



SCGJ | SKILL COUNCIL FOR GREEN JOBS



with



20-22 SEPTEMBER, 2017
India Expo Centre, Greater Noida

SOLAR SKILLS COMPETITION

Report

Skill Council for Green Jobs organized India's 1st Solar Skills Competition on 21st September 2017 at REI Expo in association with GERMI and UBM at India Expo Mart, Greater Noida



Table of Contents

Background:	2
About Solar Skills Competition:	2
Nominations Received and Shortlisting of Teams:	2
Final Teams shortlisted for participating in Solar Skills Competition:	3
Schedule of Solar Skills Competition.....	4
Toolkit given at the site:.....	7
Parameters of the Evaluation:	12
Detailed Evaluation Criteria for Solar Skills Competition.....	12
Profile of the Judges:	14
Results.....	15
Pictures of the Event.....	16

Background:

The Indian Solar Industry has witnessed a massive growth in the last 3 years by adding about 10,000 MW Solar PV capacity across the country, and it's no surprise that its offering huge opportunity to the jobs in the sector.

It is expected that about 10 lakh jobs that will be added in Renewable Energy domain by 2022. Skill Council for Green Jobs (SCGJ), under the aegis of NSDC and Ministry of Skill Development & Entrepreneurship, Government of India; has introduced a market-driven system of skilling for technicians, engineers and managers working in the Solar PV industry and has brought out various Qualification Packs / National Occupational Standards for job roles in the solar domain.

Rooftop Solar PV Installer is the most sought-after job role by the industry for achieving the Government of India target of 40 GW Rooftop Solar by 2022. SCGJ is partnering with the Industry and renowned training institutions to roll out sector specific job roles.

About Solar Skills Competition:

Skill Council for Green Jobs in association with GERMI and UBM, launched the “Solar Skills Competition” in Renewable Energy India Expo on 21st September 2017 at 10:30 a.m. onwards at India Expo Centre, Greater Noida. The competition focused on workmanship & accuracy, installation procedure, speed & timing for installation and health & safety aspects. The event marked a beginning of competitive and quality learning amongst personnel in this sector; and also exhibited industry's commitment towards “Skill India Mission” of Government of India.

The competition was for installation of 1 KWp Rooftop Solar PV system.

Nominations Received and Shortlisting of Teams:

SCGJ received more than 80 interests for entries for the solar skill competition. These participants were individually asked to register for the Solar Skill Competition as a team of 3 members. There were participation both from training institutes as well as the solar Industry.

The State wise Break up of the teams which showed interested by registering are as follows:

	Solar Industry	Training Institution	Grand Total
DELHI	5		5
Gujrat	4	1	5
Haryana		3	3
MADHYA PRADESH		1	1
Maharashtra	1		1
RAJASTHAN	1		1
Tamil Nadu	1		1
Telangana	1		1
Uttar Pradesh		4	4
Grand Total	13	9	22

These teams were asked to share their experiences by google form; and the following details were received. Based on the experiences of the organization and their team members the teams were selected.

Final Teams shortlisted for participating in Solar Skills Competition:

- For the category of 'Best Solar Skills Training Institution'

TEAM No.	Training Institute Name	Team Name
A	NISE	Nise Suryamitra
B	Inderprastha Engineering College	Tech Birds
C	Gujarat Institute Of Solar Energy	GISE
D	Dayalbagh Educational Institute	Natural Energies
E	Center For Smart Solar Energy	Solarists

- For the category of 'Best Rooftop Solar Installation organization'

TEAM No.	Organization Name	Team Name
I	Fourth Partner Energy Pvt. Ltd.	Fourth Partner Energy Pvt. Ltd.
II	Solar Energy Workforce	Solar Energy Workforce
III	Suryawanti Technologies	Suryawanti Technologies
IV	Powerxp Consultants Private Limited	Team PXP
V	Mahindra Susten Pvt. Ltd.	Mahindra Susten's Centre Of Excellence








Schedule of Solar Skills Competition









21st September 2017			
Time		Platform 1	Platform 2
To	From		
10:00	10:30	<ul style="list-style-type: none"> • Opening Remarks Inauguration of Solar Skill Competition • Rules and Doubt Clearing Session 	
Competition : 'Best Solar Skills Training Institution'			
10.30	11.00	TEAM A <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	
10.30	11.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	TEAM B <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed
11.00	11.30	TEAM C <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • And reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations








11.30	12.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	TEAM D <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed
12.00	12.30	TEAM E <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations
12.30	1.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	
1:00	2:00	LUNCH BREAK	
Competition : 'Best Rooftop Solar Installation organization			
2.00	2.30	TEAM I <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	
2:30	3.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	TEAM II <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV







			<p>power plant with all the procedures.</p> <ul style="list-style-type: none"> • 5 mins time for the Judges to evaluate the task performed
3.00	3.30	<p>TEAM III</p> <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations
3.30	4.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	<p>TEAM IV</p> <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed
4.00	4.30	<p>TEAM V</p> <ul style="list-style-type: none"> • 5 mins on selection of Safety Equipment • 20 Mins to perform particular tasks related to Installation of 1 kW Solar PV power plant with all the procedures. • 5 mins time for the Judges to evaluate the task performed 	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations
4.30	5.00	<ul style="list-style-type: none"> • Dismantling the Panels from the structures • Reorganizing all the Equipment's and tools • Putting all the things at their Designated Locations 	
Announcement of Winners of both the categories and Prize Distribution			
VOTE FOR THANKS			






