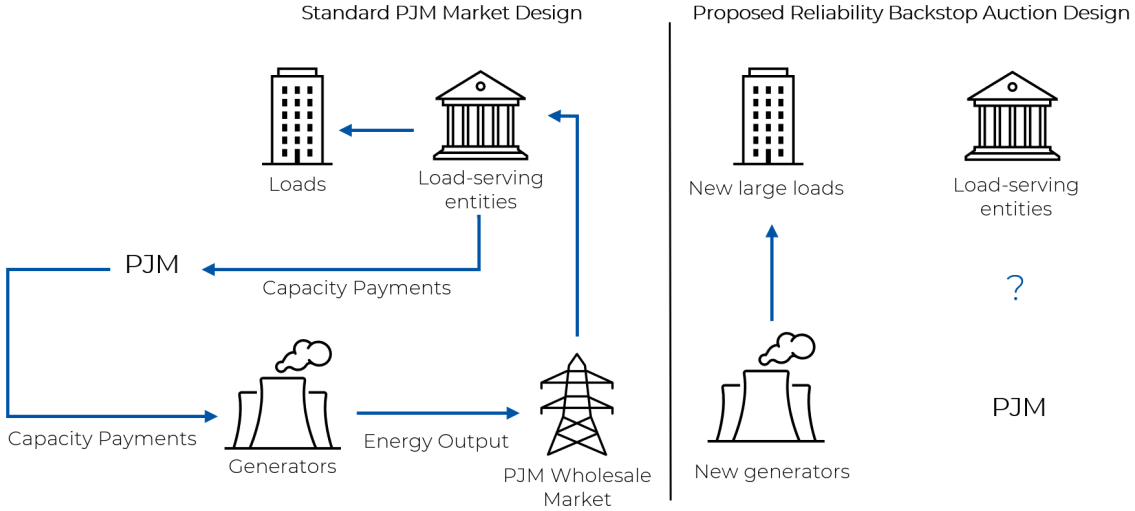
Cons

- Competitive dialogue procurements are highly resource intensive, particularly for the procuring entity who must maintain a dialogue with multiple parties and requires protections regarding the sharing of solutions.
    - Procuring entity should be able to weigh broad overall societal objectives.
- Competitive dialogue appears to be best suited for complex procurements where the resources being procured have complex development profiles and are heterogeneous. Offshore wind appears to offer a good fit, particularly recognizing the difficult project development environment posed by federal opposition. In light of this environment, competitive dialogue can give developers the confidence to advance development of their projects and by so doing reduce the time from proposal submission where bidders commit to contract pricing to financial close when bidders are able to largely lock in prices by executing contracts with equipment suppliers.

PJM Reliability Backstop Auction: Description

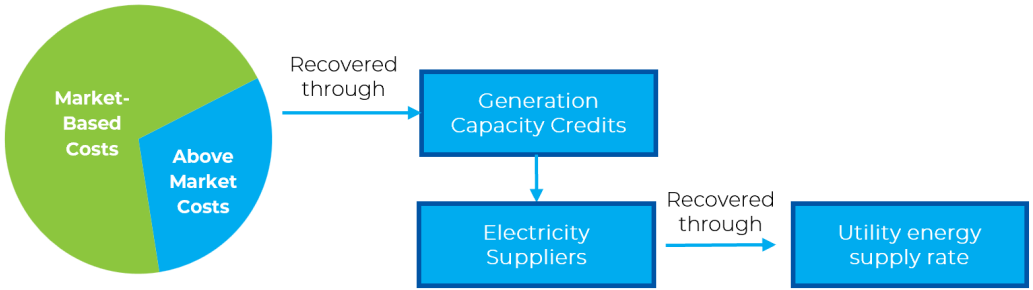
- PJM has proposed several models including a centralized PJM-administered procurement, in which PJM would serve as the counterparty, secure forward supply commitments, and allocate costs back to the relevant zone or EDC where the load is located. PJM is expected to post additional details regarding its proposal for the reliability backstop auction in April.

