How is power brought onto the grid? (process)

Supply onto the grid is a competitive market.
MD Potomac Edison does not own/operate power plants

Key Facts
• PJM administers the interconnection of new and upgraded generation resources.
• PJM performs planning analyses to ensure system reliability and generation deliverability to all PJM load.
• In July 2023, PJM began transitioning to a more efficient and timely process of handling New Service Requests.
• PJM does not approve projects. It studies a project's impact on the grid and the costs to interconnect.
• The project developer pays for the studies.
• New projects are reviewed in PJM's long range Regional Transmission Expansion Planning process.

PJM oversees the interconnection to the grid of new and upgraded generation resources, performing planning analyses and coordinating with Transmission Owners to ensure system reliability and generation deliverability to all PJM customers. All projects are treated equally, regardless of size, location or fuel. As renewable generation development has soared, the type of new projects has shifted from a limited number of large resources to thousands of requests for smaller, dispersed renewable energy projects. As a result, the number of projects entering PJM's New Services Queue has ballooned, and PJM worked with stakeholders to find ways to improve the interconnection process.

Interconnection Process Reform
After a yearlong extensive engagement of stakeholders, PJM filed and received approval in 2022 from the Federal Energy Regulatory Commission to implement new rules for a more efficient and timely process of handling New Service Requests. The reforms transition PJM from a "first-come, first-served" serial queue approach to a "first-ready, first-served" cycle approach. PJM began transitioning to the new process in July 2023. The transition is designed to study approximately 260,000 MW in projects before the new rules are fully implemented in 2026.

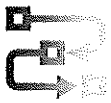
The Steps of the Process The interconnection process begins when a party proposing a new generating resource – or an increase in the capability of an existing generating facility – submits an interconnection request to PJM.

The process:
• Proposal – New project proposals are entered into a cycle by the deadline announced six months in advance.
• System Impact Study – PJM conducts multiple impact studies to perform detailed analyses and develop planning estimates for system upgrade costs and timing.
• Interconnection Facilities Study – Detailed design work is performed for all required network transmission upgrades and attachment facilities.
• Generation Interconnection Agreement – A Generation Interconnection Agreement is executed among the generation developer, the Transmission Owner to which the generator will be connected, and PJM. The agreement establishes the terms and conditions that will govern the interconnection and the rights that accrue to the generation developer.

Is Potomac Edison going to do here what Dominion did in Loudon: use up all the power so there isn't enough for new customers and everyone else?

- Load interconnections (regardless of load size) go through the FirstEnergy load connection process which involves a detailed load study (DLS) and is described below. Once the customer receives the DLS report, the next step is for them to sign a line extension or major power agreement and make any required payment to proceed forward with the recommended solution provided in the DLS. Then FE will work with PJM to present the customer connection need/solution through the PJM M3 attachment. Once the solution is presented, PJM then conducts a "No Harm Analysis" or study to ensure the project does not cause any PJM/FE transmission planning criteria. Once this is confirmed, PJM will then assign a supplemental ID for the project, and FE can include in the local plan to be implemented.

DLS Process and Timelines



- **Detailed Load Study (DLS)**
  - Detailed engineering study conducted by FE.
  - A written DLS report is provided to the Customer upon completion.
  - Required before a project to serve a customer is initiated.
  - Report provides Customer with project cost estimates, construction timeline estimates, and connection requirement details.
- **Process**
  - Customer works with the FE Customer representative (Customer Accounts or Economic Development)
  - Customer required to sign a study agreement and pay a study fee deposit for a DLS depending on the size of the load (<10MW = $5k, 10MW or more = $10k)
    - Upon completion of the DLS, a "true-up" of the actual costs of the study will be communicated to the customer for final payment
    - Customer would be notified in advance by the FE Customer representative if the cost of the study is expected to exceed deposit
  - The Customer rep. communicates the request to Transmission Planning
  - Transmission Planning & Protection reviews the request for completeness (site, load size, site plan, one-line, etc...) and proceeds with the study.
  - A detailed report of the study is provided to the Customer including cost estimates (Class 4) and construction timelines.
  - Customer would elect to proceed with the construction of the delivery point if satisfied with report and an agreement would be executed
- **Timelines**
  - DLS are completed within a 4-6 month timeframe of receiving a complete application.
  - Customer has 12 months upon receiving DLS report to notify FE of desire to proceed with the project.
  - Upon the customer signing the agreement to proceed, the project must go through the PJM Attachment M3 process which is a minimum of 3 months to complete

- Potomac Edison adheres to strict federal transmission reliability standards as well as those of PJM, which is responsible for the reliable operation of the electric grid in 13 states, including Maryland.

- As the grid operator, PJM is responsible for ensuring reliable power, providing capacity for the future and managing generation and other resources to meet consumer demand.

