Megan Brocco

To: Clean Energy Coordination, Washington State Department of Ecology
Re: Scoping Comments, Battery Energy Storage System Facilities Programmatic EIS (Publication 26-06-017)

Dear Clean Energy Coordination Team,

My name is Megan Brocco. I own property in the Fall City / Snoqualmie Valley area of unincorporated King County within the 2 mile radius of the proposed Cascadia Ridge Resiliency Energy Storage project.

That project would put an approximately 130 MW stand-alone lithium-ion battery facility on about 45 acres south of Fisher Creek Park. The site is next to Snoqualmie Ridge neighborhoods and about 0.7 miles from Cascade View Elementary. The developer, Jupiter Power LLC of Austin, Texas, is a merchant energy company. It has said it will seek state certification through the Energy Facility Site Evaluation Council (EFSEC), bypassing county permitting.

I support Washington's clean-energy goals. I oppose siting utility-scale lithium-ion BESS next to homes, schools, farms, private wells, and salmon-bearing waters. Project reviews like Cascadia Ridge will tier to this PEIS, so its scope will decide whether communities are protected or merely studied. Below I explain the evidence. At the end I list the specific studies I ask Ecology to include.

1. SEPA requires weighing severity, not just probability

Developers point to declining fire rates. The Electric Power Research Institute (EPRI) recorded 24 battery-facility fires worldwide in 2025. But under WAC 197-11-794, an impact can be significant even when its chance of occurring is low, if the result would be severe. A multi-day lithium-ion fire upwind of a school, a neighborhood, and an agricultural valley is that kind of impact. Where data are incomplete, WAC 197-11-080 requires Ecology to disclose the gap rather than fill it with industry assurances.

2. What a single battery container can release

Peer-reviewed testing (Larsson et al., Scientific Reports, 2017) measured 20 to 200 mg of hydrogen fluoride (HF) per watt-hour of battery capacity during lithium-ion fires. Applied to one typical 5 MWh enclosure, that is on the order of 100 to 1,000 kg of HF from a single container. For comparison, NIOSH's "immediately dangerous to life or health" level for HF is 30 ppm. Lithium-ion fires also release hydrogen cyanide, carbon monoxide, and metal-rich particulate.

Large BESS fires are commonly fought defensively. Responders protect nearby exposures and let the involved enclosure burn out. That means releasing the chemical inventory to the air is the expected outcome of a fire, not a remote contingency.

3. Moss Landing shows contamination is real and traceable

Vistra's 300 MW Moss Landing facility burned on January 16, 2025, forcing about 1,200 residents

to evacuate. Researchers at San José State University's Moss Landing Marine Laboratories had baseline soil data from nearby Elkhorn Slough. After the fire, they found nickel, manganese, and cobalt nanoparticles in marsh soils at roughly 100 to 1,000 times prior levels. The nickel-to-cobalt ratio matched the batteries' manufacturing proportion, a chemical fingerprint tying the deposits to the fire (Scientific Reports, November 2025).

A separate agricultural soil survey near the site did not find statistically significant increases. That contrast is the lesson: contamination can be confirmed or ruled out only where a baseline exists. Most Snoqualmie Valley farms, gardens, and private wells have none.

4. Firewater, PFAS, and salmon

Fire-suppression water can carry dissolved metals, fluoride, electrolyte byproducts, and PFAS. Research has identified fluorinated PFAS compounds in some lithium-ion battery components (Guelfo et al., Nature Communications, 2024). Washington already restricts PFAS in firefighting foam (RCW 70A.400).

The Cascadia Ridge site drains toward Fisher Creek and the Snoqualmie River. Those waters support ESA-listed Chinook salmon, the prey base for endangered Southern Resident orcas. They are also of treaty and cultural significance to the Snoqualmie Tribe, which raised these same contamination pathways in its scoping comments.

5. Who pays for cleanup?

Off-site contamination would fall under the Model Toxics Control Act (MTCA, chapter 70A.305 RCW), and damaged batteries are likely dangerous waste (chapter 173-303 WAC). MTCA makes owners and operators strictly liable. That liability is only as good as the party's ability to pay.

