

Li-ion Battery of BESS Safety in Korea

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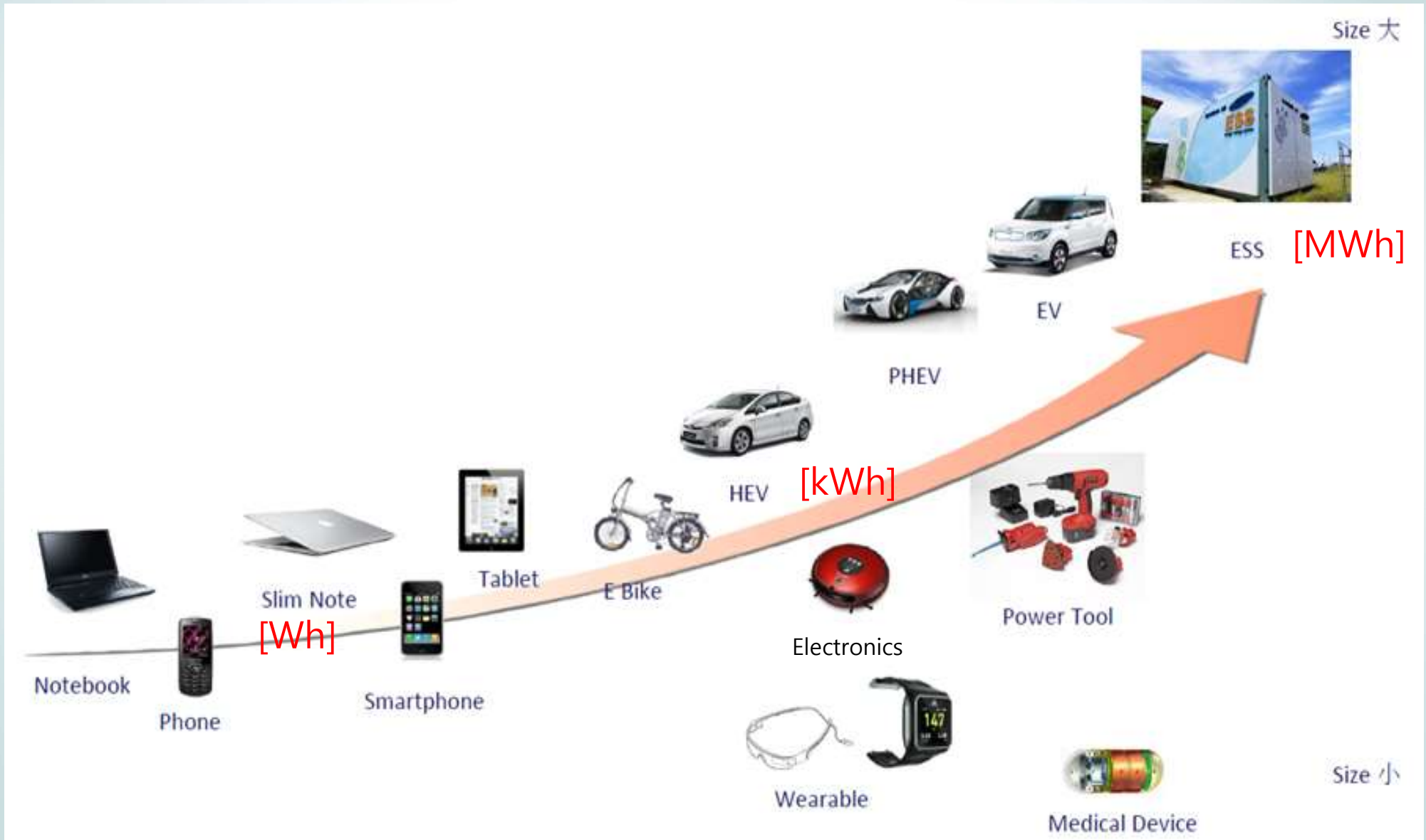
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KBIA Korea Battery
Industry Association

