



ESS Battery Division

Headquarters

Korea

PARC1, 108, Yeoui-daero, Yeongdeungpo-gu, Seoul, Republic of Korea, 07335  
e-mail : jadenlee@lgensol.com

Local Contacts

USA

Peter Gibson

1857 Technology Drive, Troy, MI 48083, USA  
Tel. : +1-248-205-9066  
e-mail : pgibson@lgensol.com

Europe

Joern Juergens

Otto-Volger-str. 7C, 65843 Sulzbach (Taunus), Germany  
Tel. : +49-6196-5719-617  
e-mail : jjurgens@lgensol.com

Japan

Hideki Morita

14F, Kyobashi Trust Tower, 2-1-3, Kyobashi, Chuo-ku, Tokyo, 104-0031, Japan  
Tel. : +81-3-6369-8580  
e-mail : morita@lgensol.com

China

Cui YunHe

2707,Block B,The Platinum Towers,No.1,7th Tairan Rd., Futian District, Shenzhen, P.R.China  
Tel. : +86-755-23960202-131, +86-13923424292  
e-mail : cuiyunhesz@lgensol.com

India

Prashant Kumar

5th Floor, Building No. 8, Tower C, DLF Cyber City, Phase II, Gurgaon-122002 (Haryana), India  
Tel. : +91-124-469-2600, Direct : +91-124-4692639,  
e-mail : prashant17@lgensol.com

Australia

Philip Crotty

Unit 12, 35 Dunlop Rd, Mulgrave, VIC 3170  
Tel. : +61-1300-178-064  
e-mail : philipcrotty@lgensol.com

Company Websites

LG Energy Solution Website : [www.lgensol.com](http://www.lgensol.com)  
LG Energy Solution ESS Battery Website : [www.lgessbattery.com](http://www.lgessbattery.com)

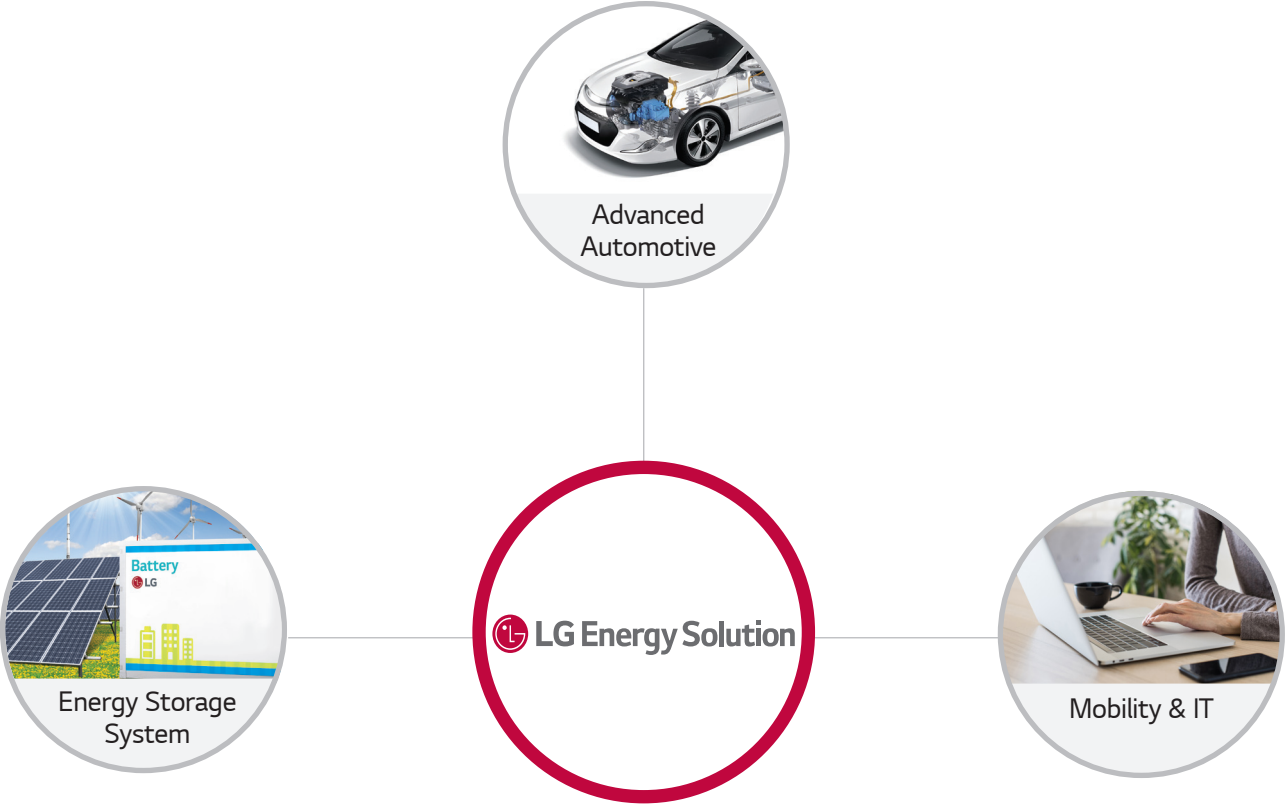


CHANGE YOUR ENERGY  
CHARGE YOUR LIFE

ADVANCED BATTERIES  
FOR ENERGY STORAGE

# Introducing LG Energy Solution

## LG Energy Solution at a Glance



Foundation	1947 *Dec. 20 LG Energy Solution spinoff	Employees	23,344
Headquarters	Seoul, Korea	Sales Revenue	USD 10.5B

