Limited Warranty for RESU13 Battery Storage System

This limited warranty (hereinafter ‘Warranty’) specified below applies to LG Chem Lithium-ion battery and the Accessory Component (hereinafter ‘Products’) supplied by LG Chem, Ltd. (hereinafter ‘LG Chem’ or ‘Seller’) to End-user (hereinafter ‘Buyer’) through their Reseller.

Following warranty is provided for the below product.

Product Model	Serial Number
RESU13	EH048252P3S1BMAxxxxxxxxxx

1. Purpose

The primary purpose of this ‘Warranty’ is to clearly define the matters related to warranty policy of the ‘Products’.

2. Obligations

2.1 ‘Buyer’ should use and maintain the ‘Products’ as specified in the Attachment 1 ('Battery Technical Specifications') and Attachment 2 (‘Standard Conditions of Use’).

2.2 ‘Buyer’ shall comply with the manuals and precautions provided by ‘LG Chem’ (hereinafter referred to as 'Safety Documents') when using the ‘Products’. In addition, the ‘Products’ shall be used only for the purpose designated by 'LG Chem'.

3. Warranty Term

3.1 The warranty shall begin to take effect either (i) on the date of installation or (ii) twelve (12) months from the date of manufacture, whichever occurs first, and such warranty shall be valid for a period of ten (10) years.

4. Warranty

4.1 ‘LG Chem’ guarantees Energy Retention upon the earlier of the date the Warranty Term has expired or the Aggregate Energy Throughput referred in below table is reached, when the battery system is operated under normal use. ‘LG Chem' warrants the performance of the ‘Products’ shall begin to take effect either (i) on the date of installation or (ii) twelve (12) months from the date of manufacture, whichever occurs first.

Application	Energy Retention	Aggregate Throughput
Self-consumption, Back-up	80% at 10 years from warranty term commencement date	30MWh

The value of energy aggregate throughput and retention shall be measured on the following conditions by ʻLG Chem’, when warranty validation is required by ʻBuyer’.

Capacity measurement condition

- Ambient temperature: 25~30℃
- Initial battery temperature from BMS: 25~30℃
- Charging/discharging method
  - Charge: 0.2CC/CV, Cut-off current 0.05C at 58.8V
  - Discharge: 0.2CC, Cut off voltage 42V
  - Current and voltage measurement at battery side

5. Notification of Defect and Identification of Cause

5.1 The ‘Buyer’ shall promptly notify their Reseller or ʻLG Chem' if any of the ‘Products’ are found to be defective or if any quality-related problems are raised due to the defect. The same shall apply if the ‘Products’ do not meet the performance as described in Article 4.

5.2 If the ‘Buyer’ intends to raise a claim due to the quality defect of the ‘Products’, the ‘Buyer’ shall provide LG Chem with each of the following information.

(1) Proof of the purchase

(2) Symptoms of the defect and when it occurred

(3) Serial number of the ‘Products’

5.3 ‘LG Chem’ should promptly identify the defect notified by ’Buyer’, and repair or replace the defect under warranty by using an objective inspection method.

6. Replace or Repair

6.1 If 'LG Chem' is found to be liable for the defect of the 'Products' under Article 5, ‘LG Chem’ shall finally decide whether to (i) repair the defective ‘Products’, or (ii) replace the defective ‘Products’ with intact parts that are free of any defects and equal in value.

6.2 The warranty period for the repaired or replaced part shall be the remainder of the warranty period for the original parts.

6.3 ‘LG Chem' shall not indemnify or compensate for any damages unless otherwise explicitly specified herein.

6.4 The Warranty for defective ‘Products’ are only valid when they have been repaired or replaced by LG Chem qualified personnel.

In the event the Products are not available in the market anymore, LGC, at its option, may replace it with different kind of product with equivalent functions and performances or refund the remaining annually depreciated value of the purchase price of the Products during the Term of Performance Warranty as the Compensation Scheme below. The purchase price mentioned hereinabove means the list price actually paid by the Buyer for the purchase.

- Compensation Scheme -

- Residual value in EUR = purchasing price in EUR / 120 x (120 - Operation time after installation in month)
- No warranty of performance will be provided from the 121st month

7. General Exclusions

This Limited Warranty does not apply to any defect or performance failure resulting from any of the following.

- When the ‘Products’ are not manufactured by 'LG Chem'
- When the ‘Products’ are transported, stored, installed or wired improperly and in violation of the official installation manual.
- When the ‘Buyer’ disassembles or dismantles the 'Products' without prior consent of 'LG Chem'.
- When a third-party’s product or part is assembled or used in combination with ‘Products’ of 'LG Chem'.
- When the defect occurs or the scope of the defect expands due to improper repair of ‘Products’ carried out by non- approved technician by ‘LG Chem’.
- When a fault occurs in the ‘Products’ due to the willful misconduct or negligence of the 'Buyer'.
- When the defect occurs due to the misuse, faulty use, or negligent use of the ‘Products’.
- When the ‘Buyer’ violated Article 8.
- When the ‘Products” are used with an incompatible (Not Matched) inverter.
- When the ‘Products’ are used for purposes other than the Application under Article 4.
- When a claim is raised for the ‘Products’ after the warranty period specified in Article 3 and Article 4 has elapsed.
- When the scope of the defect has expanded because the 'Buyer’ did not immediately notify ‘LG Chem’ of the defect of the ‘Products’.
- When the ‘Products’ are affected by unusual physical or electrical stresses such as blackout, inrush current, lightning, flood, fire, incidental damage, or etc.
- When the defect occurs in the ‘‘Products’' due to force majeure events, such as war, riot, civil war, natural disasters, etc., that ‘LG Chem’ cannot be held responsible for.
- When the ‘Products’ are externally damaged but its performance and function is not affected.

