



## Battery Energy Storage System Committee Statements

While drafting Battery Energy Storage System (BESS) statements, this committee considered three different category/tiers of storage:

1. BESS that are integrated with utility-scale wind/solar projects;
2. Second phase/expansion of BESS integrated with utility-scale wind/solar projects; and
3. BESS standalone utility-scale projects.

This committee would suggest requiring the inclusion of the following information along with any utility-scale BESS application:

- o Category/tiers of BESS
- o Legal Descriptions of properties where any BESS facility/equipment will be located
- o Title Investigation/Drainage Report of participating properties
- o Landscape Plan
- o Initial Fire Safety Plan - over 600kW hours, county is the Authority Having Jurisdiction (AHJ), for county building and electrical code, and additional considerations.
- o Initial Emergency Response Plan - includes approval from EMA, local first responding entities, and addresses the safety of neighboring residents.
- o If ownership of the facility changes, the county will be notified; the new owner should conform and inherit responsibility of BESS and all requirements pertaining to the county's approval of the facility.
- o Liability Insurance
- o Indemnification: hold county harmless clause

Finally, this committee would limit the BESS use to the following zoning districts: AG (Agricultural), HC (Highway Commercial), GC (General Commercial), or I (Industrial). BESS should not be sited in the CNR (Critical Natural Resource) zoning district.

### **STATEMENT REGARDING PERMITTING: For permitting approval, we believe BESS should not be included in the Renewable Energy Overlay but rather require a separate conditional use permit even when included with solar or wind projects.**

- o Wind, solar, and battery energy storage are three distinctly individual technologies. Of the three facility types, battery energy storage is the only technology requiring emergency management planning for toxic and explosive gasses and protection of the public.
- o Due to public safety risks of BESS, notification of the project's permit request should be certified mailed to surrounding property owners prior to the project's approval so that surrounding property owners may have an opportunity to comment on the project.
- o A maximum lot coverage area percentage for BESS should be considered.



**STATEMENT REGARDING SETBACKS: For setbacks, we believe:**

**Current setbacks from property lines are insufficient when considering the location of proposed battery energy storage systems and should be greater, because:**

- Per the Office of Consumer Advocate (OCA) filing with IUB March 3, 2023, grid-scale BESS technology has experienced significant technological advancement and proliferation in recent years. The implementation of this technology carries safety risks and has the potential to pose significant hazards to persons and property. From a regulatory perspective, there is a need to evaluate and scrutinize the precautionary safety protocols and protection systems in order to safeguard the health, safety and welfare of communities hosting these facilities.
- Larger setbacks are needed for the safety of first responders, nearby residents, and the public. These setbacks would preferably be variable depending on the size of the proposed BESS - larger systems would potentially pose a larger risk and therefore should require a greater setback.
- Setback distances should consider plume dispersion distance and wind direction if toxic gasses are released in the event of fire. Past incidents have demonstrated that lithium ion batteries may burn for several days.
- Implementing sufficient setbacks may address noise concerns for residents of adjacent properties; equipment quality may impact noise levels that are produced.
- When integrated within utility-scale solar projects, BESS should be located as centrally as possible within the project boundaries instead of near the perimeter.

**STATEMENT REGARDING HAZARDS: For hazards, we believe: the health, safety, and welfare of the public, first responders and employees is paramount throughout the life of the installation; protection of the environment is also a highly desirable outcome.**

- An initial Failure Modes and Effects Analysis (FMEA) should be submitted with initial BESS application. The analysis should be updated as the design is revised and a final analysis provided prior to commissioning. The final analysis should be periodically updated based on industry lessons learned, changes to the facility/project, or as requested by the county.
- A hazard mitigation analysis should be submitted by the applicant that conforms with International Fire Code Ch. 1207. The analysis is a means of identifying hazards and the strategies to eliminate risk of occurrence.
- To protect land and water after an incident, a run-off catch basin or other similar facility should be installed as part of the project to prevent contaminants from leaving the property.
- Prevent installation of facilities/equipment on land with a high-water table.
- The installation/project area should have a gravel base and perimeter in the event of an incident, with vegetation located at a sufficient distance.