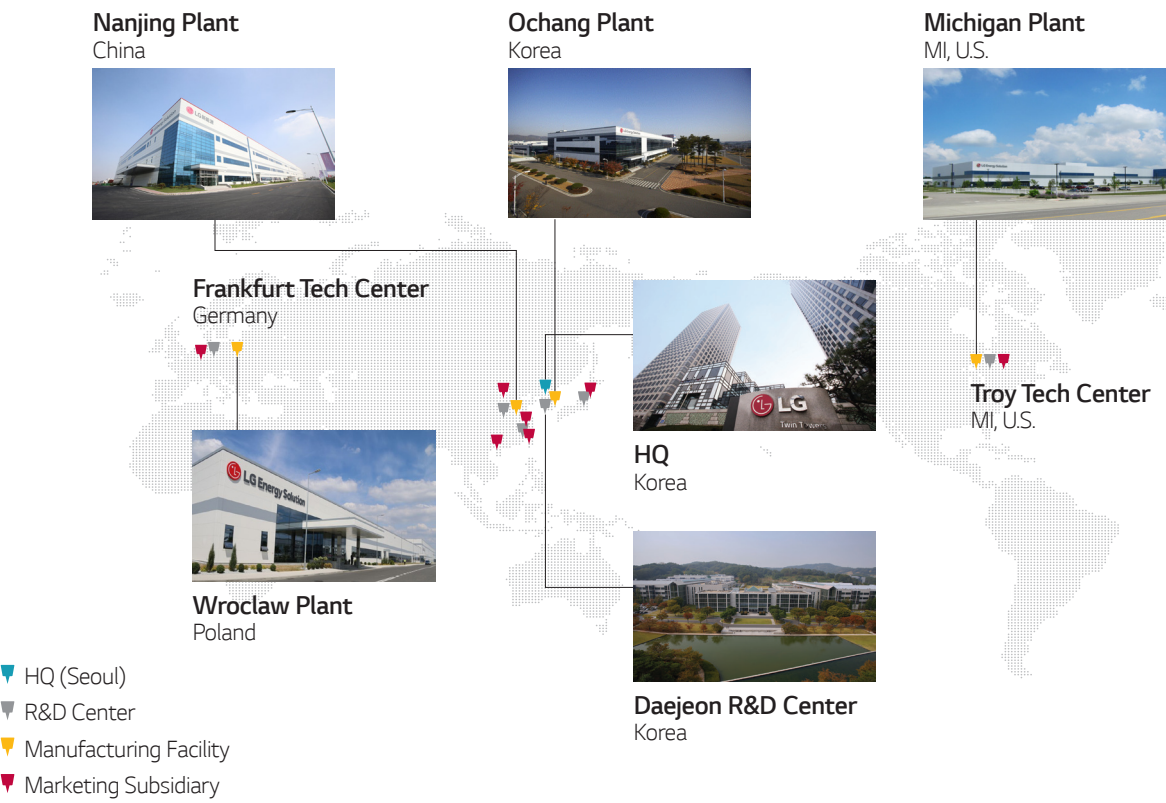
## Energy Solutions

With 26 years of experience in successfully delivering products and solutions to customers in the global energy sector, LG Energy Solution is recognized as the industry leader in Lithium-ion batteries.

