

Battery Energy Storage System (BESS) Moratorium Workplan Report

April 20, 2026

Workplan items A-G listed below with findings, notes, and recommendations are based on research and interviews with subject matter experts as well as information gained through BESS facility project review currently underway. The workplan items are from the ordinance establishing the original moratorium, set to expire June 7, 2026, and may be slightly adjusted based on new information. These findings, as they develop, will inform Kitsap County Code recommendations. *Much of the findings and recommendations below were developed alongside the review of a current BESS project application.*

- A. The County is aware that BESS facilities may pose significant risks and will investigate the risks of explosion from overheating and resulting environmental contamination, as well as the general risk of fires that can take time to extinguish, require large volumes of water and chemicals to bring under control, and which may result in environmental contamination;**

Response

1. Hydrogen Fluoride (HF) Monitoring

- a. Installation of Hydrogen Fluoride (HF) gas detectors will be required around facility perimeters to enable continuous (24/7) monitoring. The system will establish baseline conditions and allow for early detection of abnormal HF gas concentrations, providing advanced warning prior to a potential incident.

2. Fire Testing and Plume Modeling

- a. A Large-Scale Fire Test Report in accordance with CSA-C800 and UL-9540 will be required, and standards will be submitted and reviewed. The report must include plume modeling to support hazard mitigation planning. Modeling should account for key variables such as weather conditions, temperature, suppression methods (including water usage), combustion characteristics, and potential impact radii (approximately 300-1,000 feet).

3. Wetlands and Surface Water Protection

- a. Critical area standard buffers must be adhered to.
- b. The project boundary must be located outside of buffer areas and will be expected to incorporate habitat protection measures such as buffer enhancements through native plantings and fencing.

4. Hydrogeological Assessment and Baseline Monitoring

- a. A Hydrogeological Assessment Report must be provided to determine if a proposed development is expected to have a significant impact on the long-term viability of the water resource, groundwater, or aquifer recharge and infiltration, or to otherwise introduce a risk of contamination to the aquifer recharge area. Baseline environmental conditions for soil, air, and water quality must be provided to support ongoing monitoring and early detection of potential contamination. The report must also define precursor baselines to inform future monitoring efforts.
- b. In alignment with recommendations from the Department of Commerce and subject matter experts emphasizing science-based policy and risk mitigation, the Hydrogeological Assessment Report must also include analysis of potential contaminants, including:
 - Heavy Metals
 - Volatile Organic Carbons (VOCs)
 - Polyfluoroalkyl substances (PFAS)
 - Particulate Matter (PM2.5)
 - Other potential toxins associated with catastrophic failure scenarios

5. Fire Suppression Considerations

- a. Current guidance indicates that lithium-ion battery fires may be allowed to burn out under controlled conditions, using water to prevent spread rather than extinguished with water, due to the potential for adverse reactions. Thermal runaway events may propagate beyond the initial failure point. Facility design, including separation distances between enclosures (aisle widths) and setbacks, must be optimized to slow or contain fire spread.

6. Fire Hydrant Requirements

- a. Fire hydrants must be distributed throughout the site such that spacing does not exceed 400 feet, ensuring adequate emergency response coverage.

7. Fire Apparatus Access

- a. Battery units located in a central portion of a site must meet the fire apparatus access requirements, and site design must avoid obstructions, such as retaining walls and fencing. An applicant must provide detailed design information demonstrating compliant access routes, including specifications for retaining walls and pathways to ensure adequate emergency access.

- B. BESS facilities produce noise, including low-frequency humming, visual impacts, and potential impacts to wildlife. The County will investigate the scope of these issues and where facilities may be best suited to reduce incompatibility with adjacent land uses while understanding that certain areas may be underserved with power backup needed. Zoning examinations will be conducted;**

Response

1. Noise Impacts

- a. A noise assessment will be requested to evaluate anticipated operational noise levels and attenuation measures. The study will be conducted by an independent third-party consultant, funded by the applicant.
- b. Environmental review under SEPA will address noise and related impacts.