- Power Advisory will certainly consider this proposed design as well as its implications for the other generation procurement models.



Generation Capacity Credits: Description

- Generation Capacity Credits (GCCs) can be used to recover any above market costs (i.e., costs that can't otherwise be offset by market revenues) of the project.
    - As noted by the Office of People's Counsel (OPC) employing alternatives to GCCs to ensure that the costs of the generation procurement model are recovered from customers in the SOS process are likely to add risk to customers.
    - OPC identified three alternatives for how to manage the risks of any passing through the above market costs of offtake/ long-term contracts to SOS customers/suppliers. In Power Advisory's opinion each of these alternatives resulted in cost/risk outcomes that were inferior to employing GCCs. Furthermore, there is the underlying fairness issue of why these costs/risks should be borne by SOS customers and not all electricity customers given that the benefits of the procurement would flow to all customers, beyond just those participating in SOS.
- Many of the issues regarding the administration of GCCs are being addressed in the PC75 NGEAtx Obligations Workgroup. Power Advisory will monitor this workgroup and expects to follow the approach adopted.
    - Clearly, stakeholders that are interested in the outcome of these deliberations can participate.



Evaluation of Generation Procurement Models

Criteria to Evaluate Generation Procurement Models (1/2)

- Outlined below are the evaluation criteria that Power Advisory is considering employing to assess the relative attractiveness of each of the generation procurement models using a multi-criteria decision analysis framework:
  - Demonstrably result in new capacity that would not otherwise be developed under the PJM BRA capacity market
  - Rate impact: proposing to use high-level analysis to assess the anticipated rate impacts of different generation procurement models
  - Ratepayer risks: to be assessed along two dimensions (with attention given to the degree that models socialize risks and by so doing adversely impact customers)
    - Electricity price variability: unlikely to vary among procurement models
    - Potential for stranded costs: a risk that varies depending on the technology, the degree to which ratepayers bear market price and technology performance risks
  - Efficiency of risk allocation: are risks allocated to the party that is best able to manage this risk?
    - Strength of incentives for efficient project construction and operation:
    - Strength of project development incentive
  - Minimize distortions in the existing market structure
  - Implementation risk

Criteria to Evaluate Generation Procurement Models (2/2)

- Administrative complexity: the difficulty of administering the procurement model and associated market or program fixes (e.g., need for GCCs)
- Strength of incentive for project development and construction: the degree to which the procurement model is likely to result in the development of additional generation capacity that will reduce supply adequacy risks for Maryland electricity customers

Other Evaluation Considerations

- The Commission's RFP for the generation procurement models study specifies that the study shall also address [an] approach to 'least regrets planning' where options are considered and prioritized that would entail the least regret by projecting into the future and considering the consequences of each model on Maryland resource adequacy and customer rates to minimize future disappointment and maintain confidence while addressing potential risks with risk mitigation strategies."

- The Office of People's Counsel (OPC) noted that "Entering the market at this point to secure electricity for extended terms of commitment is a difficult challenge at a time when the overall wholesale power supply market is tight and likely to remain so in the near future…this may be an inopportune time for Maryland SOS customers to "go long" (particularly for capacity) as there is significant risk that RECA generation could be procured at the market peak, followed by a future market correction, thereby locking customers in at excessive costs. "[1]
    - In Power Advisory's opinion these risks can be mitigated by ensuring that any procurement process offers long-term contracts/offtake and is competitive. A procurement process with numerous prospective sellers offering a cumulative quantity that is well in excess of the volume to be procured should induce sellers to offer pricing that is competitive and doesn't result in supernormal returns.
    - However, there is a risk that this may be the 'peak' of the supply chain constraints and locking in term now locks in that cost. This is an issue for developers as well absent the procurement, i.e. if costs come down in 5 years they will own the most expensive asset in the fleet.

[1] PC66, No. 41, pg. 2-3.

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