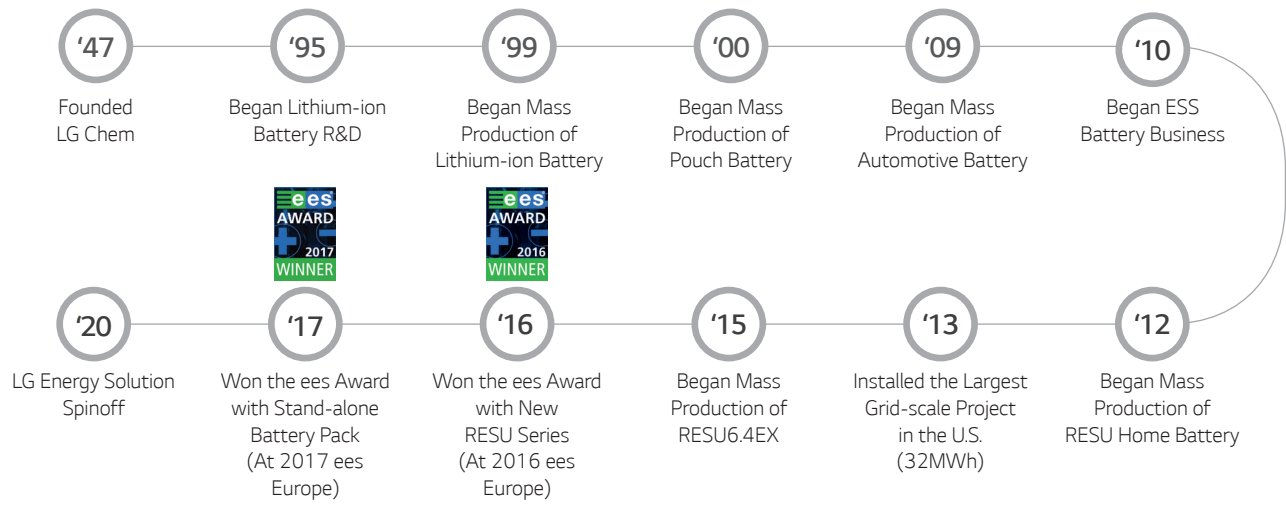


## Global Operation of Energy Solutions

LG Energy Solution is successfully implementing rapid go-to-market strategies across its wide range of global networks. By locating manufacturing plants in four strategic locations of Korea, China, the U.S., and Poland, LG Energy Solution supplies batteries to meet the needs of local customers in the most efficient and timely manner.



## Business History of Energy Solutions



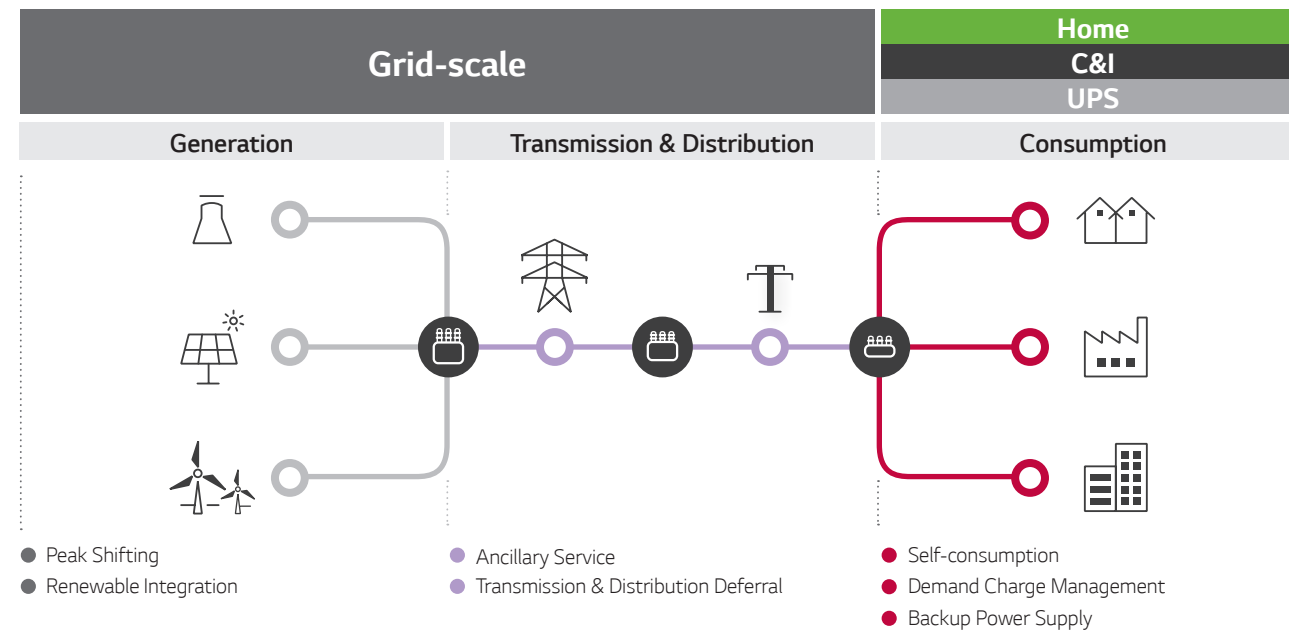
\* The ees Award is one of the most prestigious awards presented annually at ees Europe, the largest exhibition for batteries and energy storage systems in Europe, with the purpose to pay tribute to pioneering products and solutions for energy storage system.