- BESS facilities/related equipment should not be placed on land zoned CNR (Critical Natural Resource) and should abide by IDNR and Soil and Water Conservation District recommendations for setback distances from waterways in order to: reduce risk of hazard contaminants entering surface and groundwater, as well as to protect wildlife habitat.

**STATEMENT REGARDING EMERGENCY OPERATIONS/RESPONSE PLAN: We believe the BESS developer must work with county EMA and local emergency responding entities to create requirements for developing emergency operations and response plan, including but not limited to:**

- Pro-active annual EMA and first responder engagement regarding facility and public safety.
- Developer is responsible for providing training and specialized supplies related to HAZMAT or safety considerations needed for emergency responders, related to BESS.
- Incident/emergency alert plan/system notification for residents (within a certain defined distance) to be maintained as residents change.
- Record, maintain and notify county of incident(s) (EMA and county authority)
- Cybersecurity concerns relating to public safety should be addressed.
- BESS facility signage should be installed identifying: on-site hazards, applicable suppression system(s), emergency contact number(s). These should be updated when information/equipment changes.

**STATEMENT REGARDING OPERATIONS AND MAINTENANCE PLAN: We believe each BESS facility should be maintained in good working order, and operators should keep detailed, accurate records throughout the life of the installation. Considerations include:**

- Upon request from Linn County, the owner must submit a current operations and maintenance report within an agreed upon number of days.
- Normal operational sound level should be specified, recorded, and maintained.
- Emergency “partial” removal of damaged or abandoned equipment should be responsibly disposed of in a timely manner.
- Maintain records for responsible disposal/recycling at a facility capable of receiving and safely disposing of hazardous waste, should also apply also to any battery disposal throughout the life of the project and make records available to the county AHJ.
- Include a disposal/recycling plan update as a section within the operations and maintenance plan and provide details to the county prior to facility operation.
- No storage of unused or inoperable equipment should be allowed on-site for emergency safety precautions.

- Must provide contact information for responsible party to address issues that may arise (broken/damaged equipment causing excessive noise, etc)

**STATEMENT REGARDING DECOMMISSIONING: We believe that the owner of the BESS is fully responsible for decommissioning and for associated liability for all components of and related to the BESS. Related considerations include:**

- Maintain records responsible disposal/recycling/ at a facility capable of receiving and safely disposing of hazardous waste, should also apply also to any battery disposal throughout the life of the project and make records certified to the county AHJ if part of larger RE project.
- Identify specific triggers for decommissioning (add on to RE or standalone) similar to other renewable energy projects included or standalone assets.
- No salvage value allowed, BESS owner to be fully responsible for the full cost of decommissioning, abandonment, and reclamation. Decommissioning bond/fund should cover this entire cost and be evaluated often for inflation, including labor, to maintain 100% coverage. Linn County should not be responsible to cover any costs associated with the BESS.
- Complete removal of all components of the BESS and related materials, including roads, and equipment above and below ground from the site; restoring the site back to its previous undeveloped condition as much as is practical.
- County has access to a decommissioning fund.
- Decommissioning bond/fund should remain maintained to 100% balance throughout the life of the project.

**STATEMENT REGARDING SCREENING/AESTHETICS: We believe screening and aesthetics should be considered during development/planning for BESS facilities in order to maintain rural character of area.**

- Native landscaping buffer/screening outside project perimeter, consider spacing distance with fire safety. Preference is placement on the outer perimeter, closer to adjacent properties to provide visual screening.
- Maintain landscape buffer/screening vegetation for the life of the project. Replace dead and dying vegetation and maintain plantings.
- Preference is to place electrical lines/connections underground to the extent feasible
- Fencing around BESS storage as to federal guidelines and to prevent animals and unauthorized people from entering the facility. Preference is a concrete/stone wall to serve as additional screening and is more aesthetically pleasing compared to chain fencing. May also prevent noise pollution for adjacent properties. As seen in various utility substations within area municipalities (Hiawatha and Cedar Rapids - 29th Street and Center Point Rd.).

