

Flexible Interconnection Study in New York State

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New York Battery Energy Storage Technology Consortium
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Summary

As distributed energy resource (DER) penetration increases over time, traditional methods for evaluating interconnection hosting capacity and managing DERs are resulting in significant hosting capacity constraints and grid upgrade costs. These constraints threaten to slow progress toward New York's clean energy goals, reducing the cumulative environmental and economic benefits of DERs and increasing the overall cost of complying with the Climate Leadership and Community Protection Act (CLCPA).

Flexible interconnection capacity solutions (FICS), or the use of software and hardware to monitor and control DERs in real-time, can address hosting capacity constraints and support rapid DER deployment & electrification by mitigating costly traditional distribution upgrades and accelerating interconnection timelines.

Through this NYSERDA-supported study, New York Solar Energy Industries Association (NYSEIA), New York Battery Energy Storage Technology Consortium (NY-BEST) and Electrical Power Research Institute (EPRI) seeks to bridge the gap between stakeholders' interest and enthusiasm for FICS and effective FICS policy implementation in New York.

This study includes three major tasks with associated deliverables. This study will:

1. **Identify promising use cases for FICS:** In consultation with stakeholders, the project team will analyze hosting capacity constraints and identify use cases where FICS can address near-term and long-term constraints. Use cases evaluated will include battery energy storage systems (BESS) charging/discharging operations and photovoltaic (PV) on light load circuits and saturated transformers.
2. **Quantify the potential financial and clean energy benefits New York could realize through broad adoption of FICS:** this project team will analyze the cost effectiveness of FICS vs traditional upgrades identified in recent New York CESIR studies using reasonable assumptions regarding curtailment impacts, technology costs, and FICS operating costs. The team will estimate the scale of the impact that FICS could have if it were implemented statewide based on use cases evaluated. Impacts quantified will include cost-savings and incremental hosting capacity enabled. The analysis methods will be documented so they can be replicated, and the analysis will identify areas for future research and analysis.
3. **Evaluate Implementation Considerations:** the project team will solicit stakeholder input on practical considerations that must be addressed to implement FICS broadly in New York State. Topics of research and analysis will include: New York State Standardized Interconnection Requirements (SIR) modifications, DER management system technical requirements/interoperability standards, and curtailment rules. The team will compile its research findings into a presentation and summary report to share with NYSERDA and DPS Staff, DER providers, utilities, and other New York State stakeholders.

The study team plans to conduct stakeholder engagement through the Interconnection Technical and Policy Working Groups soliciting input to both inform the study and prime these stakeholders to think more concretely about FICS, promising use cases, and the challenges and opportunities presented by FICS. The study team will provide progress updates and share results of the study with participants in these working groups. The study team also plans to schedule small briefings with New York Utilities, DPS Staff, NYSERDA Staff, DER providers, and other core stakeholders. A final report with findings and recommendations will be made available after it is reviewed and approved by NYSERDA.

Timeline: This study will be completed over approximately 12 months, starting with stakeholder interviews in the summer of 2024 followed by the cost-benefit analysis and evaluation of implementation considerations.