

C&I Hybrid Cooling Grid Forming ESS Safety Constraints V1.0

2025/09

Security Level:

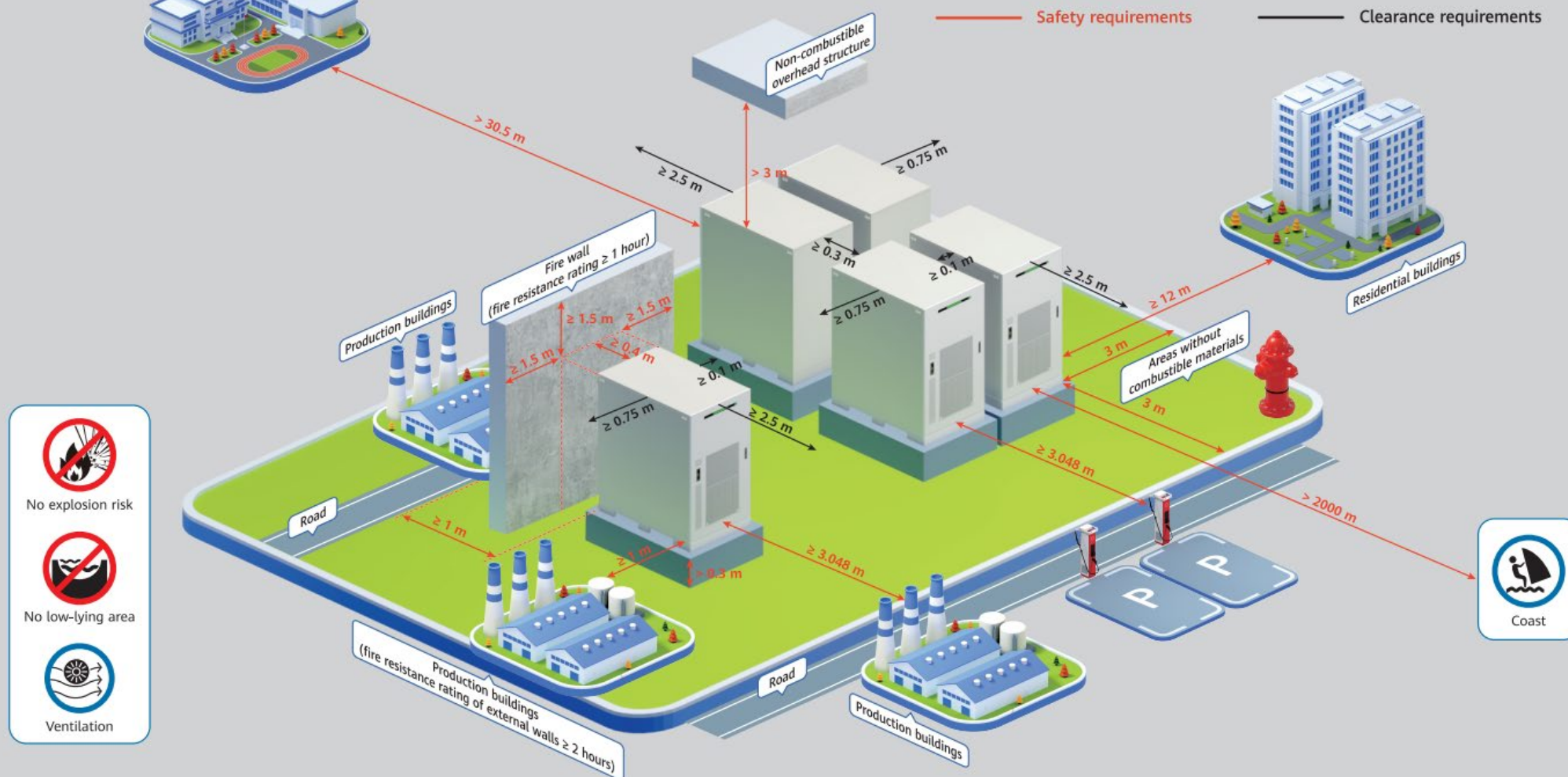


C&I Hybrid Cooling Grid Forming ESS Site Requirements

02 (2025-02-06)