BESS are typically held by single-project LLCs. King County Ordinance 19824 requires only $1 million in financial responsibility for thermal events, and only under certain conditions. That is a small fraction of the plausible cost of multi-day response, off-site soil and well remediation, crop and livestock losses, and long-term monitoring. If the project entity dissolves, the cost shifts to the public and the neighbors.

6. Response to Jupiter Power's scoping comments

Jupiter Power, the Cascadia Ridge developer, submitted its own scoping comments. Several of its requests would weaken this PEIS, and I ask Ecology to reject them.

"Analyze benefits, but skip site-specific impacts and mitigation." This is backwards. A programmatic EIS is the right place for siting screens, exclusion areas, and baseline mitigation (WAC 197-11-442). If benefits are counted, they must be demonstrated for each project and weighed against the full cost of failure borne by the host community.
"Battery chemistry makes little difference." Chemistry drives thermal-runaway likelihood, heat release, off-gas composition, and the metals deposited after a fire. Jupiter itself has reportedly contracted for up to 4.75 GWh of sodium-ion batteries.
"Do not limit capacity or duration." Jupiter describes projects of 100 to 400 MW with 4 to 8 or more hours of storage. Civil plans for Cascadia Ridge have reportedly shown a buildout far larger

than the 130 MW presented to the public. Hazard scales with stored energy (MWh), not nameplate power (MW).
"Potential impacts may be misread as likely." Disclosing foreseeable impacts is SEPA's purpose. A presumption toward protective measures is appropriate when the risk falls on people who never agreed to it.
"Batteries displace fossil-fuel peaker plants." Storage can raise system emissions depending on what charges it and what it displaces (Hittinger and Azevedo, Environmental Science & Technology, 2015). About 10 to 15 percent of stored energy is lost each charge-discharge cycle. Washington's hydro-dominated grid differs from the grids where these benefits were studied.
"Jobs and tax revenue." Construction jobs are temporary, and operating facilities employ few permanent staff. Public costs must be counted against tax revenue.
"Use specialized fire consultants" and "rely on NFPA 855 and UL 9540." Expertise must be independent of developers and manufacturers. Fire codes govern spacing and testing. They do not evaluate off-site deposition, groundwater, food-chain exposure, or cleanup liability.

7. Emergency response capacity and land-use policy

King County Fire District 38, which has jurisdiction over the site, has formally opposed it, warning that a BESS fire could overwhelm the area's emergency resources. Eastside Fire & Rescue has stated it cannot confirm it is fully prepared for an incident of this scale. Battery facilities have exploded as well as burned:

Surprise, Arizona (2019): an explosion injured firefighters.
Beijing (2021): an explosion killed two firefighters.
Otay Mesa, California (2024): the Gateway fire burned for days and forced evacuations.

The valley's evacuation routes are few: Snoqualmie Parkway, SR 202, SR 18, and I-90.

State and county policy point the same way:

The Growth Management Act requires protection of rural character, critical areas, and groundwater (RCW 36.70A.070(5)), based on best available science (RCW 36.70A.172).
EFSEC's statute calls for energy facilities with minimal adverse effects on the environment and state waters (RCW 80.50.010).
King County protects the Snoqualmie Agricultural Production District and its aquifer recharge areas, yet allows BESS on nearly 97 percent of unincorporated land.
The City of Sumner, which is building a 200 MW BESS, independently recommended excluding critical areas, wellhead protection areas, municipal watersheds, and wildlife conservation areas.

Requested studies: what the PEIS should analyze

I respectfully ask Ecology to include the following in the scope of the PEIS.

Worst-case fire scenario. Analyze full involvement of one or more enclosures burning over several days, not only a single-module failure. Identify which impacts cannot be mitigated below significance, consistent with WAC 197-11-794.
Toxic plume dispersion modeling. Model HF, hydrogen cyanide, carbon monoxide, and metal particulate under nighttime temperature inversions and valley terrain. Report concentrations at the

nearest homes, schools, farms, and parks, at distances of 0.5, 1, 2, and 5 miles. Compare results to NIOSH IDLH and Acute Exposure Guideline Level (AEGL) thresholds.