KORBA Battery R&D
Association of Korea

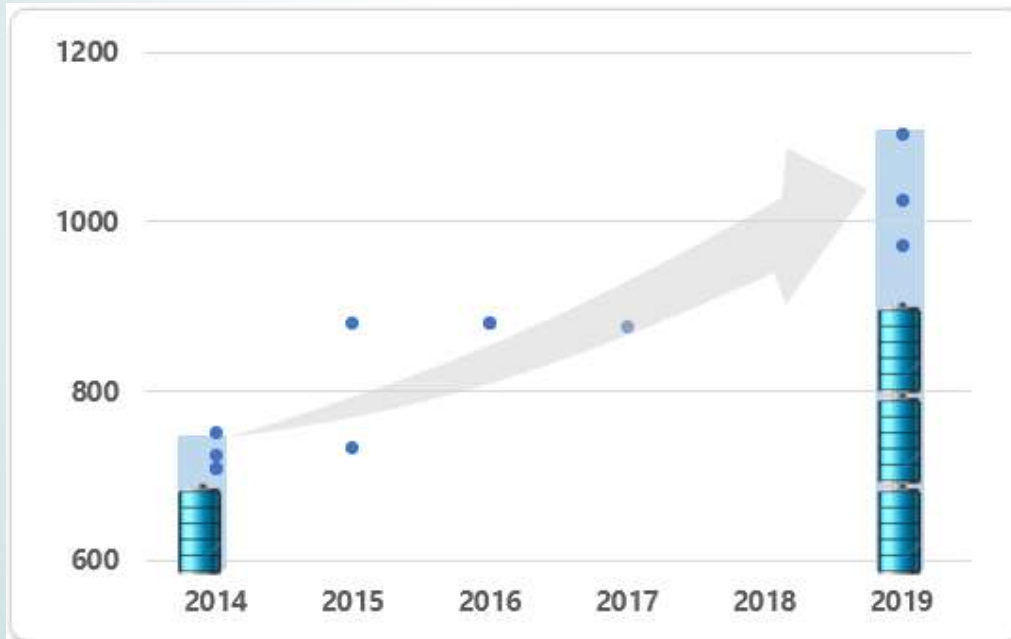


Battery application expansion “IT → EV → ESS”

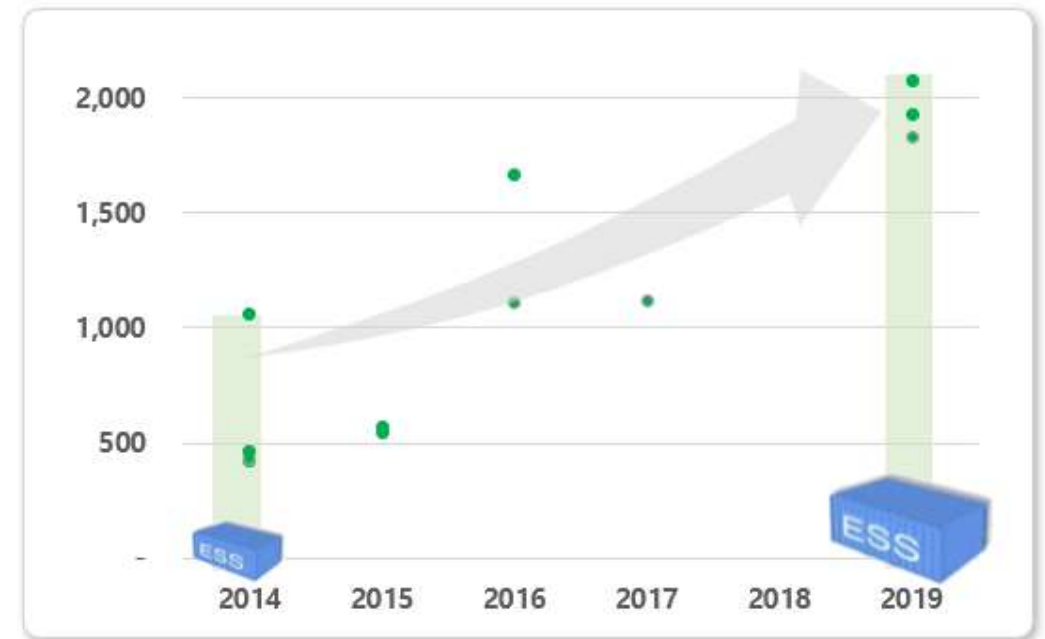


BESS Voltage & Capacity

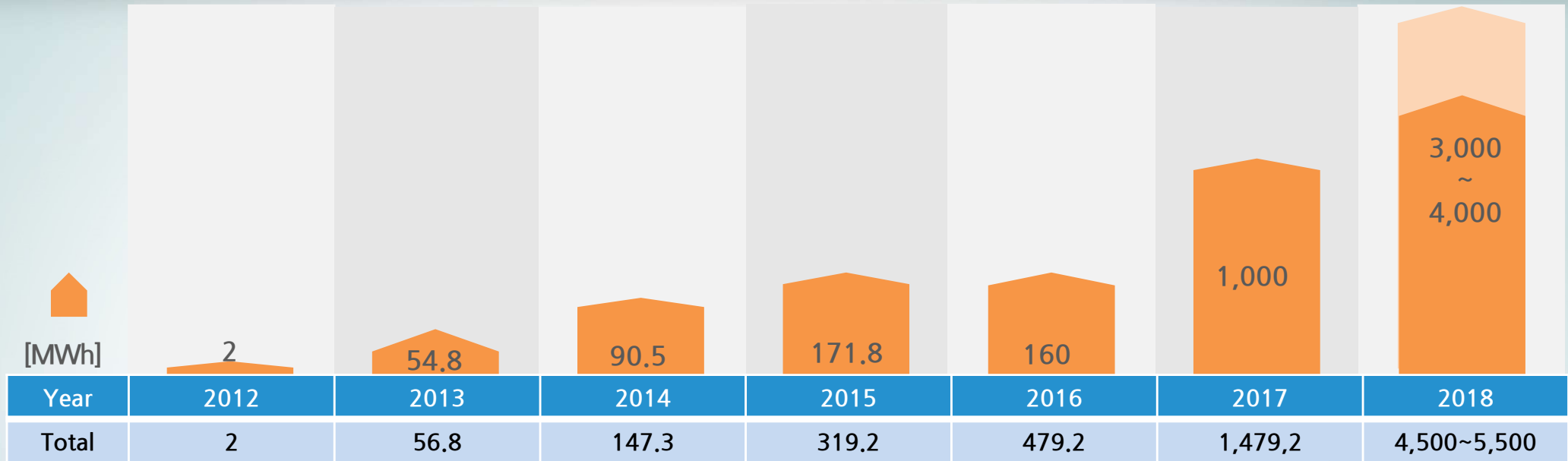
ESS System Voltage (V)