- When integrated within utility-scale solar projects, BESS should be located as centrally as possible within the project boundaries instead of near the perimeter.

## **Battery Energy Storage Systems (BESS) Committee Research/Sources:**

### **BESS Ordinance Language**

- [Johnson County, Iowa - Battery Energy Storage System Ordinance](#)
- [Town of Barre, New York - Battery Energy Storage System Law](#)
- [DeKalb County, Illinois - Battery Energy Storage System Ordinance 2022 Draft](#)
- [DeKalb County, GA - Ordinance Adopting a Battery Energy Storage System Ordinance for DeKalb County](#)
- [Model Bylaw: Large-Scale Ground-Mounted Solar Photovoltaic Installations \(Cape Code Commission\)](#)

### **General Information, Best Practices:**

- [Battery Energy Storage Systems \(BESS\) Best Practices for Medway Presentation](#)
- [Broome County 2022 Spring Municipal Training Series – NYSEDA BESS Model Law CCE Clean Energy Communities Program](#)
- [Eight BESS Site Requirements You Might Be Forgetting \(Kimley-Horn\)](#)
- [What Entitlements and Permitting Experts Understand About BESS \(Kimley-Horn\)](#)

### **Hazards & Safety Standards Research:**

- [Office of the Consumer Advocate Filing with Iowa Utilities Board RE: Interstate Power and Light Company Docket No. GCU-2022-0004 on March 3, 2023](#)
- [Battery Hazards for large energy storage systems \(ACS Energy Letters\)](#)
- [National Fire Protection Association \(NFPA\) Battery Energy Storage Hazards and Failure Modes](#)
- [What Safety Professionals Need to Know about Battery Energy Storage Systems](#)
- [Siting and Safety Best Practices for Battery Energy Storage Systems \(Maryland Power Plant Research Program\)](#)
- [Four Firefighters Injured in Lithium-Ion Battery Energy Storage System Explosion – Arizona](#)
- [Lithium ion battery energy storage systems hazards \(Journal of Loss Prevention in the Process Industries\)](#) – this resource is only available through purchase
- [Lithium-ion Battery Energy Storage and Emerging Risks for Business \[Video\] | Travelers Insurance](#)
- [BESS Part 4: Flammable Hazards of BESS Failures \(Baker Engineering and Risk Consultants, Inc.\)](#)
- [Lithium Battery ESS: Knowing the Hazards and Reducing the Risk \(Jensen Hughes\)](#)
- [ESA Corporate Responsibility Initiative: U.S. Energy Storage Operational Safety Guidelines \(Energy Storage Association\)](#)
- [National Fire Protection Association \(NFPA\) 855: Standard for the Installation of Stationary Energy Storage Systems](#)

- [International Fire Code \(IFC\) Chapter 1207 Electrical Energy Storage Systems](#)
- [McMicken BESS Event Technical Analysis Recommendations \(Arizona Public Service\)](#)

**Emergency Operations/Response Plan Research:**

- [Proactive First Responder Engagement for Battery Energy Storage System Owners and Operators \(EPRI Technical Brief\)](#)
- [Energy Storage Corporate Responsibility Initiative Emergency Response Plan \(Energy Storage Association\)](#)
- [BESS Emergency Response Plan - Warwick, New York](#)
- Glidepath Energy Storage Emergency Response Plan – North Catskill, New York (unable to locate link to document)
- [Phoenix Regional Standard Operating Procedures – Battery Energy Storage Systems - Phoenix, Arizona](#)