## ESS Solutions

# Total Solutions for ESS (Energy Storage System)

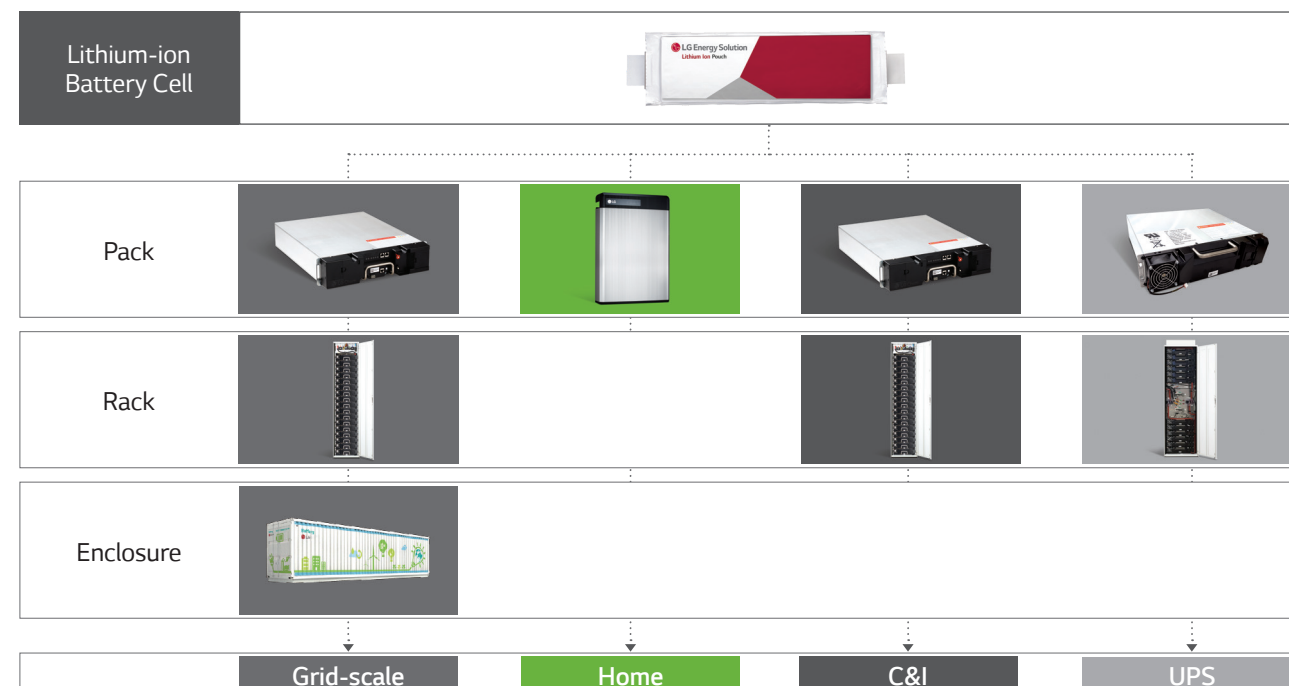
## Applications of ESS

ESS (Energy Storage System) provides solutions for applications throughout power supply systems including Grid-scale, Home, C&I (Commercial and Industrial), and UPS (Uninterruptible Power Supply).



## Product Portfolio

LG Energy Solution offers a wide variety of products, such as Battery Packs, Rack, and Enclosure that allow our customers to source total battery solutions.

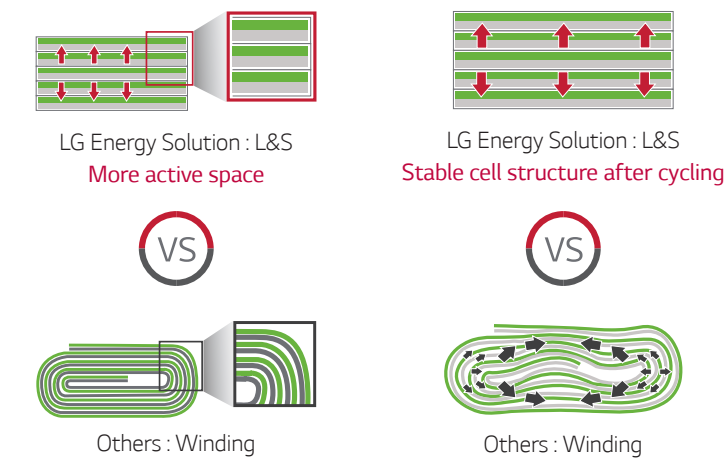


## Key Strengths

### Lithium-ion Battery Cell

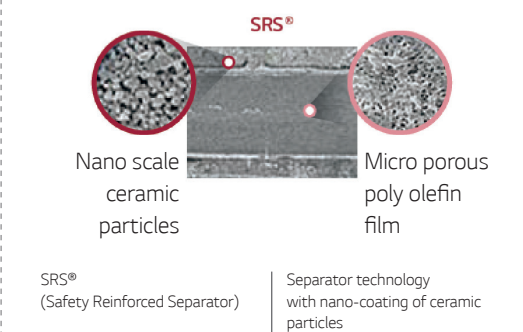
#### Compactness & Long Lifespan

LG Energy Solution's L&S (Lamination & Stacking) process minimizes dead space, enables higher energy density, and enhances the sustainability of cell structures.



#### Safety

LG Energy Solution's SRS® (Safety Reinforced Separator) increases the mechanical and thermal stability of battery cells.

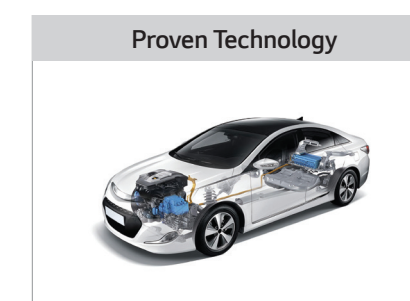


## Unsurpassed Experience and Expertise

LG Energy Solution is a reliable battery solution partner with extensive field experience and technical expertise.



LG Energy Solution, which was LG Chem before spin-off, features world class battery technology. It made possible by 70 years of expertise in chemicals



LG Energy Solution is the global leading supplier of Lithium-ion batteries for electric vehicles.