Deposition onto farms and the food chain. Analyze deposition of nickel, cobalt, manganese, and fluoride onto cropland, pasture, home gardens, and livestock forage. Analyze plant and animal uptake, using the Moss Landing findings as a reference case.

Baseline sampling. Recommend that project-level review require pre-construction baseline sampling of soils, surface water, and every private well within a defined radius, so harm can be detected and proven.

Firewater, PFAS, and groundwater pathways. Quantify suppression-water volumes and chemistry for a multi-day event, including PFAS from batteries and suppressants. Map pathways to shallow aquifers, Critical Aquifer Recharge Areas, wellhead protection zones, private wells, and fish-bearing streams. Size containment for a full-facility event.

Salmon, orca, and Tribal resources. Analyze downstream effects on ESA-listed Chinook, Southern Resident orcas, and Tribal treaty and cultural waters, in consultation with affected Tribes.

Cleanup cost and financial assurance. Estimate worst-case response and remediation costs from real incidents, including Moss Landing's multi-year cleanup. Compare those costs with current insurance and bonding requirements. Evaluate MTCA liability when the operator is a single-project LLC. Recommend financial assurance scaled to stored energy (MWh), backed by a solvent parent or escrow, surviving sale or bankruptcy, with a defined process to compensate affected residents and farmers.

Emergency response and evacuation capacity. Assess local fire, hazmat, hospital, and HF-antidote capacity, firefighting water supply, and modeled evacuation times for surrounding populations, including schools. Treat inadequate capacity as a factor that disqualifies a site, not a later permit condition.

Exclusion mapping and setbacks. Map areas where utility-scale lithium-ion BESS should not be sited:

agricultural production districts

critical aquifer recharge and wellhead areas

areas dependent on private wells

shorelands, wetlands, and stream buffers

floodplains and seismic, landslide, and liquefaction zones

wildland-urban interface

communities with constrained evacuation routes.

Recommend setbacks from homes, schools, parks, and wells based on plume modeling, scaled to MWh. Proximity to a substation must not count as suitability.

Chemistry-specific analysis. Analyze NMC, LFP, sodium-ion, iron-air, and flow batteries separately. Recommend that the chemistry and the specific product be fixed and disclosed before project review, with no later substitution.

Full buildout and cumulative impacts. Analyze the maximum energy a site can hold, including expansion and augmentation. Analyze clustering of facilities around substations and in single watersheds.

Need, beneficiaries, and net emissions. Require project reviews to identify the specific grid need, the offtaker, and the revenue source: reliability, market arbitrage, or new large loads such as data centers. Evaluate net emissions using Washington grid data rather than assumed peaker displacement.

Alternatives. Compare lower-risk alternatives under WAC 197-11-440(5):

industrial, brownfield, and previously disturbed sites

non-flammable or lower-hazard storage, including pumped hydro (such as the Goldendale project

Ecology itself reviewed)
demand response, efficiency, distributed storage, and grid upgrades.
Independence of data. Disclose the funding source of every dataset and rely on reviewers with no financial ties to BESS developers or manufacturers.
Local authority and timing. State that the PEIS's protections are a floor, not a ceiling, for local governments. Share interim findings with EFSEC so projects like Cascadia Ridge are not approved before this analysis is complete.

Washington does not have to choose between clean energy and safe communities. I urge Ecology to use this PEIS to protect people, land, and water first. Please include this comment in the scoping record and notify me of the Draft PEIS.

Respectfully,
Megan Brocco
BS Environmental Engineering, Columbia University
36515 SE 56th St, Fall City, WA 98024
brocco.megan@gmail.com

To: Clean Energy Coordination, Washington State Department of Ecology
Re: Scoping Comments, Battery Energy Storage System Facilities Programmatic EIS (Publication 26-06-017)

Dear Clean Energy Coordination Team,

My name is Megan Brocco. I live in the Fall City / Snoqualmie Valley area of unincorporated King County, within a 2 mile radius of the proposed Cascadia Ridge Resiliency Energy Storage project.

