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| NPRR Number | [1280](https://www.ercot.com/mktrules/issues/NPRR1280) | NPRR Title | Establish Process for Permanent Bypass of Series Capacitor |
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| Date of Decision | | July 8, 2025 | |
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| **Submitter’s Information** | | | |
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| Market Segment | | Industrial Consumers | |

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| Comments |

TIEC files these comments to clarify that projects to bypass or un-bypass series capacitors should be reviewed as Tier 2 projects instead of Tier 3 projects. Without this change, stakeholders may not holistically consider the impact that these projects could have on consumers and the stability or congestion of the system.

Importantly, series capacitors provide a variety of services, which may include critical stability support and congestion relief, so bypassing them could have significant implications for the system. Series capacitors on the system are bought and paid for by consumers, and even after they’re removed, they will stay in transmission rates. If there is a negative ramification associated with bypassing any of these capacitors, including additional costs on the system, those implications should be fully understood ***before*** a decision is made in the RPG review process.

Under the Protocols, ERCOT is not required to conduct an independent analysis of Tier 3 projects unless requested during stakeholder review. If no party submits a request to ERCOT, stakeholders could unknowingly increase costs to consumers, increase congestion, or decrease system stability by approving a request to bypass certain series capacitors. To ensure there are no negative consequences associated with these projects, ERCOT needs to provide analyses that demonstrate the impacts on grid reliability (i.e. the impacts to GTCs, stability of the system, etc.) and the full economic impact. The burden should not be on stakeholders to request ERCOT’s analysis, and instead, these projects should be Tier 2 projects, requiring ERCOT’s analysis of each project’s reliability and economic effects.

There have also been purported instances where ERCOT operations has asked utilities to bypass existing series capacitors during real-time operations. To the extent that this is accurate, it would be helpful to understand what analysis has been conducted (such as reviewing impacts to consumer or reliability impacts). Providing transparency around how often this occurs, which series capacitors are typically bypassed, and ERCOT’s analysis before asking utilities to bypass (or un-bypass) specific series capacitors could better inform the discussions on NPRR1280.

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| Revised Cover Page Language |

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| **Justification of Reason for Revision and Market Impacts** | The ERCOT System currently has 18 series capacitors installed in the 345 kV transmission network, to primarily enhance power transfer capability and provide voltage support by reducing impedance of the transmission lines between generation and major load centers. While series capacitors improve power transfer efficiency, they also introduce the risk of Subsynchronous Oscillation (SSO)—an abnormal energy interaction at frequencies below the normal operating frequency of 60 Hz. SSO can cause severe damage to generator shafts, series capacitors, and other system components, potentially leading to equipment failures and cascading outages. The risk of SSO increases as more generation or Large Load are located near existing series capacitors. In many cases, major transmission upgrades—such as new 345 kV transmission lines already approved or under construction—can effectively replace the original purpose of series capacitors. As a result, certain series capacitors may become redundant, less critical, or unnecessary following such major transmission upgrades.  The current RPG process does not include a formal review process for proposals to permanently bypass or un-bypass existing series capacitor(s). This NPRR requires that these projects be classified and reviewed as Tier 2 projects, ensuring they become subject to RPG Project Review. This clear and structured approach will ensure there are robust studies to support a proposal, while still enhancing transparency and coordination by providing RPG stakeholders the opportunity to review and provide comments. Also, efficiencies will be gained in the SSO study process as permanently bypassed series capacitors would no longer be considered capable of becoming radial to Generation Resources or Large Loads. |

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| Revised Proposed Protocol Language |

3.11.4.3 Categorization of Proposed Transmission Projects

(1) ERCOT classifies all proposed transmission projects into one of four categories (or Tiers). Each Tier is defined so that projects with a similar cost and impact on reliability and the ERCOT market are grouped into the same Tier. For Tier classification, the total estimated cost of the project shall be used which includes costs borne by another party.

(a) A project shall be classified as Tier 1 if the estimated capital cost is greater than or equal to $100,000,000, unless the project is considered to be a neutral project pursuant to paragraph (g) below.

(b) A project shall be classified as Tier 2 if the estimated capital cost is less than $100,000,000 and a Certificate of Convenience and Necessity (CCN) is required, unless the project is considered to be a neutral project pursuant to paragraph (f) below.

(c) A project shall be classified as Tier 2 if it involves the permanent bypass of an existing series capacitor or un-bypassing of a series capacitor that was previously designated as permanently bypassed.

(d) A project shall be classified as Tier 3 if any of the following are true:

(i) The estimated capital cost is less than $100,000,000 and greater than or equal to $25,000,000 and a CCN is not required, unless the project is considered to be a neutral project pursuant to paragraph (f) below; or

(ii) The estimated capital cost is less than $25,000,000, a CCN is not required, and the project includes 345 kV circuit reconductor of more than one mile, additional 345/138 kV autotransformer capacity, or a new 345 kV substation, unless the project is considered to be a neutral project pursuant to paragraph (g) below.

(e) A project with an estimated capital cost greater than or equal to $25,000,000 that is proposed for the purpose of replacing aged infrastructure or storm hardening shall be processed as a Tier 3 project and shall be reclassified as a Tier 4, neutral project upon ERCOT’s determination that any concerns, questions or objections raised during the comment process have been resolved satisfactorily.

(f) A project shall be classified as Tier 4 if it does not meet the requirements to be classified as Tier 1, 2, or 3 or if it is considered a neutral project pursuant to paragraph (g) below.

(g) A project shall be considered a neutral project if it consists entirely of:

(i) The addition of or upgrades to radial transmission circuits;

(ii) The addition of equipment that does not affect the transfer capability of a circuit;

(iii) Repair and replacement-in-kind projects;

(iv) Transmission Facilities needed to connect a new Generation Resource, Energy Storage Resource (ESR), or Settlement Only Generator (SOG) to a new or existing substation on the existing ERCOT Transmission Grid, including the substation;

(v) The addition of static reactive devices;

(vi) A project to serve a new Load, unless such project would create a new transmission circuit connection between two stations (other than looping an existing circuit into the new Load-serving station);

(vii) Replacement of failed equipment, even if it results in a ratings and/or impedance change; or

(viii) Equipment upgrades resulting in only ratings changes.

(2) ERCOT may use its reasonable judgment to increase the level of review of a proposed project (e.g., from Tier 3 to Tier 2) from that which would be strictly indicated by these criteria, based on stakeholder comments, ERCOT analysis or the system impacts of the project.

(a) A project with an estimated capital cost greater than or equal to $50,000,000 that requires a CCN shall be reclassified and processed as a Tier 1 project upon request by a Market Participant during the comment period per Planning Guide Section 3.1.5, Regional Planning Group Comment Process.

(3) Any project that would be built by an Entity that is exempt (e.g., a Municipally Owned Utility (MOU)) from getting a CCN for transmission projects but would require a CCN if it were to be built by a regulated Entity will be treated as if the project would require a CCN for the purpose of defining the Tier of the project.

(4) If during the course of ERCOT’s independent review of a project, the project scope changes, ERCOT may reclassify the project into the appropriate Tier.