

Model Curriculum

Solar PV Project Helper

SECTOR: GREEN JOBS
SUB-SECTOR: RENEWABLE ENERGY
OCCUPATION: INSTALLATION, OPERATION AND MAINTENANCE
REF ID: SGJ/Q0111, V1.0
NSQF LEVEL: 2



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

SKILL COUNCIL FOR GREEN JOBS

for the

MODEL CURRICULUM

Complying to National Occupational Standards of Job Role/
Qualification Pack: 'Solar PV Project Helper' QP No. 'SGJ/Q 0111 NSQF Level 2'

Date of Issuance: **October 16th, 2017**

Valid up to: **September 30th, 2019**

* Valid up to the next review date of the Qualification Pack


Authorised Signatory
(Skill Council for Green Jobs)

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Solar PV Project Helper

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Solar PV Project Helper”, in the “Green Jobs” Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Solar PV Project Helper		
Qualification Pack Name & Reference ID.	SGJ/Q0111, v1.0		
Version No.	1.0	Version Update Date	01 th Aug 2017
Pre-requisites to Training	5th Pass Preferably		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none">• Assist in installation and maintenance of solar PV power plant• Assist in installation and maintenance of off grid solar systems• Maintain personal health & safety at workplace		

This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Solar PV Project Helper” Qualification Pack issued by “Skill Council for Green Jobs”.

S. No	Module	Key Learning Outcomes	Equipment Required
1	Introduction to Solar PV Sector in India Theory Duration (hh:mm) 12:00 Practical Duration (hh:mm) 12:00 Introduction Module	<ul style="list-style-type: none"> basics on solar energy and power generation overview of solar PV technology overview of solar sector in India type of ground mount PV Power Plants and working principles type of Rooftop Solar PV Power Plants and working principles tools used in activities at solar PV power plant site precautions to be taken while handling different electrical and mechanical products 	
2	Assist in installation and maintenance of Solar PV Power Plant Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 70:00 Corresponding NOS Code SGJ/N0130	<ul style="list-style-type: none"> identify components of solar PV power plants identify the tools used at a solar PV power plant site assist in survey of the site for installation of solar power plant make foundations for module mounting structures and other components under supervision assist in measurement and recording of readings from various equipment carry out cleaning of modules as per schedule and standard procedure and remove any shadowing objects perform visual inspection for fault identification as per schedule assist in replacing defective modules from the PV module arrays assist in repair and replacement of broken foundations for modules, combiner boxes, inverters and transformers, etc. clean the work area after completing the installation and maintenance activity remove all the tools, consumables used from the work area and dispose of any waste materials in accordance with safe working practices fill in the job completion 	1 kWp Solar PV power plant, Solar Power Plant Installation toolkit, Solar Power Plant Maintenance toolkit, Site Visit for Practical Learning
3	Assist in installation and Maintenance of off grid solar systems Theory Duration (hh:mm) 12:00 Practical Duration (hh:mm)	<ul style="list-style-type: none"> assist in survey of the site for installation of solar modules and pump visually inspect for physical defects of equipment mount and fix the structures and modules on the foundations under supervision assist in laying of cables and pipes under supervision 	Solar Power Plant Installation toolkit, Solar Power Plant Maintenance toolkit, Site Visit for Practical Learning

	56:00 Corresponding NOS Code SGJ/N0131	<ul style="list-style-type: none"> assist in installation and regular maintenance clean the work area after installation make proper foundation under supervision assist in erection of the pole under supervision assist in installation and regular maintenance of street lights clean the work area after installation visually inspect all components including batteries, solar modules, cables of small solar systems assist in installation and regular maintenance of solar modules, lights, fan, etc. clean the work area after completing the installation 	
4	Maintain Personal Health & Safety at workplace Theory Duration (hh:mm) 06:00 Practical Duration (hh:mm) 12:00 Corresponding NOS Code SGJ/N0148	<ul style="list-style-type: none"> Identify the requirements for safe work area; identify contact person when workplace safety policies are violated and provide information about incident/violation identify location of first aid materials and administer first aid related to the work being carried out 	Safety helmet, Safety souse, Safety belt, , Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket, Safety Gloves
	Theory Duration (hh:mm) 50:00 Practical Duration (hh:mm) 150:00	1 kWp Solar PV power plant, Solar Power Plant Installation toolkit, Solar Power Plant Maintenance toolkit, Safety helmet, Safety souse, Safety belt, , Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket, Safety Gloves, Site Visit for Practical Learning	