That project would put an approximately 130 MW stand-alone lithium-ion battery facility on about 45 acres south of Fisher Creek Park. The site is next to Snoqualmie Ridge neighborhoods and about 0.7 miles from Cascade View Elementary. The developer, Jupiter Power LLC of Austin, Texas, is a merchant energy company. It has said it will seek state certification through the Energy Facility Site Evaluation Council (EFSEC), bypassing county permitting.

I support Washington's clean-energy goals. I oppose siting utility-scale lithium-ion BESS next to homes, schools, farms, private wells, and salmon-bearing waters. Project reviews like Cascadia Ridge will tier to this PEIS, so its scope will decide whether communities are protected or merely studied. Below I explain the evidence. At the end I list the specific studies I ask Ecology to include.

1. SEPA requires weighing severity, not just probability

Developers point to declining fire rates. The Electric Power Research Institute (EPRI) recorded 24 battery-facility fires worldwide in 2025. But under WAC 197-11-794, an impact can be significant even when its chance of occurring is low, if the result would be severe. A multi-day lithium-ion fire upwind of a school, a neighborhood, and an agricultural valley is that kind of impact. Where data are incomplete, WAC 197-11-080 requires Ecology to disclose the gap rather than fill it with industry assurances.

2. What a single battery container can release

Peer-reviewed testing (Larsson et al., *Scientific Reports*, 2017) measured 20 to 200 mg of hydrogen fluoride (HF) per watt-hour of battery capacity during lithium-ion fires. Applied to one typical 5 MWh enclosure, that is on the order of 100 to 1,000 kg of HF from a single container. For comparison, NIOSH's "immediately dangerous to life or health" level for HF is 30 ppm. Lithium-ion fires also release hydrogen cyanide, carbon monoxide, and metal-rich particulate.

Large BESS fires are commonly fought defensively. Responders protect nearby exposures and let the involved enclosure burn out. That means releasing the chemical inventory to the air is the expected outcome of a fire, not a remote contingency.

3. Moss Landing shows contamination is real and traceable

Vistra's 300 MW Moss Landing facility burned on January 16, 2025, forcing about 1,200 residents to evacuate. Researchers at San José State University's Moss Landing Marine Laboratories had baseline soil data from nearby Elkhorn Slough. After the fire, they found nickel, manganese, and cobalt

nanoparticles in marsh soils at roughly 100 to 1,000 times prior levels. The nickel-to-cobalt ratio matched the batteries' manufacturing proportion, a chemical fingerprint tying the deposits to the fire (*Scientific Reports*, November 2025).

A separate agricultural soil survey near the site did not find statistically significant increases. That contrast is the lesson: contamination can be confirmed or ruled out only where a baseline exists. Most Snoqualmie Valley farms, gardens, and private wells have none.

4. Firewater, PFAS, and salmon

Fire-suppression water can carry dissolved metals, fluoride, electrolyte byproducts, and PFAS. Research has identified fluorinated PFAS compounds in some lithium-ion battery components (Guelfo et al., *Nature Communications*, 2024). Washington already restricts PFAS in firefighting foam (RCW 70A.400).

The Cascadia Ridge site drains toward Fisher Creek and the Snoqualmie River. Those waters support ESA-listed Chinook salmon, the prey base for endangered Southern Resident orcas. They are also of treaty and cultural significance to the Snoqualmie Tribe, which raised these same contamination pathways in its scoping comments.

5. Who pays for cleanup?

Off-site contamination would fall under the Model Toxics Control Act (MTCA, chapter 70A.305 RCW), and damaged batteries are likely dangerous waste (chapter 173-303 WAC). MTCA makes owners and operators strictly liable. That liability is only as good as the party's ability to pay.