- PJM routinely conducts short-term (5 yr.) and long-term (15 yr.) forecasting of the demand for electricity to help ensure that consumers have a reliable supply of power today and in the years ahead. When projects such as Quantum Loophole request electric service, PJM incorporates that future "load" or demand into its forecasting data and works with Potomac Edison to ensure that the system can accommodate the demand. PJM analyzes several different factors to see what changes or additions are needed – such as connecting new power lines or upgrading existing equipment – to ensure ongoing reliable power supplies for consumers.

How is the power PE delivers generated? How do we know there is "green energy?"

- Due to Maryland's electric restructuring in 1999 Potomac Edison is precluded by law from owning or operating generation in Maryland.
- The company does procure generation for customers who choose to not shop the generation portion of their bill through our Standard Offer Service.
- That procurement is required to comply with the Maryland Renewable Portfolio Standard law that sets minimum percentages of renewable energy in the generation mix.
- Potomac Edison is in compliance with that requirement.

Who pays for all the infrastructure needed to serve data centers? New customers in general?

- A Customer pays for infrastructure serving that customer.
- The developer of a data center pays for the lines and equipment that will solely serve the property.
- Potomac Edison customers' electric distribution rates will not increase because of the construction of the new data center. Developers pay for the work needed to hook up electric distribution service.
- Any Regional Transmission upgrade that would benefit all is paid for by all through the Transmission rates:

The data center or end user pays for the infrastructure that will solely serve its property. The cost of infrastructure that strengthens the local transmission system and provides benefits to Potomac Edison customers through enhanced reliability and additional capacity will be recovered through transmission rates, a portion of which are ultimately passed through to utility customers.

Will new Transmission lines be needed? If so, can they be put underground?

Potomac Edison evaluates each situation as it arises but typically prefers to upgrade existing lines.

Underground installations of transmission lines typically have a greater potential to negatively impact streams, wetlands, and other sensitive areas.

Restoration periods for underground lines can take longer than overhead lines.

The cost for underground construction would be approximately four to 10 times as much as overhead construction.

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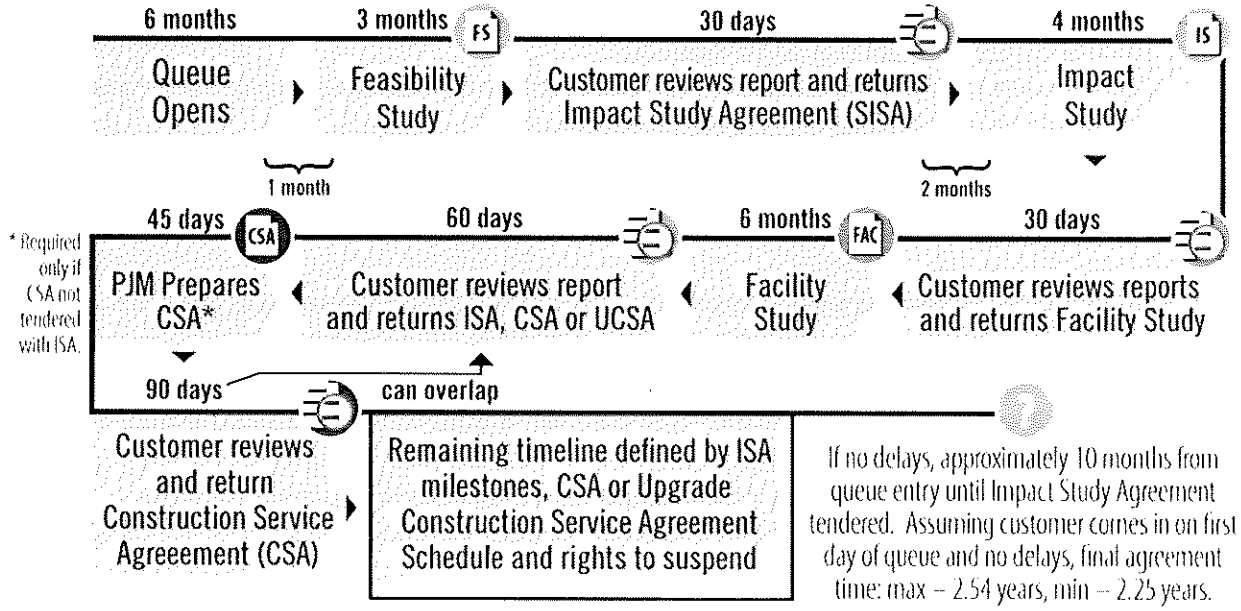
Contact Info: dkline@firstenergycorp.com 301-491-9100

The figure below depicts the interconnection process timeline, per PJM's Open Access Transmission Tariff.



How is power allocated to customers? Does one class take preference over another?

Potomac Edison has an obligation to serve all customers.
PE cannot prioritize or allocate energy delivery for specific customers or types of customers. When restoring power in the aftermath of a storm, however, Potomac Edison does give priority to hospitals and other critical medical facilities, communications facilities, and emergency response agencies.

Energy supply is lake a large lake or reservoir from which customers draw power. FE Transmission lines feed water into the lake. The distribution system supplies the water to customers locally. PJM monitors the "water level" and reviews projects as needed to keep an adequate supply for everyone.