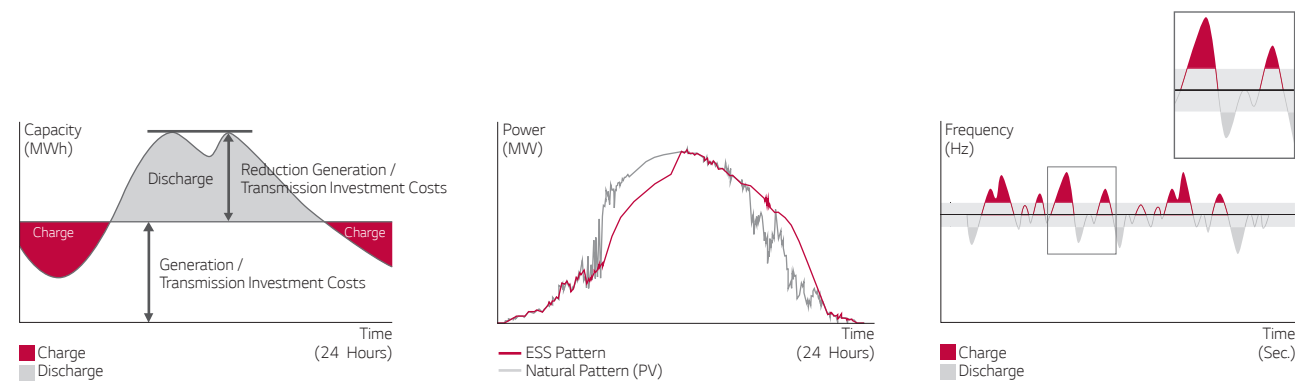
Since 2010, LG Energy Solution has installed or been awarded ESS projects for a wide range of applications.



## ESS Solutions

# Grid-scale Battery

For stabilizing the grid, a grid-scale battery provides capabilities such as peak shifting, renewable integration, and frequency regulation. With our world-leading Lithium-ion battery technology, LG Energy Solution offers advanced battery systems for grid-scale ESS applications.



## Peak Shifting

- Charge during off-peak times
- Discharge during peak times

## Renewable Integration

- Stabilize the intermittent renewable power by alternately charging and discharging

## Frequency Regulation

- Charge when grid frequency increases
- Discharge when grid frequency decreases

## Product Lineup

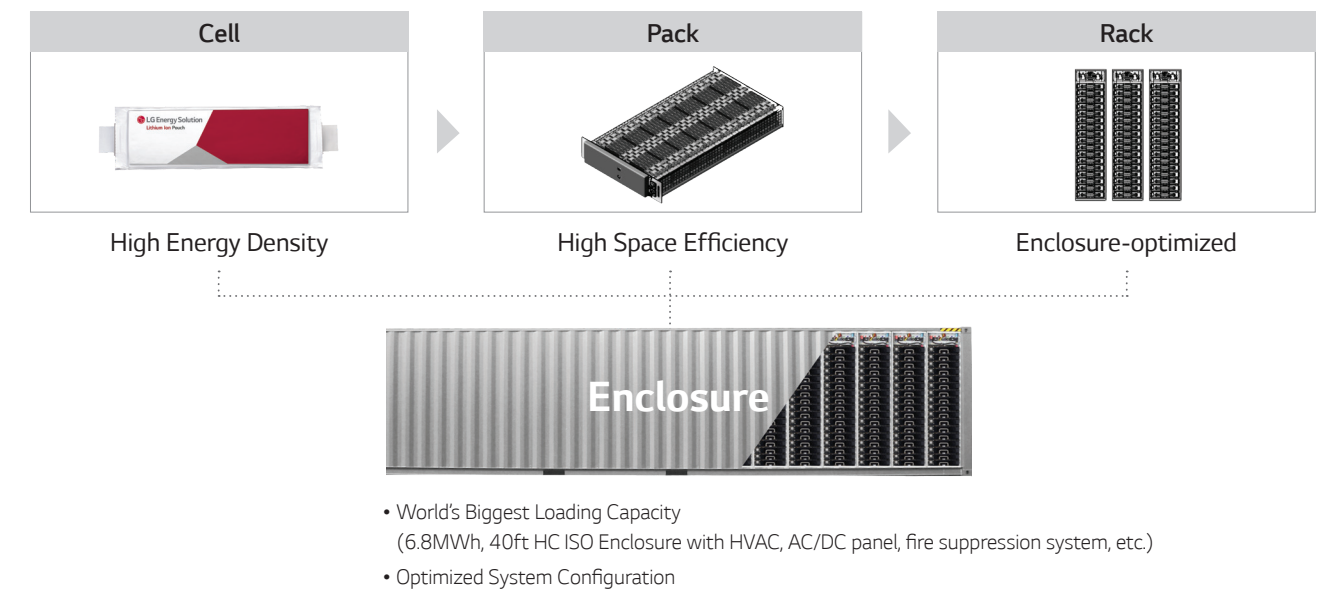
LG Energy Solution offers two product lineups highly optimized for grid-scale customers' requirements.