BESS are typically held by single-project LLCs. King County Ordinance 19824 requires only $1 million in financial responsibility for thermal events, and only under certain conditions. That is a small fraction of the plausible cost of multi-day response, off-site soil and well remediation, crop and livestock losses, and long-term monitoring. If the project entity dissolves, the cost shifts to the public and the neighbors.

6. Response to Jupiter Power's scoping comments

Jupiter Power, the Cascadia Ridge developer, submitted its own scoping comments. Several of its requests would weaken this PEIS, and I ask Ecology to reject them.

- **"Analyze benefits, but skip site-specific impacts and mitigation."** This is backwards. A programmatic EIS is the right place for siting screens, exclusion areas, and baseline mitigation (WAC 197-11-442). If benefits are counted, they must be demonstrated for each project and weighed against the full cost of failure borne by the host community.
- **"Battery chemistry makes little difference."** Chemistry drives thermal-runaway likelihood, heat release, off-gas composition, and the metals deposited after a fire. Jupiter itself has reportedly contracted for up to 4.75 GWh of sodium-ion batteries.
- **"Do not limit capacity or duration."** Jupiter describes projects of 100 to 400 MW with 4 to 8 or more hours of storage. Civil plans for Cascadia Ridge have reportedly shown a buildout far

larger than the 130 MW presented to the public. Hazard scales with stored energy (MWh), not nameplate power (MW).
- **"Potential impacts may be misread as likely."** Disclosing foreseeable impacts is SEPA's purpose. A presumption toward protective measures is appropriate when the risk falls on people who never agreed to it.
- **"Batteries displace fossil-fuel peaker plants."** Storage can raise system emissions depending on what charges it and what it displaces (Hittinger and Azevedo, *Environmental Science & Technology*, 2015). About 10 to 15 percent of stored energy is lost each charge-discharge cycle. Washington's hydro-dominated grid differs from the grids where these benefits were studied.
- **"Jobs and tax revenue."** Construction jobs are temporary, and operating facilities employ few permanent staff. Public costs must be counted against tax revenue.
- **"Use specialized fire consultants" and "rely on NFPA 855 and UL 9540."** Expertise must be independent of developers and manufacturers. Fire codes govern spacing and testing. They do not evaluate off-site deposition, groundwater, food-chain exposure, or cleanup liability.

7. Emergency response capacity and land-use policy

King County Fire District 38, which has jurisdiction over the site, has formally opposed it, warning that a BESS fire could overwhelm the area's emergency resources. Eastside Fire & Rescue has stated it cannot confirm it is fully prepared for an incident of this scale. Battery facilities have exploded as well as burned:

- Surprise, Arizona (2019): an explosion injured firefighters.
- Beijing (2021): an explosion killed two firefighters.
- Otay Mesa, California (2024): the Gateway fire burned for days and forced evacuations.

The valley's evacuation routes are few: Snoqualmie Parkway, SR 202, SR 18, and I-90.

State and county policy point the same way:

- The Growth Management Act requires protection of rural character, critical areas, and groundwater (RCW 36.70A.070(5)), based on best available science (RCW 36.70A.172).
- EFSEC's statute calls for energy facilities with minimal adverse effects on the environment and state waters (RCW 80.50.010).
- King County protects the Snoqualmie Agricultural Production District and its aquifer recharge areas, yet allows BESS on nearly 97 percent of unincorporated land.
- The City of Sumner, which is building a 200 MW BESS, independently recommended excluding critical areas, wellhead protection areas, municipal watersheds, and wildlife conservation areas.

Requested studies: what the PEIS should analyze

I respectfully ask Ecology to include the following in the scope of the PEIS.