ESS System Power (kWh)



High Voltage System after 2018



ESS Subsidies Program '13 ~ '17 (Smart Grid, Korea Energy Agency)

Renewable energy + ESS (Korea Energy Agency)

Frequency Regulation ESS '14~ (KEPCO)

Wind Turbine with ESS(REC +) '15~ (Korea Energy Agency)

Transformation ESS '16~ (KEPCO)

New Energy industry for Province (KEA)

ESS Emergency Power

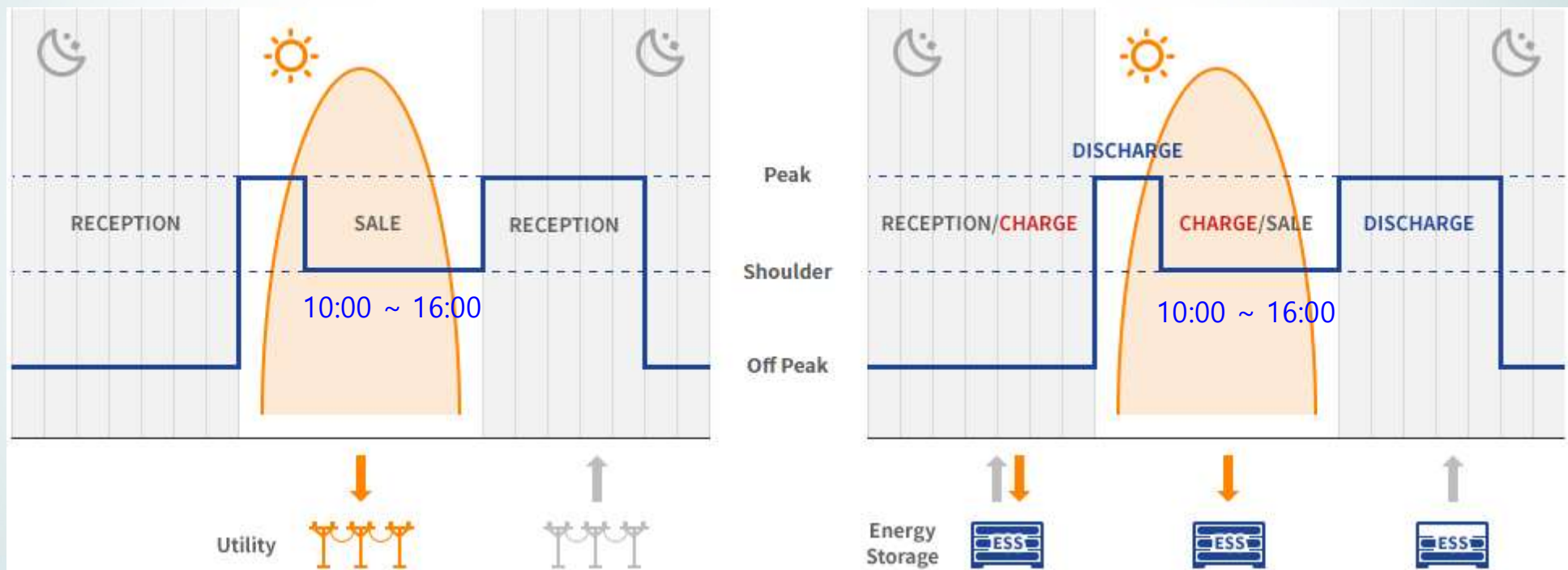
Public Building '17~

PV +ESS REC+ '17 ~

From Subsidies, Incentive program to Regulation

Renewable Energy + ESS, Additional REC '16 ~ (Korea Energy Agency)

PV + ESS to use transmission line for 2 times



Incentive program for Discharge capacity by BESS after 16:00

1. Production Standard

- KS for BESS system
- Safety Certification for Battery, PCS, BESS System
- Association Standards for BMS H/W, S/W

2. Installation Standard

- Location limited : Below 600kW (Indoor)
- Safety device : Surge Protection Device
- Monitoring System, Black Box

3. Operation & Management

- SOC limited
- Operation conditions(Temp. Humidity, Dust)

4. Fire Standards

NFPA 1, Fire Code, Chapter 52

NFPA 70, National Electrical Code, Article 706

NFPA 855, Standard for the Installation of Energy Storage Systems

NFPA 110, Standard for Emergency and Standby Power Systems

NFPA 111, Stored Electrical Energy Emergency and Standby Power Systems

SOC, regulation & Fire Code

