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INTEGRATED SOLAR, LITHIUM-BATTERY & EV COMPANY

Battery Sizing PPT

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1. Load Determination
2. Voltage Finalization
3. Current Details
4. Environment Condition
5. Battery Sizing

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1

Load Determination

- ★ EV
- ★ Solar
- ★ UPS

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Voltage Finalization

- ★ Motor Rating
- ★ Controller rating
- ★ System Rating (Voltage Window)

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Current Details

- ★ Peak Current (time)
- ★ Continuous Current (time)
- ★ Backup time requirement; Mileage

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Environment Condition

- ★ Operating temperature
- ★ Discharge time (day or night)
- ★ Availability of AC

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5

Battery Sizing

Battery Sizing

- Battery sizing depend on points discussed above like load, voltage, current, temperature
- Lithium battery is measured in kilo watt hr(KWH)
- For determining kwh we need to know voltage and ampere hour i.e for eg. 48V 24AH (48*24 = 1152) which is 1.152kwh
- Now for sizing depth of discharge (DOD) is important i.e for eg a 100Ah if discharge up to 80Ah then it said 80%DOD for that pack
- As we already know DOD is important for life cycle of pack it is decided as per longevity required by customer by as per theory 80% DOD is ideal.
- If we are aware of voltage, current and back up time just multiply current and back up time eg (10A load * 10Hrs back up = 100AH) is minimum required, Just add 20% capacity as DOD is only 80% , that means u need 120AH battery pack.
- In case of high operating temp like 50 degree and above add another 20% for long life, other wise battery will degrade faster.

Thank You!

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