

# SAMRAT ASHOK TECHNOLOGICAL INSTITUTE, VIDISHA (M.P.)



A grant-in-aid Autonomous Engineering College Estd. in 1960  
(Approved from AICTE and affiliated to RGPV & BU, Bhopal)

## Electrical Engineering Department

**Subject:** Prof. C.S. Sharma, Dr. Jitendra Kumar tandekar & Prof. Sudhir Sharma attended Two Days Training of Trainers (TOT) program for capacity building in :Grid connected Rooftop Solar: under PMSGMBY at Shivpuri from 7.10.2024 to 8.10.2024.





<b>PV System</b>		<b>Wind System</b>	
Rated capacity (kWp)	1	Rated capacity (kWp)	1
Slope or tilt angle (degree)	37.5	Hub Height (m)	17
Capital cost (\$)	1000	Capital cost (\$)	1200
Replacement cost (\$)	820	Replacement cost (\$)	850
O&M cost (\$/year)	10	O&M cost (\$/year)	20
Lifetime (years)	25	Lifetime (years)	20
<b>Diesel Generator System</b>		<b>Biodiesel Generator System</b>	
Rated capacity (kW)	10	Rated capacity (kW)	100
Minimum load ratio (%)	25	Minimum load ratio (%)	25
Capital cost (\$)	1,000	Capital cost (\$)	500
Replacement cost (\$)	800	Replacement cost (\$)	250
O&M cost (\$/year)	0.300	O&M cost (\$/year)	0.030
Lifetime (hrs)	15,000	Lifetime (hrs)	15,000 hrs
Fuel Price (\$/L)	0.8	Fuel Price (\$/L)	0.6
<b>Battery</b>		<b>Converter</b>	
Nominal Voltage (V)	12	Rated capacity (kW)	1
Nominal Capacity (kWh)	1	Efficiency (%)	95
Initial State of Charge (%)	100	Capital cost (\$)	300
Minimum State of Charge (%)	40	Replacement cost (\$)	0
Quantity	1	O&M cost (\$/year)	0
Capital cost (\$)	300	Lifetime (years)	15
Replacement cost (\$)	300		
O&M cost (\$/year)	10		
Lifetime (years)	10		
Throughput(kWh)	800		
<b>Hydro System</b>		<b>Other economic inputs</b>	
Rated capacity (kW)	10	Discount Rate (%)	8
Capital cost (\$)	80,000	Inflation Rate (%)	2
Replacement cost (\$)	40,000	Annual Capacity Shortage (%)	0
O&M cost (\$/year)	2,400	Project lifetime (years)	25
Lifetime (years)	25		
Nominal capacity (kW)	10,987		
Available Head (m)	20		
Design Flow Rate (L/s)	70		
Minimum Flow Ratio (%)	50		
Maximum Flow Ratio (%)	150		