## Key Features

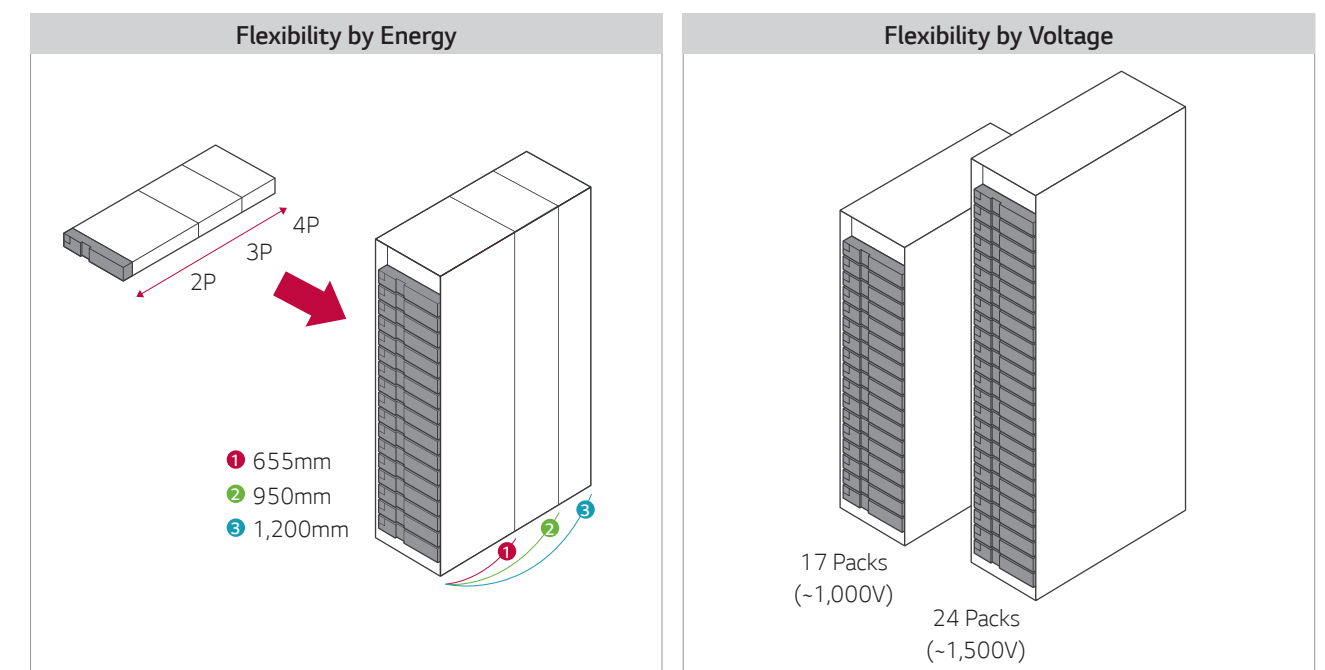
### System Optimization

LG Energy Solution features a highly optimized battery system design which enables high energy density.



### Diverse Product Options

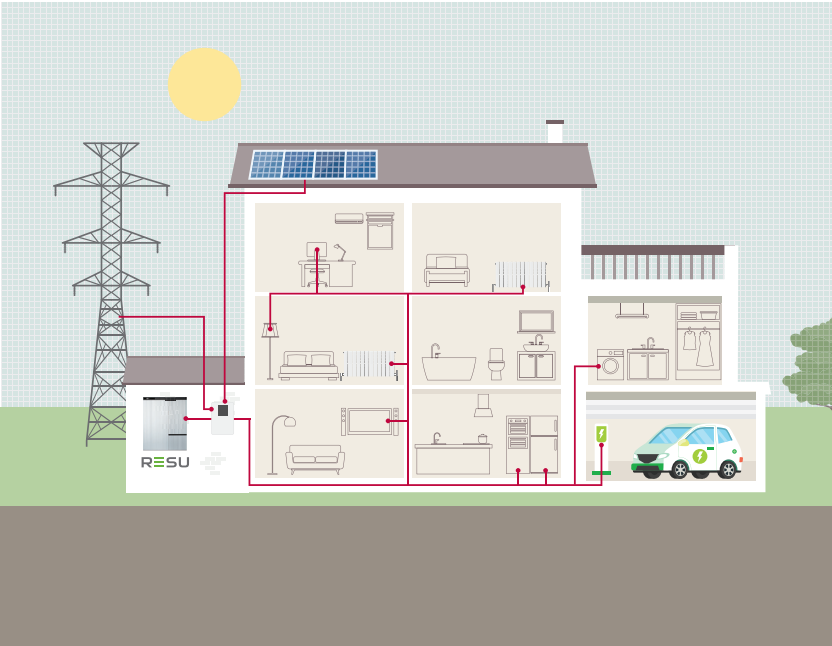
LG Energy Solution offers a range of product options to optimally meet our customers' needs for energy, footprint and voltage.



ESS Solutions

# Home Battery

A home battery can store surplus energy generated from rooftop photovoltaic panels for use when needed. When the sun has set, energy demand is high, or there is a black-out, you can use the energy stored in your home battery to meet your energy needs at no extra cost. In addition, a home battery helps you pursue the goal of energy self-consumption and ultimately energy-independence.



### Electricity Bill Saving

- Charge during off-peak times
- Discharge during peak times

### Self-consumption

- Store solar energy generated from photovoltaic panels for the future use

### Emergency Power Backup

- Discharge during a black-out, functioning as backup power

## Key Features



### Compact Size & Space Saving

The compact and sleek design of the RESU allows you to place it anywhere you want, both indoors and outdoors.



