

OCC appreciates AES Ohio's presentation of proposed solutions for customer-driven transmission needs in the vicinity of the Fayette, Clinton, and Stuart substations. Because these projects are at the Solutions stage of the M-3 process, OCC's comments focus on whether the selected transmission facilities represent prudent, appropriately sized, and cost-effective solutions to the identified needs.

AES Ohio presented proposed transmission solutions associated with customer-driven projects in the Fayette, Clinton, and Stuart areas. These projects are supported by projected customer requests reaching approximately 1.5 GW near Fayette, 500 MW near Clinton, and 1.3 GW near Stuart.

AES proposes approximately \$589.8 million in transmission investment, including new 345-kV transmission lines, substation expansions, capacitor installations, and customer delivery facilities.

Because these projects are in the Solutions stage, OCC respectfully requests additional information regarding:

1. The basis for concluding that the proposed facilities represent the most prudent and cost-effective solution to the identified needs.
 - a. AESO utilizes a variety of analyzes to ascertain appropriate sizing of transmission. A transfer analysis is used to ascertain the customer demand amount that triggers different transmission scopes to phase in implementation – during the selection of transmission scopes, a few different options are evaluated to determine if a single transmission scope satisfies many reliability needs relative to the customer demand or if multiple transmission scopes are truly needed. Preliminary cost estimates are used to evaluate the selection of different transmission options to assist in a least-cost selection manner. Transmission scoping includes a view into whether minor equipment upgrades such as terminal equipment, reconductoring, and/or advanced transmission technologies can be utilized. AESO also utilizes operational planning analysis techniques to determine if customer demand can be served before or without transmission scope.

Based on the above analyses, AESO concluded that the proposed facilities represent the most prudent and cost-effective solution to the identified needs.

- b. The extent to which the projected customer demand is supported by executed service agreements or other significant development milestones.

- c. AESO requires study and services agreements throughout the development process which document the customer requested demand schedule. AESO signs MOUs with prospective customers to cover costs of studies, CSAs with prospective customers to cover costs during construction for direct connection facilities and to provide security for network upgrades (based on the potential customer's requested demand) if the customer fails to take service, and ESAs with customers to protect existing customers if the prospective customer fails to take its requested level of service, among other things. Fayette and Clinton customer demand schedules are supported by agreements filed at FERC (a CSA and form ESA which is executed at a later date). Stuart customer demand schedules will be supported by an agreement filed at FERC (a CSA and form ESA which is executed at a later date); costs incurred by the utility will be protected by such written agreements with the customer.
 - d. Whether the proposed facilities have been appropriately sized based upon reasonably certain customer demand.
 - e. AESO performs a transfer analysis to determine which of the proposed facilities is needed for load capability that is contractually documented to appropriately size the facilities for the customer's requested demand. Contractual commitments (CSA and ESA) are utilized to protect exiting customers from customer requested demand that is not realized. The proposed facilities are validated against reliability metrics and planning criteria in a system impact study; and alternatives such as terminal equipment, reconductoring, and/or advanced transmission technologies are evaluated if they are applicable.
- See also response to No. 1.
- f. Whether portions of the proposed projects can be constructed in phases corresponding to demonstrated customer commitments.
 - g. AESO performs local planning studies to determine what scope is necessary and when it should be constructed. Where appropriate, AESO has divided transmission solutions into phases corresponding to utility investments to support the customer request (for example Dayton-2025-001).
- 2. The alternatives evaluated, including phased implementation, operational alternatives, equipment upgrades, and lower-cost transmission configurations.
 - 3. Dayton-2025-001 (Jeffersonville)

- i. Phased Implementation
 - 1. Phase 1 – Initial Customer Connection: partial capacity available to customer
 - 2. Phase 2A – Atlanta to Fayette is completed: Unlocks additional capacity to customer.
 - 3. Phase 2B – Clinton to Fayette is completed: Unlocks additional capacity to customer.
 - ii.
 - iii. Equipment Upgrades
 - 1. In the local planning studies, the majority of constraining Facilities’ limiting elements were the overhead Transmission conductor that required rebuilding transmission infrastructure. Minor equipment upgrades such as terminal equipment, reconductoring, and/or advanced transmission technologies were not able to be utilized.
 - iv. Lower-Cost Transmission Configurations
 - 1. This evaluation is explored below with discussion Fayette-Atlanta and Fayette-Clinton
 - v. Operational alternatives
 - 1. Operational alternatives are not applicable to the Jeffersonville customer site due to the limited amount of existing transmission infrastructure.
- b. Dayton-2025-002 (Wilmington)
 - i. Phased Implementation
 - 1. Phase 1 – Initial Customer Connection; full capacity available non-firm with operational agreement
 - 2. Phase 2 – Clinton to Fayette is completed: operational agreement ends full capacity is now firm.
 - ii. Operational Alternatives
 - 1. See phased implementation
 - iii. Equipment Upgrades
 - 1. In the local planning studies, the majority of constraining Facilities’ limiting elements were the overhead Transmission conductor that required rebuilding transmission infrastructure. Minor equipment upgrades such as terminal equipment, reconductoring, and/or advanced transmission technologies were not able to be utilized.
 - iv. Lower-Cost Transmission Configurations