Grand Total Course Duration: 200 **Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Skill Council for Green Jobs](#))

Trainer Prerequisites for Job role: “Solar PV Project Helper” mapped to Qualification Pack: “SGJ/Q0111, v1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “SGJ/Q0111, Version 1.0”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	10 th Pass+ ITI Or Diploma in technical education
4a	Domain Certification	Certified for Job Role: “Solar PV Project Helper” mapped to QP: “SGJ/Q0111, Version 1.0”. Minimum accepted score as per respective as per SCGJ guidelines is 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102” or equivalent. Minimum accepted score as per SSC is 80%.
5	Experience	Two years of hands-on working experience of Installation and Maintenance of Solar PV power plants

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Solar PV Project Helper

Qualification Pack SGJ/Q0111

Sector Skill Council Green Jobs

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 50% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Compulsory NOS			Marks allocation		
Total Marks: 250					
Assessment Outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
SGJ/N0130 Assist in installation and maintenance of solar PV power plant	PC1. identify components of solar PV power plants	100	10	3	7
	PC2. identify the tools used at a solar PV power plant site		10	3	7
	PC3. assist in survey of the site for installation of solar power plant		8	3	5
	PC4. make foundations for module mounting structures and other components under supervision		10	3	7
	PC5. assist in measurement and recording of readings from various equipment		5	2	3
	PC6. carry out cleaning of modules as per schedule and standard procedure and remove any shadowing objects		10	3	7
	PC7. perform visual inspection for fault identification as per schedule		6	2	4
	PC8. assist in replacing defective modules from the PV module arrays		10	2	8
	PC9. assist in repair and replacement of broken foundations for modules, combiner boxes, inverters and transformers, etc.		10	2	8

	PC10.clean the work area after completing the installation and maintenance activity		10	1	9
	PC11.remove all the tools, consumables used from the work area and dispose of any waste materials in accordance with safe working practices		5	2	3
	PC12.fill in the job completion		6	2	4
	TOTAL		100	28	72
SGJ/N0131 Assist in installation and maintenance of off grid solar systems	PC1. assist in survey of the site for installation of solar modules and pump	100	8	3	5
	PC2. visually inspect for physical defects of equipments		8	2	6
	PC3. mount and fix the structures and modules on the foundations under supervision		8	2	6
	PC4. assist in laying of cables and pipes under supervision		6	2	4
	PC5. assist in installation and regular maintenance of solar PV pumps		10	3	7
	PC6. clean the work area after installation		6	2	4
	PC7. make proper foundation under supervision		8	3	5
	PC8. assist in erection of the pole under supervision		6	2	4
	PC9. assist in installation and regular maintenance of street lights		10	3	7
	PC10.clean the work area after installation		6	2	4
	PC11.visually inspect all components including batteries, solar modules, cables of small solar systems		8	3	5
	PC12.assist in installation and regular maintenance of solar modules, lights, fan, etc.		10	3	7
	PC13.clean the work area after completing the installation		6	2	4
TOTAL		100	32	68	
SGJ/N0148 Maintain personal health & safety at workplace	PC1. identify requirements for safe work area	50	5	2	3
	PC2. identify contact person when workplace safety policies are violated and provide information about incident/violation		2	1	1
	PC3. identify location of first aid materials and administer first		7	3	4

	aid related to the work being carried out				
	PC4. Identify personal safety equipment required for specific locations on-site		4	2	2
	PC5. identify expiry dates and wear & tear issues of specified equipment		2	1	1
	PC6. Identify protective equipment required for using tools, equipment and testing devices needed to carry out the work		5	2	3
	PC7. follow safe and accepted practices for personal protection		2	1	1
	PC8. identify electrical hazards		3	1	2
	PC9. identify personal safety hazards or work site hazards and report to the supervisor for further action		5	2	3
	PC10. install fall protection and perimeter protection equipment for working at height as per the directions of the supervisor		4	2	2
	PC11. Follow standard operating procedure for moving tools and equipment to work area and minimize potential hazards associated with tools at height		4	2	2
	PC12. Follow standard operating procedure for placing tools and materials to eliminate/minimize the risk of items being knocked down		4	2	2
	PC13. clear the work area after completion		3	1	2
	TOTAL		50	22	28