- When the 'Buyer' violates applicable laws or regulations of the state, county or local government while using the ''Products''
- Other defects not attributable to 'LG Chem'

8. Special Provisions

The 'Products' covered by this Warranty shall not be used for the facilities such as radiation control areas, nuclear reactors, facilities related to nuclear safety, facilities that use nuclear power, and other related facilities as well as the facilities that potentially may have direct patient contact.

The 'Products' covered by this Warranty may be used for life-support equipment only with the prior written consent of 'LG Chem.'

9. Contact

Should 'Buyer' have any questions or want to file a claim, 'Buyer' shall contact 'LG Chem' using the following contact information.

LOCATION	TELEPHONE	E-MAIL
HEADQUARTERS		essservice@lgchem.com
UNITED STATES	+1 888 375 8044	CSNorthAmericaESS@lgchem.com
EUROPE / UNITED KINGDOM (EXCEPT ITALY)	+49 (0) 6196 5719 660	lgchem@e-service48.de
ITALY	+39 (0)2 9475 9742	lgchemresu@kndpoweritalia.com
AUSTRALIA / NEW ZEALAND	+61 1300 178 064	ESSserviceAU@lgchem.com

10. Applicable law

The Warranty is subject to the law of the country or state or jurisdiction in which the 'Buyer' resides. The 'Buyer' is entitled to a replacement or refund for a major failure. The 'Buyer' is also entitled to

have the ‘Products’ repaired or replaced if the ‘Products’ fail to be of acceptable quality and the failure does not amount to a major failure. This Warranty only applies to the ‘Buyer’ who has purchased the ‘Products’ for his or her own use.

11. Applicable Countries

This warranty is applicable only in the countries listed as below, and ‘LG Chem’ is not responsible for any claims against this Warranty made in and/or based on the event occurred in any countries other than listed herein.

- Germany

Attachment 1. ‘Battery Technical Specifications’

Attachment 2. ‘Standard Conditions of Use’

Attachment 1. Battery Technical Specifications

Table 1.1 Specification Overview of RESU13

Items			RESU13
Electrical	Cell		JH3
	Nom. Voltage/ Operating Voltage Range		51.8 V / 42 ~ 58.8V
	Total Energy Capacity		13.048 kWh
	Max. Power / Max. Current		5 kW / 119 A
	Peak Power (for 3sec) / Peak Current (for 3sec)		7 kW / 166.7 A
			Peak Current excludes repeated short duration (less than 3 sec.) of current pattern.
	Peak Power for Backup Mode		11kW for 3sec
	Standard Charging Condition (CC)	Charging Current	56.7 A
		Cut off condition (58.8 V)	12.6A @ 58.8V, Ambient 25℃
	Std. Discharging Condition (CC)	Discharge Current	56.7 A
		Cut off Condition	Discharge Cut off voltage : 42 V
	Battery pack Round-trip Efficiency		>95% (under specific condition)
	Communication Interface		CAN 2.0b Standard ID (500kbps)
	DC Disconnect		Circuit Breaker, Contactor, Fuse
Environmental	Installation location		Indoor(Wall-mounted) / Outdoor (if installed outdoors, do not allow the battery pack to be exposed to direct sunlight and moisture)
	Operating Temperature Range		-10 ~ 50 ℃
		Optimal Range	15 ~ 30 ℃
	Storage Temperature Range		1. - 30℃ ~ 60℃ (Acceptable for max 7 days) 2. - 20℃ ~ 45 (max 6 months)
	Operating Humidity Range		5 ~ 95%, Non Condensing
	Altitude		Max. 2,000m
	Cooling Strategy		Natural convection
Reliability & Certification	Safety	Cell	UL1642
		Battery Pack	CE/ FCC / RCM / TUV (IEC 62619), UL1973
	Hazardous Materials Classification		Class 9
	Transportation		UN38.3 (UNDOT)
	Ingress		IP55

Attachment 2. Standard Conditions of Use

2.1 Operating Condition

The 'Products' shall be operated in accordance with the basic operating conditions (Table 2.1)

Table 2.1 Basic operating condition

Items		RESU13
Depth of Discharge		95% (User DoD 100%)
SOC	Min. SOC	3% (User SoC 0%)
	Max. SOC	98% (User SoC 100%)

2.2 Storage Condition

2.2. 1 When the storage humidity falls outside the range, corrosion may occur or insulation performance may be affected.

Table 2.2 Battery Storage Conditions

Battery Storage Conditions	
Storage Temperature Range	1. - 30℃ ~ 60℃ (acceptable for 7 days) 2. - 20℃ ~ 45 (acceptable for 6month)
Storage Humidity Range	5 ~ 95 % RH (Non Condensing)