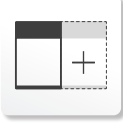
### Reliable Performance

The RESU provides reliability for your home with its industry leading longevity.



### Proven Safety

The safety of LG Energy Solution's lithium-ion battery is proven in the automotive and ESS markets.



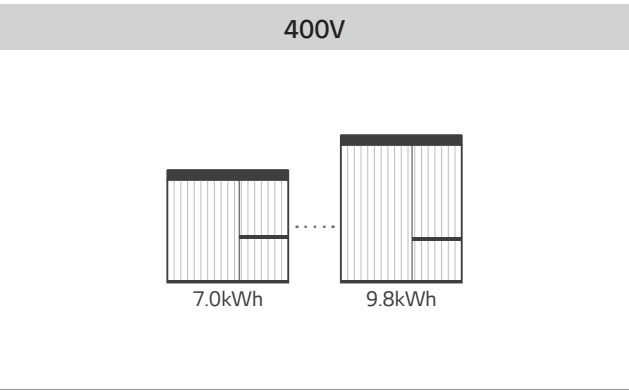
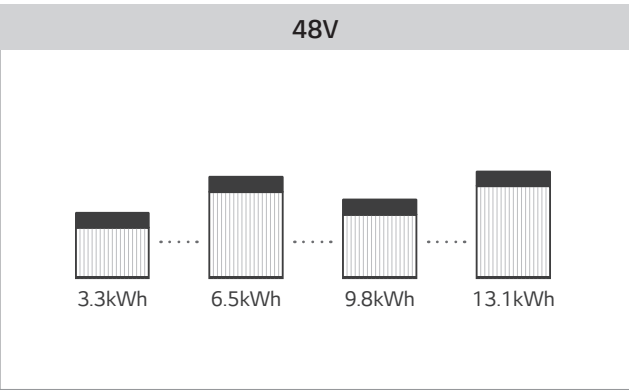
### Expandable at Need

The RESU models can be combined up to 2 units to increase energy capacity.

## Product Lineup

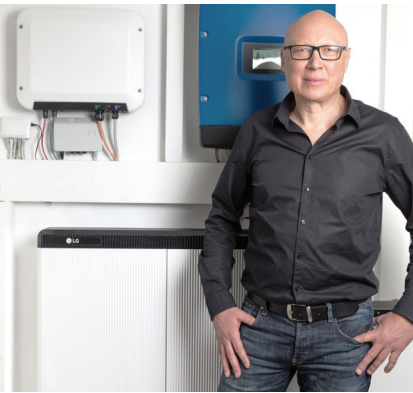
LG Energy Solution offers six home battery models in two product lineups to fulfill diverse capacity and voltage needs of homeowners.

# RESU



RESU Plus is an expansion kit specially designed for 48V models of the RESU series.  
Number of expandable battery units : Up to 2EA

## Customer Testimonials



### Remarkable Self-sufficiency

*"The remarkable result one year after completion and move-in : up to 90 percent self-sufficiency"*  
- Jörg Erstling, Germany




### Simple Installation & Sleek Design

*"The LG Energy Solution RESU10H was easy to install and looks good. It's not overly intrusive, and it is a real conversation starter"*  
- Stephen Young, Australia

# Specifications

## Grid-scale Battery



Long Duration & Energy

Long-duration application  
with continuous power supply (≥1 hours)

Pack



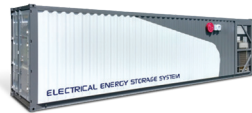
Models	M48145P5B (2P)	M48218P5B (3P)
Energy [kWh]	7.4	11.2
Capacity [Ah]	145	218
Nominal Voltage [V]	51.4	
Voltage Range [V]	42.0~58.8	
Dimension [W x H x D, mm]	445 x 110 x 620	445 x 110 x 915
Weight [kg]	46	68

Rack



Models	R1000 (17P)		
	M48145P5B	M48218P5B	M48290P5B
Energy [kWh]	126.6	189.9	253.2
Capacity [Ah]	145	218	290
Nominal Voltage [V]	873		
Voltage Range [V]	714~1,000		
Dimension [W x H x D, mm]	520 x 2,267 x 655	520 x 2,267 x 950	520 x 2,267 x 1,200
Weight [kg]	905	1,305	1,680

Enclosure



Models	40ft HC ISO Enclosure
	M48218P5B
	Unmanned
Energy [MWh]	6.8
System Voltage [V dc]	714~1,000
Dimension [W x H x D, m]	12.2 x 2.9 x 2.5
Weight [ton] (incl. battery)	60

(Enclosure system design can be changed according to customer requirements)

Pack



Models	M48290P5B (4P)
Energy [kWh]	14.9
Capacity [Ah]	290
Nominal voltage [V]	51.4
Voltage Range [V]	42.0~58.8
Dimension [W x H x D, mm]	445 x 110 x 1,162
Weight [kg]	89

Rack



Models	R1400 (24P)
	M48290P5B
Energy [kWh]	357.5
Capacity [Ah]	290
Nominal voltage [V]	1,233
Voltage Range [V]	1,008~1,411
Dimension [W x H x D, mm]	520x3,150x1,200
Weight [kg]	2,407



