QUALIFICATION FILE

Solar PV Installation Helper

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills

NCrF/NSQF Level: 2

Submitted By:

Skill Council for Green Jobs

Chief Executive Officer
CBIP Building, Malcha Marg,
Chanakyapuri, New Delhi – 110021
Contact no. and mail: 9871119101, ceo@sscgj.in

Contents

Section 1: Basic Details

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">Solar PV Installation Helper</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">Environmental Science</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM</td><td>NQR Code & version of existing/previous qualification:
QG-02-EH-00521-2023-V1.1-SCGJ & Version 3.0</td><td>Qualification Name of existing/previous version:
Solar PV Project Helper</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name (Wherever applicable)</td><td colspan="2"></td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code &Version</td><td>NQR: TBD
Version 4.0</td><td>6. NCrF/NSQF Level: 2</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/ Any Other</td><td colspan="2">Certificate</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">Solar PV Installation Helper assists in performing the site survey, erection, commissioning activities along with maintenance activities for solar PV power plants and off grid solar systems.</td></tr>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1.</td><td>Ability to read and write</td><td>1 year relevant experience in solar/power sector</td></tr>
<tr><td></td><td></td><td></td></tr>
</table>
b. Age: 16</td></tr>
<tr><td>10</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>9</td><td>10. Common Cost Norm Category:
I</td></tr>
<tr><td>11</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td colspan="2">NA</td></tr>
</table>

<table>
<tr><td>12</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>☒Offline ☐Online ☐Blended
<table>
<tr><th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>OJT Recommended (Hours)</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline)</td><td>150</td><td>90</td><td>30</td><td>0</td><td>270</td></tr>
<tr><td>Online</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>13</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td>NCO-2015/9313.0501
Helper Electrician</td></tr>
<tr><td>14</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td>Vertical Progression: Solar domestic Product Assembler (Level 2.5)
Horizontal Progression: NA</td></tr>
<tr><td>15</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Nil</td></tr>
<tr><td>16</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒ No</td></tr>
<tr><td>17</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☒ Yes ☐ No
If “Yes”, specify applicable type of Disability:
☒ Deaf ☒ Hard of Hearing ☒ Acid Attack Victims ☒ Dwarfism</td></tr>
<tr><td>18</td><td>How Participation of Women will be Encouraged</td><td>The programme would be proposed to be incorporated in women</td></tr>
<tr><td>19</td><td>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</td><td>☒ Yes ☐ No</td></tr>
<tr><td>20</td><td>Is Qualification Suitable to be Offered in Schools/Colleges</td><td>Schools ☒ Yes ☐ No Colleges ☒ Yes ☐ No</td></tr>
</table>

21	**Name and Contact Details of Submitting / Awarding Body SPOC** (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	**Name:** Dr. Praveen Saxena **Email:** ceo@sscgj.in **Contact No.:** 9871119101 **Website: https://sscgj.in/**	
22	**Final Approval Date by NSQC: 30/05/2024**	**23. Validity Duration:** 3 years	**24. Next Review Date: 29/05/2027**

Section 2: Module Summary

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT Recommended	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	SGJ/N0130: Assist in installation and maintenance of solar PV power plant	SGJ/N0130 Version 4.0	Core	2	3	45:00	45:00			90	62	38			100	33
2.	SGJ/N0131: Assist in installation and maintenance of off- grid solar systems	SGJ/N0131 Version 4.0	Core	2	3	60:00	30:00			90	55	45			100	33
3.	SGJ/N0106: Maintain Personal Health & Safety at project site	SGJ/N0106 Version 5.0	Core	5	1	15:00	15:00			30	21	29			50	17
4.	Employability Skills	DGT/VSQ/ N0101 Version 1.0	Non Core		1	30:00				30	20	30			50	17
5.	On the Job Training				1					30						
Duration (in Hours) / Total Marks					9	150	90	30		**270**	158	142			300	100

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th.**-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project*

Assessment - Minimum Qualifying Percentage

Minimum Pass Percentage – Aggregate at qualification level: 70 % *(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	10th Pass with 2 years of hands-on working experience of Installation and Maintenance of Solar PV power plants Or As per the Relevant Craft Instructor Training Scheme (CITS)
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	10th Pass with 5 years of hands-on working experience of Installation and Maintenance of Solar PV power plants post their ToT Certification Or As per the Relevant Craft Instructor Training Scheme (CITS)
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	Not Applicable