2. Visual Impacts

- a. A solid screen buffer shall be installed, consisting of fencing and/or walls in combination with vegetative landscaping to ensure full screening from adjacent properties and public viewpoints with a solid screening vegetative landscaped buffer at least the width of the required zoning setback with at least a [height of barrier, eg, berm, wall], and include design standards for year-round screening, [eg, XX percent evergreen trees at heights no less than XX-feet and greater than XX DBH].
- b. Outdoor lighting shall comply with applicable Kitsap County Code (KCC) requirements. A photometric plan shall be submitted as part of the preliminary lighting design.
- c. Fencing shall comply with KCC 17.500.027 B.2 and Public Facilities Allowed Use Standards KCC 17.415.xx.
- d. All buildings and equipment shall utilize durable, non-reflective exterior materials (eg, galvanized metal or powder-coated finishes) to minimize glare.
- e. Environmental review under SEPA will address aesthetics and related impacts.

3. Land Use Compatibility, Zoning, and Setbacks

- a. Fire code requirements mandate a minimum 100-foot setback from BESS Facilities when perimeter boundaries are adjacent incompatible land uses or less intense zoning, including those separated by public right-of-way (ROW).
- b. Where multiple setback standards apply, the most restrictive requirement shall govern.

C. The County is aware that BESS facilities may create additional strain on local emergency response agencies and their personnel, and the County will investigate the scope of this issue in collaboration with local emergency response agencies;

Response

1. Hazard Mitigation

- a. A Hazard Mitigation Analysis shall be conditioned to be submitted as part of the building permit application but will be considered alongside the Land Use permit application review.
- b. Final equipment specification sheets shall be submitted or made available upon completion of construction.
- c. Emergency protective equipment, eg, particulate hoods, should be provided and distributed to emergency personnel. Based on modelling from studies and reports or other indicators, the hoods may be used during emergency responses.

2. Training Requirements

- a. The applicant shall host at least one educational training session for local emergency response agencies and personnel prior to facility operation.
- b. The applicant shall develop and provide Standard Operating Procedures (SOPs) outlining effective response, mitigation strategies, and safe operational protocols for battery failure scenarios. These SOPs shall be developed in coordination with, and approved by, the local Fire Chief. A final equipment specification sheet should be provided and/or available, post construction.
- c. The project owner/operator shall collaborate with the applicable fire districts to maintain pre-incident and emergency response plans.
- d. The project owner/operator shall collaborate with the applicable fire districts to develop and maintain pre-incident and emergency response plans. These plans shall be approved by the Fire Marshal and Fire District Chief, be reviewed and updated at intervals not exceeding three years and be maintained as a condition of permit approval and renewal. No construction or operational permits may be approved or renewed without current pre-incident and operational plans being in place.

3. Spill Response Plan

- a. A Spill Response Plan (SRP), including secondary containment protocols, shall be submitted for Land Use approval and required again at the time of Site Development Activity Permit (SDAP) application.

4. Emergency Response Plan

- a. A Draft and Final Engineered Emergency Response Plan (ERP), prepared by a qualified Fire Protection Engineer, shall be developed. Both Draft and Final ERP documents shall be shared with local fire districts for review, recommendation, and approval.

- b. Documentation confirming this coordination shall be provided to Kitsap County Department of Community Development (DCD) and the Fire Marshal's Office. The Final ERP shall be submitted with the Site Development Activity Permit (SDAP) application and included in the permanent project record.
- c. The ERP shall include, at a minimum:
 - A Thermal Incident Response Checklist with required periodic review and retraining intervals performed as part of the emergency response training.
 - Identification of the Fire Alarm annunciator location for the BESS monitoring system.
 - Access provisions, including installation of a Knox Box or Opticom system at facility gates (Opticom required for powered gates; Knox Box must be accessible outside secured areas).
 - Compliance with final site plan conditions and applicable codes, including NFPA 855 and the International Fire Code (with Washington State and Kitsap County amendments).
 - A detailed maintenance plan for prevention and control systems shall be provided in accordance with NFPA 855.
- d. Developments shall comply with the latest adopted Washington State Building and Fire Code to include NFPA 855 requirements and other standards deemed necessary by the [local jurisdiction, district or city's] fire plans reviewer.
- e. The applicant shall demonstrate financial responsibility for decommissioning in an amount to carry out all contingencies of the decommissioning plan required by WAC 51-54 A-1207, including coverage of all potential site cleanup and decommissioning activities.
- f. Owner/operator must provide and make available or distribute information approved by the department to educate, inform and update neighboring residents and the general public in the case of an emergency, including where to find said information.
- g. If established, Emergency Response Alert Systems shall perform a regular testing schedule and include notification plan for residents within a defined radius.
- h. If a siren tower or similar alert system is proposed; the applicant shall address:
 - Industry standards (if available)
 - Range or distance (based on wind conditions/distance)
 - Decibel rating at range or distance, (eg, 1,500 feet or greater)
 - Health implications due to alert noise, at what distance?
 - Duration of sounding alarm system
 - How is it activated
 - What sound – pulsating, whooping,
 - Hearing impaired users
 - Flashing Lights
 - Testing periods

