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List of abbreviations

ACS	Minimum Annualized Cost of the System	IGBT	Insulated-gate bipolar transistor
ADC	Analog to Digital Conversion	LED	Light Emitting Diode
D	Duty cycle for Converter	MPP	Maximum Power Point
DER	Distributed Energy Resource	MPPT	Maximum Power Point Tracking
DOD	Battery's Depth of Discharge	PBC	Passivity-Based Control
DSP	Digital Signal Processor	SMA	Shape Memory Alloys
ESR	Equivalent Series Resistance	SMC	Sliding Mode Control
FPGA	Field Programmable Gate Array	VAWT	Vertical Axis Wind Turbine
HAWT	Horizontal Axis Wind Turbine	$V_{i,max}$	Maximum Input Voltage
LCD	Liquid Crystal Display	WECS	Wind Energy Conversion Systems
HOMER	Hybrid Optimization Model for Electric Renewable	ZVS- ZCS	Zero Voltage Switching-Zero Current Switching