Models	TR1300 (22P)
	M48290P5B
Energy [kWh]	327.7
Capacity [Ah]	290
Nominal voltage [V]	1,130
Voltage Range [V]	924~1,294
Dimension [W x H x D, mm]	1,040x1,745x1,200
Weight [kg]	2,350

Grid-scale Battery



Short Duration & Power

short -duration applications with fast response  
high power supply ( < 1 hours)

Pack



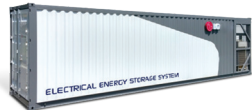
Models	M4864P6B (1P)	M48128P6B (2P)
Energy [kWh]	3.3	6.6
Capacity [Ah]	64	128
Nominal Voltage [V]	51.5	
Voltage Range [V]	42.0~58.8	
Dimension [W x H x D, mm]	445 x 110 x 344	445 x 110 x 620
Weight [kg]	28	47

Rack



Models	R1000 (17P)	
	M4864P6B	M48128P6B
Energy [kWh]	56.0	112.1
Capacity [Ah]	64	128
Nominal Voltage [V]	876	
Voltage Range [V]	714~1,000	
Dimension [W x H x D, mm]	520 x 2,267 x 425	520 x 2,267 x 655
Weight [kg]	584	924

Enclosure



Models	40ft HC ISO Container
	M48128P6B
Energy [MWh]	4.0
System Voltage [V dc]	714~1,000
Dimension [W x H x D, m]	12.2 x 2.9 x 2.5
Weight [ton] (incl. battery)	50
Ambient Temperature [°C]	-20 ~ 50
Communication	CAN2.0B, Modbus TCP/IP

(Enclosure system design can be changed according to customer requirements)

Home Battery



48V



Models	RESU3.3	RESU6.5	RESU10	RESU13
Total Energy [kWh] <sup>1)</sup>	3.3	6.5	9.8	13.1
Usable Energy [kWh] <sup>2)</sup>	2.9	5.9	8.8	12.4
Capacity [Ah]	63	126	189	252
Nominal Voltage [V]	51.8			
Voltage Range [V]	42.0~58.8			
Dimension [W x H x D, mm]	452 x 403 x 120	452 x 656 x 120	452 x 484 x 227	452 x 626 x 227
Weight [kg]	31	52	75	99
Enclosure Protection Rating	IP55			
Communication	CAN2.0B			
Certificates	Cell	UL1642		
	Product	UL1973 / TUV (IEC 62619) / CE / FCC / RCM		TUV(IEC 62619)/CE/FCC/RCM

1) Total Energy is measured at the initial stage of battery life under the condition as follows : Temperature 25°C

2) Usable Energy is based on battery cell only

Compatible Inverter Brands : Goodwe, Ingeteam, SMA, Selectronic, Solaredge, SolarX, Solis, Sungrow, Victron, Viessmann, Western co –  
More brands to be added

400V



Models	RESU7H		RESU10H	
	Type-R	Type-C	Type-R	Type-C
Total Energy [kWh] <sup>1)</sup>	7.0		9.8	
Usable Energy [kWh] <sup>2)</sup>	6.6		9.3	
Capacity [Ah]	63		63	
Voltage Range [V]	350~450	430~550	350~450	430~550
Dimension [W x H x D, mm]	744 x 692 x 206	744 x 907 x 206	744 x 907 x 206	744 x 907 x 206
Weight [kg]	75	87	97	99.8
Enclosure Protection Rating	IP55			
Communication	RS485	CAN2.0B	RS485	CAN2.0B
Certificates	Cell	UL1642		
	Product	TUV (IEC 62619) / CE / FCC / RCM	TUV (IEC 62619) / CE / RCM	UL1973 / TUV (IEC 62619) / CE / FCC / RCM

1) Total Energy is measured at the initial stage of battery life under the condition as follows : Temperature 25°C

2) Usable Energy is based on battery cell only

• Noise Level : < 40dBA

Compatible Inverter Brands : Fronius, Huawei, SMA, Solaredge, Solis, Sungrow – More brands to be added

Telecom Backup Solution  
/ Residential Pack



Models	M4863P3S	M48126P3S
Energy [kWh]	3.3	6.5
Capacity [Ah]	63	126
Nominal Voltage [V]	51.8	51.8
Voltage Range [V]	42.0-58.8	42.0-58.8
Dimension[WxHxD,mm]	445 x 110 x 339	445 x 110 x 587
Weight [kg]	24	44

UPS Backup Solution



Models	UPS Rack		
	12P (6S2P)	10P	10P
	M7830P7B	M4864P6B	M48128P6B
Energy [kWh]	28.0	33.0	65.9
Continuous Power [kW]	250	115	132
Nominal Voltage [V]	466	515	515
Voltage Range [V]	397-523	420-588	420-588
Dimension[WxHxD,mm]	520 x 2,292 x 500	600 x 2,000 x 650	600 x 2,000 x 800
Weight [kg]	480	390	625

Global Reference (Grid-scale)

LG Energy Solution has installed or been awarded over 14GWh of grid-scale projects since the launch of our ESS business.

> 14.8 GWh  
(As of December 2020)

World-leading Grid-scale battery supplier with extensive experience and proven reference projects

\* Cumulative amount of installed / awarded projects