5. Liability Insurance

- a. The applicant shall maintain adequate liability insurance coverage to address risks associated with BESS operation, including externalities (more TBD), water and ground contamination, property damage (eg, costs to repair/replace infrastructure), and business loss.
- b. Standards to prevent loss from happening (such as described earlier) and mitigating a response event to the least cost & disruption.

D. The Washington State Department of Ecology is beginning to compile guidance on BESS facility sites that the County will need to study before updating its zoning and other regulations applicable to BESS facilities;

Response

1. Co-Leads and Stakeholders

The Clean Energy Siting Council is co-lead by Commerce & Ecology and includes other participating state agencies to track efforts to improve how clean energy projects are sited, supports planning and interagency coordination for clean energy facilities, and develops annual reports with recommendations for the Washington Legislature. DCD will work with the following groups where needed:

- a. [Energy Facility Siting Evaluation Council \(EFSEC\)](#)
- b. [Council - Washington State Department of Ecology](#)
- c. [Environmental Justice Council Staff](#)
- d. [Governor's Office \(GOV\)](#)
- e. [Governor's Office for Regulatory Innovation & Assistance \(ORIA\)](#)
- f. [Governor's Office of Indian Affairs \(GOIA\)](#)
- g. [Washington Department of Agriculture \(WSDA\)](#)
- h. [Washington Department of Archaeology and Historic Preservation \(DAHP\)](#)
- i. [Washington Department of Fish & Wildlife \(WDFW\)](#)
- j. [Washington Department of Natural Resources \(DNR\)](#)
- k. [Washington State Department of Transportation \(WSDOT\)](#)
- l. [Washington Utilities and Transportation Commission \(UTC\)](#)

- E. The Washington State Legislature adopted House Bill 1216 in 2023, and new Washington State regulations are codified at WAC 51.54A.0322 which are intended to minimize the risks of lithium-ion BESS facilities through fire safety requirements and construction standards and will take effect soon. The County will study these new laws and regulations to determine what effects they will have on local regulatory authority. Other counties are also investigating the effects of these regulations. For example, King County is studying whether its codes need updating to add conditions for approving these types of facilities, including zoning, safety, and insurance requirements; Kitsap County desires to learn about King County's regulatory initiatives before finalizing updates to its regulations;**

Response

Current approaches largely rely on manufacturing practices and product design to minimize the two components of financial risk: frequency and severity of loss or partial loss events. Recommendations and BMPs include:

1. Loss Prevention

Employing or incentivizing loss prevention strategies to promote life safety and natural resource protection using Conformance Measures and Design Standards required by KCC.

a. Battery Management Systems (BMS) - Early problem detection and intervention is required but has limited impact once thermal runaway occurs, so a layered-protection strategy is recommended.

b. Multi-layered Protection Strategy to address these limitations include:

- Prevention Layer – BMS with real-time monitoring, overcharge/overdischarge protection, and thermal runaway prediction to stop problems before they start .
- Containment Layer – Localized fire suppression (eg, gas or water mist) and mechanical isolation of affected cells to limit spread [Power Electronics News](#).
- Detection Layer – Infrared and other sensors to detect early heat signatures and trigger alarms or shutdowns [AltEnergyMag](#).
- Thermal Management Layer – Battery Thermal Management Systems (BTMS) with liquid cooling or phase-change materials to keep cells within safe temperature ranges (15–50 °C) [Academia.edu](#).
- Emergency Response Layer – Integration with facility safety systems for evacuation, shutdown, and external fire suppression.

c. Given the potential for thermal runaway events and cascading system impacts, risk mitigation strategies shall include:

- Implementation of robust battery management systems for early fault detection.
- Adoption of layered protection strategies to reduce both the frequency and severity of incidents.
- Installation of automatic protection systems designed to isolate failures, limit damage extent, and prevent propagation.

