

**Equipment / Resources required for Solar based Skill training laboratory with
approximate budget**

Abstract

S. No	Description
1	ELECTRONIC TOOLS & EQUIPMENTS FOR SOLAR LAB (Details Attached in annexure 1)
2	HARDWARE TOOLS & EQUIPMENT FOR SOLAR LAB (Details Attached in annexure 2)
3	Tools and Equipment for SOLAR PV ENTREPRENEUR SOLAR LAB (Details Attached in annexure 3)
4	Supply, Installation & commissioning of Solar Roof Top Power Plant 6 KWp (Off – Grid) (Details Attached in annexure 4)

Annexure 1 :

LIST OF ELECTRONIC TOOLS & EQUIPMENTS FOR SOLAR LAB				
S.No	Tool Name	Type	Qty	UOM
1	Safety helmet	Yellow	20	Nos
2	Safety shoes	High Quality	4	Nos
3	Nose mask	100 pcs	20	Nos
4	Safety goggles		10	Nos
5	Ear plug		2	Nos
6	PVC hand glove		10	Nos
7	Cotton hand glove		10	Nos
8	Reflective jacket		5	Nos
9	Tong tester AC/DC		2	Nos
10	MULTIMETER		2	Nos
11	Megger	500V	2	Nos
12	Earth tester	3/30ohm	1	Nos
13	Water testing instrument (TDS meter)	Digital	1	Nos
14	Earthing Rod	2.5 mtr	1	Nos
15	Discharge Rod		1	Nos
16	Soldering Iron & Flux	low volt	5	Nos
17	Phase Sequence Meter		1	Nos
18	Hydrometer		1	Nos
19	PWM Charge Controller – 6 Ampers	Phocos	5	Nos
20	MPPT Charge Controller – 6 Ampers	Phocos	1	Nos
21	DC Load Fan		2	Nos
22	DC Light		2	Nos
23	Load – Solar Lanters		2	Nos
24	Analog Ammeter	AC 10A	2	Nos
25	Digital Ammeter	AC 10A	2	Nos
26	Energy Meter Watt Meter – (0-15 Watt)		1	Nos
27	Energy Meter Watt Meter – (0-200 Watt)		1	Nos
28	Pyranometer		1	Nos
29	Radiometers and Sensors.		1	Nos
30	High Discharge Tester		1	Nos
31	Compass		2	Nos
32	Analog Volt meter	AC 300V	2	Nos
33	Digital Volt meter	AC 300V	2	Nos
34	Thermometer	IR	2	Nos
35	Temperature Sensor	J type 60 mm	1	Nos
36	Battery (12 volts, 7.2 Ah)		4	Nos
37	Inverter (100 Watts)	100 VA	1	Nos

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***As applicable
Inclusive***

Annexure 2:

LIST OF HARDWARE TOOLS & EQUIPMENT FOR SOLAR LAB				
S.No	Tool Name	Type	Qty	UOM
1	Double ended flat spanner	6-17 mm (7pcs)	2	sets
2	Double ended ring spanner	6-17 mm (7pcs)	2	sets
3	Combination pliers	6"	4	Nos
4	Side cutting pliers	6"	4	Nos
5	Nose pliers	6"	4	Nos
6	Wire stripper		4	Nos
7	Electrician knife		10	Nos
8	Hack saw frame with blade	Flat type	4	Nos
9	Hand crimping tools	-	2	Nos
10	Cable cutter	-	1	Nos
11	Screw driver	Box Set	4	Nos
12	Water level	30m	5	Nos
13	Measuring tape	10m	2	Nos
14	Centre punch	3/8"	2	Nos
15	Standard wire gauge	S.W.G. Round	2	Nos
16	Vanier calliper	6"	1	Nos
17	Line dori	Nylon	2	Nos
18	Chisel	1.5"	2	Nos
19	Drill m/c	Bosch with tool kit	4	Nos
20	Plumb bob	-	2	Nos
21	Sprit level	1'	2	Nos
22	Flat file	-	2	Nos
23	Round file	-	2	Nos
24	Triangle file	-	2	Nos
25	Hand saw	1'	2	Nos
26	PVC mallet	-	2	Nos
27	Ball pin hammer	-	4	Nos
28	Fuse puller	-	1	Nos
29	Solar Panel – 10 Watt	Mono 5, Multi 5	10	Nos
30	Solar Panel - 120 Watt	Multi	1	Nos
31	Solar Tracker	-	1	Nos
32	Wires for DC - 4 mm ²	Red, black	20	Mtr
33	Wires for DC - 2.5 mm ²		20	Mtr

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Annexure 3:

