**Areas of Rapid Agreement on Interconnection Material Modification Procedures**

**For Adding Energy Storage to Existing Solar Applications**

December 2018

The Standardized Interconnection Requirements (SIR) does not provide definitive rules and guidelines for adding a new Energy Storage System (ESS) to a solar (PV) application, at a single location, that is still in the electric utility’s interconnection queue and has not received its Permission to Interconnect (PTI). The main question here is whether additional time and analysis is needed by the utility in these situations. There are multiple operating configurations for ESS+PV that could be considered, however, through the efforts of a sub-group of the ITWG and IPWG, and the most common configurations seeking interconnection were prioritized to accelerate this effort and allow for the addition of ESS to existing PV projects in the utilities’ interconnection queues. The stakeholder sub-group propose the following approach:

General Requirements:

* If proposing to add ESS to an Existing PV project in the utility’s interconnection queue, the PV project shall continue to proceed as normal and all associated SIR process and payment deadlines shall stay in effect.
* All existing SIR rules and procedures shall be adhered to.
* As a result of the above and the limited scope of the below, the solar project’s position in the interconnection queue does not change.

Tier 1 Projects:

* Overview / Definition:
  + Includes ESS to be added to an existing PV application,
  + ESS charged from the PV only and DC coupled,
  + No proposed changes to the system’s operating characteristics, maximum export, equipment, or anything else different from the original PV project and associated study / impact analysis characteristics.
  + In alignment with the 2pm-7pm peak loading period specified under VDER, however, the applicant may request that the utility evaluate an expansion of the system’s maximum export window from the minimum load window used in the original CESIR to a window ending at 7pm ET. The utility shall complete this evaluation as part of the Protection/Control review using existing models that were developed during the original CESIR or through a standard screen if one is agreed to.
* Application Procedures
  + Requests to add ESS shall be submitted to the electric utility in compliance with the SIR, including a complete Appendix K.
  + The utility has 10 business days to review application for completeness and notify the applicant.
  + Utility shall receive application fees within 5 business days from the date the applicant is notified of the accepted / complete application.
  + Utilities will use diligent efforts to complete the Protection / Control analysis and respond to the applicant within 20 business days from date of payment received.
* Utility Analysis / Study Determinations
  + Potential outcomes/determination from the utility’s analysis / study are:
    - The utility confirms that there is no impact for the period studied in original CESIR, and specifies limiting controls on export if required. Project may proceed accordingly.
    - If asked to review whether the project could also export during additional hours, in addition to the above, the utility will also share the results of their screen.
      * Applicant may decide to design system not to operate beyond the period studied in the original CESIR. Project may proceed accordingly.
      * Or if the utility results show the addition of energy storage does not create additional system impacts and will not require additional review nor affect others behind it, the Applicant may decide to update the system to operate in the additional hour or hours. Project may proceed accordingly
      * Or if the utility results show the addition of energy storage does create additional system impacts and will require additional review, the Applicant may decide to have the project re-studied with an additional CESIR including additional cost and timeframes. Utility will provide the applicant with a schedule and fee for performing the study. Utility will use diligent efforts to complete the study, once started, within [ ] Business Days.

Tier 2 Projects:

* Overview / Definition:
  + Same as Tier 1, however, inverter configurations and equipment manufacturers may have changed due to the addition of ESS.
* Application Procedures
  + Same as Tier 1
* Utility Analysis / Study Determinations
  + Potential outcomes/determination from the utility’s analysis / study are:
    - Same as Tier 1 determinations listed above plus the following review for the equipment changes:
    - If Direct Transfer Trip (DTT) or other anti-islanding mitigations such as reclose blocking was identified in original CESIR, no additional study or screening is needed. Project may proceed accordingly.
    - If no DTT was required, utility must perform Anti-Islanding screening again to confirm potential impacts of the new inverter configuration and/or manufacturers.
      * If project passes Anti-Islanding screen, Project may proceed accordingly.
      * If project fails Anti-Islanding screens, the project may require a detailed Risk of Islanding study including additional cost and timeframes. The utility and applicant will follow the same procedure as above for the new study.