

## ITWG Industry Responses Energy Storage Roadmap Items for Discussion

Legend:	Description
Tier 1	Highest Importance - Next meeting discussion topic
Tier 2	High Importance - Needs to be discussed before January
Tier 3	Normal Importance - Program can start without discussing item

Category:	JU Comments:	Industry Response:	Industry Priority:
SIR Templates	Development of a standardized interconnection agreement template for energy storage system (ESS) operating characteristics (Attachment 1 of Appendix A of the New York State Standardized Interconnection Requirements (SIR))	This is a high priority for the Industry to discuss, specifically as it relates to monitoring and controls. However, it is our opinion that IPWG should lead the discussion in regards to adaptation of the contract.	Tier 1
SIR Templates	Development of a standardized application form for ESS application requirements, operating characteristics and market participation (Appendix K of the SIR)	This is a high priority for the Industry to discuss, specifically as it relates to monitoring and controls. However, it is our opinion that IPWG should lead the discussion in regards to adaptation of the contract.	Tier 1
Hosting Capacity	Coordination with stakeholders regarding the Hosting Capacity roadmap and use cases for energy storage	This is a relatively low priority for the Industry as the program can open without these issues being resolved.	Tier 3
Monitoring and Control Mechanisms	Ability to ensure systems are operating as per the standardized interconnection agreement (Attachment 1 of Appendix A of the SIR) and cannot be easily changed to a new operating mode (i.e. standalone vs. parallel mode)	This is a high priority for the Industry, and directly relates to approved Operating Characteristics.	Tier 1
Metering Requirements	Ability to support required tariffs	This is largely a Policy Issue at this point. Technical issues around metering were addressed last Winter. However, the Model Tariff themselves did not support Green Energy valuation that passed through an ESS.	Tier 3
Metering Requirements	Development of requirements for installation	This is not an urgent issue from the Industry standpoint, but recognize it should be discussed.	Tier 2

Market Considerations	Understanding of capabilities and requirements such as frequency regulation markets – maximum and frequency of power output changes	This is a low priority from the Industry standpoint, as there is not currently a path in place for dual participation. Also, it is our recommendation to define operation around physical attributes instead of market participation.	Tier 3
Market Considerations	Insight into ramp rate requirements	<p>This topic needs clarification before we can prioritize effectively:</p> <ul style="list-style-type: none"> <li>- Is the JU asking for technical information about Ramp Rate to determine Operating Conditions for modeling or in regards to how it can be controlled?</li> <li>- Does this relate specifically to frequency regulation?</li> </ul> <p>There are other functional standards that may need to be determined ahead of Ramp Rate, such as response time, control capabilities, data resolution, communications protocols, and reporting.</p>	Tier 2
Market Considerations	Determination of how to balance economic and reliability needs between NYISO and TOs	This is a low priority issue, as there is not currently a path in place for dual participation.	Tier 3
Technology	<p>Relay and control scheme requirements:</p> <ul style="list-style-type: none"> <li>- Formation of requirements of primary and backup control systems</li> <li>- Developer education of technology available to meet utility needs for control mechanisms and primary/backup systems</li> </ul>	This topic is a priority for the Industry. We would like to tie this effort to testing proposed by NYSERDA for software based controls.	Tier 2
Technology	Improved understanding of how technologies operate based on manufacturer propriety information	<p>This is a low priority from the industry perspective. However, this may be a topic requiring long term action items and so the industry is open to addressing this topic sooner if this is critical for progress with the JU.</p> <p>It would be helpful to understand what kind of information the JU needs. Is field data required, or is simulation and test data sufficient?</p>	Tier 3

Technology	Voltage control via smart inverters - i.e. monitoring and control to maintain voltage at the service point within ANSI C84.1 limitations	This topic needs direction from the IPWG, and we would like direct coordination with IPWG to make sure this grid benefit is appropriately valued.	Tier 2
Data Availability	How to manage 8760 analysis	This question requires some clarification. This may be addressed when discussing Operating Characteristics, but some there are some question on the intention of this statement:  - Is this referring to the analysis that Utilities will perform for modeling the effect of potential ESS on their distribution networks? - Is this for benchmarking and verification of existing installations?	Tier 2
Data Availability	How to coordinate with interconnected storage already served by a particular feeder/substation given unique operating characteristics of each facility	Industry representatives will need clarification on what is meant by coordination with existing ESS, but are open to discussing this point.	Tier 3
Technical Review	Modeling challenges/limitations to be considered - Increase in the number of scenarios studied as operating characteristics proposed evolve during discussion - Expected increase in time and need for restudies when developers submit application with uncertainty regarding operating schedules	This is an important topic from the Industry standpoint. Some helpful guidance on this point will likely be achieved after discussing approved Operating Conditions.	Tier 2
Technical Review	Fast tracking of specific ESS application types to be reviewed - Reverse power relaying limitations - Load threshold for behind the meter applications	This is a high priority of the industry to discuss, as there is a clear demand for projects with limited or no ESS export. Industry representatives would like to present on current and proposed Fast Track processes in CA.	Tier 1
Technical Review	Local municipality interconnection requirement impacts (e.g. Energy Storage System Permitting and Interconnection Process Guide For New York City Lithium-Ion Outdoor Systems)	It is our opinion this issue should be passed to the IPWG.	Tier 3
Technical Review	ESS paired with other Distributed Generation	This is a high priority for the Industry.	Tier 1