Supply of Tools and Equipment for SOLAR PV ENTREPRENEUR SOLAR LAB				
S.No	Tool Name	Type	Qty	UOM
1	Tools box	REGULAR	2	Nos
2	Double End spanner	REGULAR	2	sets
3	Ring Spanner Set – mm Size		2	sets
4	Ring Spanner Set – mm Size	REGULAR	4	Sets
5	Hacksaw Frame	REGULAR	8	Nos
6	Combination Pliers	REGULAR	4	Nos
7	Automatic Wire Stripper	REGULAR	4	Nos
8	8 mm Punch	8 mm	2	Nos
9	Monkey Pliers	REGULAR	4	Nos
10	Grip Plier	REGULAR	2	Nos
11	Line tester	REGULAR	4	Nos
12	Connector Screw driver set	REGULAR	2	Nos
13	Flat Screw driver – Small	Small	4	Nos
14	Flat screw driver – Medium	Medium	4	Nos
15	Star Screw driver – Small	Small	4	Nos
16	Star Screw driver – Medium	Medium	4	Nos
17	Chisel	REGULAR	4	Mtr
18	HSS Hole Saw cutter - 20 mm	20 mm	4	Nos
19	HSS Hole Saw cutter - 25 mm	25 mm	4	sets
20	HSS Hole Saw cutter - 32 mm	32 mm	3	Nos
21	HSS Hole Saw cutter - 38 mm	38 mm	2	Nos
22	Arbor (mandrel) - 20 mm	20 mm	4	Nos
23	Arbor (mandrel) - 32 mm	32 mm	2	Nos
24	HSS Twisted Drill bit - 6 mm	6 mm	4	Nos
25	HSS Twisted Drill bit - 8 mm	8 mm	4	Nos
26	HSS Twisted Drill bit - 10 mm	10 mm	4	Mtr
27	HSS Twisted Drill bit - 12 mm	12 mm	2	Nos
28	Hand Crimping tool (10 mm ² to 95 mm ²)	(10 mm ² to 95	2	Nos
29	Bootless lug crimping tool	REGULAR	4	Nos
30	Chalk line markers	1 Box	2	Nos
31	Magnetic spirit level with 45o	REGULAR	2	Nos
32	10” Round file- medium	10"	2	Nos
33	10” Flat file – medium	10"	4	Nos
34	10” Half round file	16"	4	Nos
35	16” Pipe wrench	16"	2	Nos
36	Straight cutter	REGULAR	4	Nos
37	5 Meters Measuring Tape	5 Mtr	4	Nos
38	SDS Plus Masonry Drill bit- 6,8,10,12,14 mm	6,8,10,12,14	2	Nos
39	Megger	REGULAR	1	Nos
40	Digital Multimeter–3½ display	3½ display	2	Nos
41	Pipe bending Machine	REGULAR	1	Nos
42	Drilling Machine–¾"	¾"	1	Nos

Supply of Tools and Equipment for SOLAR PV ENTREPRENEUR SOLAR LAB				
S.No	Tool Name	Type	Qty	UOM
43	Jig Saw cutter	REGULAR	1	Nos
44	Bench Vice	REGULAR	4	Nos
45	Diesel generator set complete(appropriate output)	REGULAR	1	Nos
46	Different Colours of Helmets	1 of Each	1	Nos
47	Different types of goggles	4 Types	1	Nos
48	Different types of hand gloves	1 of Each	1	Nos
49	Safety belts double lane yard	REGULAR	1	Nos
50	Safety Shoes	REGULAR	1	Nos
51	Ear Plug	1 set	1	Nos
52	Reflective Jackets	REGULAR	6	Nos
53	Board of Safety instructions	REGULAR	1	Nos
54	Do's and Don'ts at work sites &	REGULAR	1	Nos
55	Spade	REGULAR	1	Nos
56	Plumb Bob	REGULAR	1	Nos
57	Wheel Barrow	REGULAR	1	Nos
58	3 meter tape	3 m	1	Nos
59	Pick axe	REGULAR	1	Nos
60	Lever Rod	REGULAR	1	Nos
61	Marking Tape	REGULAR	1	Nos
62	Supporting plywood	REGULAR	1	Nos
63	Struts	REGULAR	4	Nos
64	Cautions Signage's	5 Mtr	1	Nos

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Annexure 4:

Supply, Installation & commissioning of Solar Roof Top Power Plant 6 KWp (Off – Grid)				
S.No	Description	Make	Capacity	Qty
1	Solar Photovoltaic Module	Any MNRE Approved Brand	320Wp	20
2	Solar Power Conditioning Unit	Any MNRE Approved Brand	6 KVA	1
3	Solar Low Maintenance Tubular Battery	Any MNRE Approved Brand	12V 100Ah C10	10
4	Solar Grade DC Cables	Any ISI Mark Cable	As per site requirement	
5	Solar Grade AC Cables	Any ISI Mark Cable	As per site requirement	
6	Mounting Structures for Panels		As per site requirement	
7	Battery Rack		As per site requirement	
8	DC Junction Box		As per site requirement	

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