1. **Worst-case fire scenario.** Analyze full involvement of one or more enclosures burning over several days, not only a single-module failure. Identify which impacts cannot be mitigated below significance, consistent with WAC 197-11-794.
2. **Toxic plume dispersion modeling.** Model HF, hydrogen cyanide, carbon monoxide, and metal particulate under nighttime temperature inversions and valley terrain. Report concentrations at the nearest homes, schools, farms, and parks, at distances of 0.5, 1, 2, and 5 miles. Compare results to NIOSH IDLH and Acute Exposure Guideline Level (AEGL) thresholds.
3. **Deposition onto farms and the food chain.** Analyze deposition of nickel, cobalt, manganese, and fluoride onto cropland, pasture, home gardens, and livestock forage. Analyze plant and animal uptake, using the Moss Landing findings as a reference case.
4. **Baseline sampling.** Recommend that project-level review require pre-construction baseline sampling of soils, surface water, and every private well within a defined radius, so harm can be detected and proven.
5. **Firewater, PFAS, and groundwater pathways.** Quantify suppression-water volumes and chemistry for a multi-day event, including PFAS from batteries and suppressants. Map pathways to shallow aquifers, Critical Aquifer Recharge Areas, wellhead protection zones, private wells, and fish-bearing streams. Size containment for a full-facility event.
6. **Salmon, orca, and Tribal resources.** Analyze downstream effects on ESA-listed Chinook, Southern Resident orcas, and Tribal treaty and cultural waters, in consultation with affected Tribes.
7. **Cleanup cost and financial assurance.** Estimate worst-case response and remediation costs from real incidents, including Moss Landing's multi-year cleanup. Compare those costs with current insurance and bonding requirements. Evaluate MTCA liability when the operator is a single-project LLC. Recommend financial assurance scaled to stored energy (MWh), backed by a solvent parent or escrow, surviving sale or bankruptcy, with a defined process to compensate affected residents and farmers.
8. **Emergency response and evacuation capacity.** Assess local fire, hazmat, hospital, and HF-antidote capacity, firefighting water supply, and modeled evacuation times for surrounding populations, including schools. Treat inadequate capacity as a factor that disqualifies a site, not a later permit condition.
9. **Exclusion mapping and setbacks.** Map areas where utility-scale lithium-ion BESS should not be sited:
    - agricultural production districts
    - critical aquifer recharge and wellhead areas
    - areas dependent on private wells
    - shorelands, wetlands, and stream buffers
    - floodplains and seismic, landslide, and liquefaction zones
    - wildland-urban interface
    - communities with constrained evacuation routes.

    Recommend setbacks from homes, schools, parks, and wells based on plume modeling, scaled to MWh. Proximity to a substation must not count as suitability.

10. **Chemistry-specific analysis.** Analyze NMC, LFP, sodium-ion, iron-air, and flow batteries separately. Recommend that the chemistry and the specific product be fixed and disclosed before project review, with no later substitution.
11. **Full buildout and cumulative impacts.** Analyze the maximum energy a site can hold, including expansion and augmentation. Analyze clustering of facilities around substations and in single watersheds.
12. **Need, beneficiaries, and net emissions.** Require project reviews to identify the specific grid need, the offtaker, and the revenue source: reliability, market arbitrage, or new large loads such as data centers. Evaluate net emissions using Washington grid data rather than assumed peaker displacement.
13. **Alternatives.** Compare lower-risk alternatives under WAC 197-11-440(5):
    - industrial, brownfield, and previously disturbed sites
    - non-flammable or lower-hazard storage, including pumped hydro (such as the Goldendale project Ecology itself reviewed)
    - demand response, efficiency, distributed storage, and grid upgrades.
14. **Independence of data.** Disclose the funding source of every dataset and rely on reviewers with no financial ties to BESS developers or manufacturers.
15. **Local authority and timing.** State that the PEIS's protections are a floor, not a ceiling, for local governments. Share interim findings with EFSEC so projects like Cascadia Ridge are not approved before this analysis is complete.

Washington does not have to choose between clean energy and safe communities. I urge Ecology to use this PEIS to protect people, land, and water first. Please include this comment in the scoping record and notify me of the Draft PEIS.

Respectfully,

Megan Brocco

BS Environmental Engineering, Columbia University

36515 SE 56th ST, Fall City, WA 98024

brocco.megan@gmail.com