1. This evaluation is explored below with discussion Fayette-Atlanta and Fayette-Clinton.
- c. Dayton-2026-001 (Stuart)
 - i. Phased Implementation
 1. Phasing was considered but was not necessary due to the scope of the existing facilities.
 - ii. Equipment Upgrades
 1. Local planning studies did not indicate a need for any network modifications besides that at Stuart.
 - iii. Lower-Cost Transmission Configurations
 1. Local planning studies did not indicate a need for any network modifications besides that at Stuart.
 - iv. Operational alternatives
 1. Operational alternatives are not applicable to the Jeffersonville customer site due to the existing transmission infrastructure available.
- d. Does PJM and/or the transmission owner have any information as to whether the prospective load interconnection customer has submitted similarly sized project proposals in other locations on that transmission owner's system, or in other transmission zones.
- e. There is not a duplicative request in the AESO zone.
- f. AESO is not aware of the load interconnection customer submissions in other zones.
- g. AESO requires customers associated with these projects to enter into Constructions Services Agreements and Electric Service Agreements that are filed at FERC. Please refer to answer in question #2.
4. Has PJM and/or the transmission owner conducted any analyses of the extent to which existing loads need the expansions being considered for the large load interconnection to serve their needs now or in the future. If so, please provide that information.
 - a. AESO performs a transfer analysis, which is the analysis type utilized to scope the extent of facilities required for determining what facilities are needed to serve their needs now or in the future. See also the response No. 2, regarding existing customer protections.

- b. The analysis above scopes transmission that is needed based on the timing of the need, these transmission scopes are evaluated in context of benefitting the existing customers – for example, removing the operational guide of Atlanta substation.

While AES identified several transmission alternatives for the Fayette and Clinton projects, OCC requests additional information regarding the comparative cost and performance of those alternatives.

- a. Below is the description of the alternatives considered for project Dayton-2025-001 and Dayton-2025-002
 - a. See the response to No. 5 a and b.

Dayton 2025-001

- b. AESO considered a local solution at Fayette for Dayton-2025-001 of only a direct connection to Fayette to minimize costs. The local solution at Fayette had reliability issues with the common-tower contingency (TPL-001 P7) of Madison-Fayette and other multiple overloads scenarios. Thus, AESO continued to evaluate solutions.
- c. Then, AESO considered the Atlanta to Fayette solution for Dayton-2025-001. Based on the reliability issues associated with the local solution described above, AESO concluded an additional connection was needed at Fayette and the Atlanta substation was the closest option for such connection (thus, minimizing costs). This option also addressed long-standing operational procedures at the Atlanta substation.
- d. However, additional reliability needs continued to exist, so further study was required. At that point, the solutions to Dayton-2025-002 resolved the remaining reliability needs of Dayton-2025-001 and the reliability needs of Dayton-2025-002 in a cost effective manner.

Dayton-2025-002

- e. AESO considered a local solution at Fayette for Dayton-2025-002 of only a direct connection to Fayette to minimize costs. The local solution at Fayette had reliability issues of the N-1-1 scenario at Clinton which extensively overloaded the local 69kV system. Thus, AESO continued to evaluate solutions.

- f. Then, AESO considered the considered the Clinton to Fayette solution. To solve the N-1-1 scenario at Clinton which extensively overloaded the local 69kV system, a 3rd 345kV line was selected due to the relative cost of extensive 69 kV improvements being excluded. Fayette is the nearest 345kV facility, and the Clinton – Fayette circuit alleviated other reliability issues on the local system. A single circuit was selected over a double circuit using reactive support strategies to maintain reliability needs and minimize costs.

Dayton 2025-001 and -002

- g. After the Clinton to Fayette solution for Dayton-2025-002 was selected, AESO reevaluated whether the Atlanta – Fayette solution of Dayton-2025-001 was still needed. After such evaluation was complete, AESO confirmed that the need still existed for reliability reasons.
- h. After engineering studies were performed on the voltage reliability requirements, it was considered that costs can be further reduced by adding additional capacitors at Clinton and Fayette and reducing the size of the SVC/STATCOM (a SVC was originally scoped, but the engineering studies showed that the best utility practice are STATCOMs).

For the Stuart project, AES identified "Alternatives: N/A." OCC requests an explanation of why no alternatives analysis was performed or presented.

Customer is connecting directly to a nearby existing facility which has enough available capacity to serve customer demand. The Stuart project is the minimum scope to connect customer to those facilities. There are no other facility alternatives available to connect customer aside from a new substation which was eliminated via least-cost alternative practices. These alternatives were excluded from posting since the relative expense of the new substation, while a feasible solution, led us to immediately exclude the option.

Finally, because these projects appear to be undertaken primarily in response to customer requests, OCC requests an explanation of how resulting transmission investments will be funded in a manner consistent with cost-causation principles and how existing residential consumers will be protected from bearing costs attributable primarily to serving new large-load customers.

TEAC is not an appropriate forum to discuss cost-causation and cost-allocation. Nevertheless, AESO signed a stipulation with OCC, PUCO staff, and other parties regarding these issues that is pending before the PUCO, and AESO enters into Construction Services Agreements and Electric Service Agreements with new large load customers that are filed at FERC. See the responses above.

AES's presentation relies on aggregated "customer requests" measured in hundreds or thousands of megawatts. Yet we are not being provided with sufficient information to evaluate the likelihood that those requests will materialize. As customer-driven transmission investments become larger and more frequent, OCC encourages PJM and transmission owners to develop standardized reporting identifying the maturity of customer requests, the level of contractual commitment supporting forecasted load, and the assumptions used in evaluating forecast uncertainty. Such information is essential to meaningful stakeholder review and to protecting consumers from the costs of transmission investments that may ultimately prove unnecessary.