Electronic signature	IP address	Date Time
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Questions/Answers

Q 1) I herby affirm that I have viewed the class "Battery Energy Storage in Renewable Energy Conversion System" in its entirety. I have already or will shortly compete 1 to 2 hours of self study, research, reading, reflection and/or application of the concepts/skills presented using the AIU online library or other mediums.

A 1) Yes

Q 2) Provide a short summary of the concepts or topics you learned about today" (minimum 300 characters)

A 2) electrical grid comprise of genration,transmission line ,distribution lines and consumption.It is learnt that generated power must equal load consumption.In a generating system power is generated from generators to achine side convertors to consumption to grid side convertors to measurent instruments to control systems to protection and finally injections.Renewable sources of energy includes solar,wind,hydro ,biomass,geotheral and tidal .Challenges and issues pertaining to renewable energy are uncertainty,flactuations,power density,power quality,power loses and maturity.For renewable energy to reach consummer some mitigation have to be met such as contol statergies,historical and predictive anaysis and load forecastings.There two types of batteries ,primary and secondry baterries .Batteries have various applications which includes energy abrbitration,peak shaving,load following,voltage support,frequent regulation,power quality,power reliability and renewable energy time shift.Important concerpts about baterries includes state of charge,depth of charge,energy density,power density,poer rating,lifetime,cycle time,self discharge,response time and maturity.

Q 3) What is the most important concept(s) that you gained for today's Live Class? (minimum 300 characters)

A 3) The purposes of BESS in renewable energy is to store energy when generation is high,supply energy when generation is low and improve grid stability that is frequency and voltage support.We have what are reffered toas energy fundumetals which includes energy ratings,power rating ,capacity and charge discharge cycle which impacts how long it runs,amount of power delivered at once and performance.We have battery management and protection (BMS) which ensure batery protectiion and balance of cells.The key variable SOC and SOH are of importance ,also with power invertors and convertor to help DC &AC power to flow.We have performance metrics such as DOD,Round trip efficiency and cycle life and degradation.Correct sizing and operational planing helps in appropriate selection of kwh and dispatch rules based on forecast.

Q 4) How would you apply what you learn today to improve your life of work? (minimum 300 characters)

A 4) From SOC ,power can not be draw if the battery is empty because BESS is closely monitoring the SOC hence correct scheduling of build recharge periods,lighter days,proper breaks and rotate nght shifts helps to prevent mistakes,less sic leaves and thus more output.From DOC and cycle life when taken notice of helps one from getting reliale performance from the system.BMS helps reduce frastraton,confusio and overload hence small faults can be foun before becoming fires and reworks. Peak shaving equal load balancing hence when observed overload and penalties are avoided and deadlines are met without paying overtime.Efficiency loses when reduced means more work per hour of effort is made.from redundancy and parallel stings we observe that a system csm keep running even when one is sick.

Q 5) Independent Research: AIU Live Classes are a starting point for further learning beyond the class. Search similar content either online or in the AIU online library and review it then share the name or link here. If its from AIU Library copy the Source or ISSN, show me how? (can be a video, academic publication, web site. lecture or book) (minimum 10 characters)

A 5) https://www.google.com/url?client=internal-element-cse&cx=00670382e45108aae&q=https://www.enel.com/learning-hub/storage/bess&sa=U&ved=2ahUKEwj89oD5gPWUAxV8Q6QEHWNPIucQFnoECAcQAQ&usg=AOvVaw3kLVNDEOk6tuDAr2R0mYyp&fexp=121691578,121691579,121695405