Toolkit given at the site:

Sr.No.	Name	
1	Installation Tool Kit	
	Double ended flat spanner set	
	Double ended ring spanner set	
	Combination pliers	
	Side cutting pliers	
	Nose pliers	
	Wire stripper	
	Electrician knife	

<p>Hack saw frame with blade</p>	
<p>Hand crimping tools</p>	
<p>Cable cutter</p>	
<p>Screw driver</p>	
<p>Water level</p>	
<p>Measuring tape</p>	
<p>Standard wire gauge</p>	
<p>Line dori</p>	

	Drill m/c	
	Flat file	
	PVC mallet	
	MC4 Crimping tool	
2	Cable	
3	Safety Glass	
4	Electrical Insulated Gloves	

5	Cotton Hand Gloves	
6	Fall Protection Full Body Harness	
7	Safety Helmets	
8	Drill Kit	
9	Self Tampering Bolt	
10	Mounting Structure for 1 KW (Tilted Roof Type - 2 nos)	

<p>11</p>	<p>First Aid Box</p>	
<p>12</p>	<p>MC4 Connector</p>	
<p>13</p>	<p>Cable Tie</p>	
<p>14</p>	<p>Modules (1KW System)</p>	
<p>15</p>	<p>On Grid Inverter (1KW System)</p>	
<p>16</p>	<p>Power Supply (Atleast 3 sockets)</p>	

Parameters of the Evaluation:

The Skills competition will be for Solar PV Installation and can be on any of the below topics for a 1 kWp Solar PV Power Plant (for more details, please refer to the National Qualification on Solar PV Installer, SGJ/Q0101) -

- ◆ Installation of Solar PV system
- ◆ Testing & Inspection of Solar PV System

- ◆ Maintain Personal Health & Safety at project site

The competition will be judged on



Detailed Evaluation Criteria for Solar Skills Competition

<u>S.no</u>	<u>Aspects</u>	<u>Criteria</u>	<u>Judge 1</u>	<u>Judge 2</u>	<u>Judge 3</u>
1	Workmanship & Accuracy 20 Marks	Identify methods of moving tools and equipment's to work area			
		Identify and choose right equipments for particular application			
		Proper method and procedure for using the tools			
		Proper installation procedure followed			
		Quality of installation			
		Total			
2	Installation Procedure 40 Marks	Install mounting posts, roof attachments and anchors			
		Install module support/racking frame			
		Install, secure and fasten the modules			
		Torque module fastners			
		Terminate fine stranded cables / crimping			
		Install and connect the cables for modules			
		Dismantle safety Power Plant in accordance with sequence and remove			

		from worksite to clear work area (additional marks)			
		Total			
3	Speed & Timing For Installation Max: 20 Marks	Timing for selection of proper equipments			
		Scheduling and sequencing of different activities during installation			
		Timing for installation / the given task			
		Team work			
		Total			
4	Health & Safety Aspects Considered While Installation Max: 20 Marks	Select the required PPE			
		Use of required PPE for working at height specially safety harness			
		Inspect/ install fall protection and perimeter protection equipment ensuring adequacy for work			
		Use Proper PPE for particular application safe work environment during installation			
		Total			
		TOTAL SCORE MAX: 100			
Dismantle the solar Power Plant safely in accordance with sequence and remove from worksite to clear work area.					

Judge 1 sign

Judge 2 sign

Judge
3 sign

Profile of the Judges:

1. Tanmay Bishnoi

Mr. Tanmay Bishnoi provides intellectual and strategic leadership for the overall design & structure of the National skill development programmes on Green skills; organises stakeholder engagement meets for preparing industry research reports; and is responsible to develop National Qualifications for Renewable Energy, Green Construction, Green Transportation, Water and Waste Management; with additional responsibility of engagement with bilateral and multilateral agencies for strategic partnerships. He has delivered multiple Training of Master Trainer programs, and has completed the Master Trainer program on training delivery and facilitation skills, certified by IFC, World Bank Group organization.



2. Dr. Omkar Jani

Principal Research Scientist at Gujarat Energy Research & Management Institute (GERMI). He heads the renewable energy, environment and energy efficiency research wing at GERMI a world-class research institute involved in project implementation, education, research and training. Dr Omkar Jani advises various organizations of the Government of Gujarat including the Energy and Petrochemicals Department and its associated organizations/ companies on solar PV related mandates, activities and innovative projects. He has spearheaded the implementation of solar power projects in more than 10 states of India.



3. Kapil Kumar Nirmal

With over 10 years of work experience in field of Solar Energy. Kapil posses vast knowledge in design and engineering, consulting services. Have provided consulting in various countries India, Germany, UAE, Bangladesh, Nepal, Malaysia. During his tenure, Kapil has worked on variety of projects, like

- Solar-Wind Hybrid
- Solar-Diesel-Storage Hybrid (Island Electrification)
- Roof Top Solar PV (10kW to large scale industrial shed >5MW)
- Large ground mounted projects (1MW to 250MW)

In terms of capacity, Kapil has delivered more than 2GW of design & engineering, consulting assignments.



Results



SKILL COUNCIL FOR GREEN JOBS



WINNERS OF THE SOLAR SKILLS COMPETITION

BEST SOLAR INSTALLATION ORGANIZATION

BEST SOLAR SKILLS TRAINING INSTITUTION

Winner

Runners-up

Winner

Runners-up



Pictures of the Event