Smart String ESS Site Requirements

Applicable product models: LUNA2000-(107-215) Series Smart String ESS



C&I Hybrid Cooling Grid Forming ESS safety constraints

Classifieds	Subitem	Detailed Constraints
Site Selection Requirements	Deployment Environment	The ESS can be installed only outdoors and do not install the ESS indoors .
		The energy storage system or power station must be installed in a well-ventilated environment without explosion risks . Avoid low-lying environment.
		There must be no combustible materials within 3 m of the ESS or the site to prevent fire from spreading. (Exemption: Single specimens of trees, shrubbery, or cultivated ground cover such as green grass, ivy, succulents, or similar plants used as ground covers shall be permitted to be exempt provided that they do not form a means of readily transmitting fire.)
		Transportation to the site shall be convenient and fire suppression facilities shall be reliable .
	Top Requirements	You are advised not to add any overhead structure above the ESS. If an overhead structure is necessary in special scenarios, the following conditions must be met: The distance between the overhead structure and the top of the ESS shall be >3 m . The overhead structure shall be non-combustible . If the overhead structure may be damaged in extreme cases, the Company shall not be liable for any damage to the overhead structure.
	Safe Distance	The distance between the ESS and residential buildings must be >=12 m , and the distance between the ESS and densely populated buildings such as schools and hospitals must be >30.5 m . If the distance does not meet the requirement, fire walls shall be installed between the ESS and the buildings.
		The safety distances between the ESS and buildings shall comply with local fire protection regulations or standards
		The ESS located outdoors must be at least 10 ft (3.048 m) away from lot lines, public ways, buildings, combustible materials, hazardous materials, high-piled stock, parking spaces, and other exposure hazards not associated with electrical grid infrastructure. If either of the following conditions is met, the distance between the ESS and the production building shall be permitted to be reduced to 3.28 ft (1 m) . In addition, clearance requirements for equipment transportation, installation, and maintenance shall be considered. There are 1-hour freestanding fire walls, extending 5 ft (1.5 m) above and extending 5 ft (1.5 m) beyond the physical boundary of the ESS installation. Non-combustible exterior walls with no openings or combustible overhangs are provided on the walls adjacent to the ESS and the fire resistance rating of the exterior walls complies with 2-hour fire resistance rating of ASTM E119 or UL 263. The distance between the exhaust device of an ESS and the heating and ventilation vents, air intake vents of air conditioners, windows, doors, unloading platforms, and fire sources of other buildings or facilities must be >=4.6 m .
	Salt fog and pollution requirements	The ESS shall not be installed in salt-affected or polluted areas because this will cause corrosion. The ESS shall be used in the following or better environments: Outdoor environment >2000 m away from the coast. You are advised not to use the ESS in an area within 2000 m of the coast. (If you need to use it, confirm with the vendor or the Company's engineers.) More than 3000 m away from heavy pollution sources such as smelteries, coal mines, and thermal power plants More than 2000 m away from medium pollution sources such as chemical, rubber, and electroplating industries More than 1000 m away from light pollution sources such as packing houses, tanneries, boiler rooms, slaughterhouses, landfill sites, and sewage treatment plants
	Anti-break-in	Security fencing: It is recommended that physical walls or fences be used for isolation and protection in the energy storage equipment area. The fences shall be equipped with a door lock and the recommended fence height is >2.2 m . Fire walls shall be permitted to be substituted for part or all of the fences, depending on the actual design plans.

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Classifieds	Subitem	Detailed Constraints								
Foundation Requirements	load bearing	The cabinet installation dimensions and load-bearing capacity requirements are met.								
	draining	Meet the local historical maximum rainfall drainage requirements.								
	heights	The foundation must be higher than the local historical maximum water level and at least 300 mm above the level ground.								
	flattened	The horizontal error of the contact surface between the equipment foundation and the cabinet is <=3 mm .								
其他要求	Storage charging	You are advised to use the ESS in a timely manner. If the ESS is stored for a long time or is not running, recharge the power periodically. Otherwise, the ESS may be damaged. The following table lists the maximum charge intervals. Charge the ESS promptly and calibrate the SOC to 50%. <table><tr><th>Storage Temperature (T)</th><th>Maximum Charge Interval^a</th></tr><tr><td>-35°C ≤ T ≤ +30°C</td><td>15 months</td></tr><tr><td>30°C < T ≤ 40°C</td><td>11 months</td></tr><tr><td>40°C < T ≤ 60°C</td><td>7 months</td></tr></table> Note a: ▪ The interval starts from the latest charge time labeled on the ESS packaging. ▪ This table lists the charging intervals when the SOC is 50%.	Storage Temperature (T)	Maximum Charge Interval ^a	-35°C ≤ T ≤ +30°C	15 months	30°C < T ≤ 40°C	11 months	40°C < T ≤ 60°C	7 months
	Storage Temperature (T)	Maximum Charge Interval ^a								
	-35°C ≤ T ≤ +30°C	15 months								
	30°C < T ≤ 40°C	11 months								
	40°C < T ≤ 60°C	7 months								
Insulation protection	Tools meet the insulation level and protection requirements.									
Commissioning	Fire Extinguishing Before Installation and Commissioning									
People	The personnel qualification meets the requirements of local laws and standards.									

Remarks: The Safety Constraints on Smart PV C&I ESS V2.0 is released this time. The R&D department will update this document based on the progress of the ESS industry and related research results.



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