2. Insurance requirements

An applicant must demonstrate at least \$1 million (actual TBD) in financial responsibility (eg, insurance or bonds) to cover potential damages from thermal events, provided certain conditions are met. Provide periodic verification every 5 years and ensure that original bond amount is adjusted for inflation or other economic factors. The County should address legal concerns (eg, hold harmless and indemnification clauses).

Provide a financial guarantee prior to pre-construction to demonstrate at least \$1 million in financial responsibility (eg, insurance or bonds) to cover potential damages from thermal events, provided certain conditions are met. Operators must submit confirmation to DCD every five years that their financial responsibility remains in place.

Require hazardous mitigation analysis at building review. Demonstrate adequate financial responsibility (eg, insurance or bonds) to cover potential damage from thermal events, provided certain conditions are met.

Operators must submit confirmation every five years that their financial responsibility remains in place.

F. Puget Sound Energy (PSE) is conducting Requests For Proposals for third-party private entities to develop energy storage facilities connected via high-voltage transmission lines to PSE's regional substations, has published safety and reliability requirements for such facilities that need to be explored and better understood before the County can finalize updates to its regulations;

Response

1. BESS as a Facility

How will Kitsap County define and evaluate BESS?

- Parameters; energy capacity, tiered, scale/size, type .
- Are other alternative energies defined the same? Solar, wind, geothermal, wave.

- c. Are all considered a public facility (17.110.640)? BESS has been argued as a utility substation and industry lexicon supports this.
- d. EFSEC's role.

2. Responsible Parties

How is financial responsibility determined? Owner of BESS or Purchaser of stored power being sold to the grid/user?

3. PSE and Regulator Oversight

As a regulated utility, Puget Sound Energy will not allow facilities to interconnect or operate unless their published safety and reliability requirements are met or exceeded. Design, engineering, and review processes should be built around complying with those standards. There are multiple layers of utility and regulatory oversight on safety and reliability.

G. It is unknown what fiscal or economic development benefits would flow to the County if battery energy storage system facilities were permitted within the County or which zone(s) would be most advantageous for siting them. The County needs to investigate and analyze potential economic impacts and tax revenues associated with such projects.

Response

1. Effects of BESS

Possible positive outcomes of alternative energy integration may include:

- a. Boost tax revenues, create jobs, improve grid resilience & recovery times, cost savings.
- b. Increase assessed property values which increases revenue.
- c. Improve reliability, especially in rural/remote areas [Washington State Association of Counties](#).
- d. Hosting facilities in rural counties brings new tax bases/infrastructure investments.

2. Taxation and Distribution of Benefits

Washington's proposed excise tax model offers a way to capture the full economic value of these projects while ensuring fairer distribution of benefits, potentially making clean energy deployment more sustainable and equitable.

Proposed Renewable Energy Excise Tax: HB 1960 (2026) proposes replacing property taxes on qualifying renewable energy systems with a renewable energy excise tax based on generating capacity. At least 75% of revenue would go to local jurisdictions in proportion to their property tax share, with the rest funding tribal grants and clean energy policy [Washington State House Democrats](#). This aims to create a predictable, stable revenue stream for communities hosting projects.

3. Revenue Comparison

HB 1960's sponsors note that the excise tax revenue is comparable to what would have been collected via property taxes over the equipment's lifetime, potentially avoiding the long-term tax shift [Washington State House Democrats](#).

- a. Policy considerations.
- b. Equity: Ensure communities hosting projects share benefits, not just costs.
- c. Community Investment: Require or incentivize local funding for public services or resident benefits [Capital Press](#).
- d. Grid Integration: Coordinate with PSEs to maximize outage support and avoid overbuilding.