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	10th Pass with 3 years of hands-on working experience of Installation and Maintenance of Solar PV power plants Or Certified under relevant Craft Instructor Training Scheme (CITS) course. *** The education qualification can be relaxed in case of extraordinary relevant field experience.**
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	10th Pass with 3 years of hands-on working experience of Installation and Maintenance of Solar PV power plants Or Certified under relevant Craft Instructor Training Scheme (CITS) course. *** The education qualification can be relaxed in case of extraordinary relevant field experience.**
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	10th Pass with 10 years of hands-on working experience of Installation and Maintenance of Solar PV power plants post their ToA Certification Or Certified under relevant Craft Instructor Training Scheme (CITS) course. *** The education qualification can be relaxed in case of extraordinary relevant field experience.**
4.	**Assessment Mode** *(Specify the assessment mode)*	Online and offline both
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☒ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No):** Yes available at https://sscgj.in/wp-content/uploads/2022/03/Green-Jobs-Report-Jan27.pdf
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** yes Yes following key documents are available in the public domain a. https://sscgj.in/wp-content/uploads/2022/03/Green-Jobs-Report-Jan27.pdf b. https://solarrooftop.gov.in/knowledge/file-44.pdf c. https://jmkresearch.com/wp-content/uploads/2022/02/Photovoltaic-Manufacturing-Outlook-in-India_February-2022_JMK.pdf
3.	**Government /Industry initiatives/ requirement (Yes/No):**
4.	**Number of Industry validation provided:** Up to 10 industry validations are expected to be received for the qualification.
5.	**Estimated nos. of persons to be trained and employed:** The employment generation potential of a robust domestic renewable energy market supported with conducive policy ecosystem is immense. To meet the solar rooftop installation target of 40 GW, along with meeting the demand from the growing rooftop market, it is estimated that minimum 50000 skilled workforce shall be required for this function by 2025 which is expected to further increase to at least 75,000 by 2030.
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** Concurrence has been requested from the Ministry of New and Renewable Energy.

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	Annexure: Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Annexure: Tools and Equipment (Lab Set-Up)
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Annexure: Detailed Assessment Criteria (Mandatory)
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Annexure: Assessment Strategy
5.	**Annexure:** Acronym and Glossary *(Optional)*	Annexure: Acronym and Glossary
6.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Attached
7.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Annexure: Career progression and OM
8.	**Supporting Document:** Occupational Map *(Mandatory)*	Annexure: Career progression and OM
9.	**Supporting Document:** Assessment SOP *(Mandatory)*	Annexure: Assessment Strategy

Annexure: Evidence of Level

Title/Name of qualification/component: Solar PV Installation Helper			**Level:2**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
Professional Theoretical Knowledge/ Process	The individual is expected to periodically check and maintain all the electrical components of the solar PV power plant for proper electrical connectivity, incorporating quality craftsmanship and complying with all applicable codes, standards, and safety requirements.	The individual independently performs processes that are repetitive, on a regular basis such as assisting the site surveyor in the survey of site like collecting soil samples, mapping of trees and obstructions, assisting the installers during the installation by making foundations for module mounting structures, inverters, transformers, etc.,. In addition, it includes making pathways between module arrays, assisting in maintenance like cleaning the solar modules, assisting in replacement of modules, if necessary and assisting in installation and maintenance of solar off-grid systems like solar PV pumps, solar street lights and small solar PV systems. Since this role requires more of practice and less of understanding, it qualifies as a Level 2 role. Since the role does not involve routine and predictable activities but mostly repetitive work which does not involve much understanding, the role does not qualify for Level 3. For example, the roles incumbent is expected to follow the instructions of the supervisor like collecting samples, assisting in installation and maintenance, cleaning of solar modules as per schedule, etc.	2

Title/Name of qualification/component: Solar PV Installation Helper			**Level:2**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
		Since this role requires the job holder to carry out processes which are repetitive on a regular basis, with more application of practice like s/he is expected to carry out installation and maintenance of solar PV power plant and solar off-grid systems, the role cannot be placed at level 4.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	The individual is expected to be exhibit the knowledge of materials, tools and applications in a limited context like usage and handling procedure for solar modules, cleaning procedures for various equipment, tools involved in installation and maintenance activities, precautions to be taken while handling different electrical and mechanical products, etc.	The job holder is expected to exhibit an understanding of the materials, tools and applications in a limited context of work and quality. For example, s/he is expected to know the usage and handling procedures of solar modules, mechanical and electrical equipments and their functioning, tools involved in installation and maintenance, precautions to be taken while handling electrical and mechanical equipments. Further, s/he should also have the ability to speak read and write in the local vernacular language and English. Since all the above mentioned areas are related to the limited context of work and quality related to the solar PV power plant, the role qualifies for Level 2. The job holder is expected to know more than just common trade terminology, instructional words, meaning and understanding, it cannot be pegged at level 1. Further, since the job holder is not expected to be aware of basic facts, process and principles like maintenance	2

Title/Name of qualification/component: Solar PV Installation Helper			**Level:2**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
		procedures, installation and commissioning principles, performance ratios, etc., it can't be pegged at level 3. For example, this role is not expected to have knowledge about the effect of shading, tilt angle, etc. on solar module output in terms of current, voltage, etc.	
Employment Readiness & Entrepreneurship **Skills & Mind-set/Professional Skill**	The job holder is expected to operate/ use screw driver, inspection fixtures, wire cutter, pliers, testers, spanner, etc., assist in professional works like installation and maintenance activities. Further, the job holder must be able to take the day to day decisions and solve problem/s at work.	The job holder is expected to have limited skills used in limited context such as selecting the relevant tools required for carrying out the job, using the tools selected, assist in installation of solar PV power plant components like solar modules, interconnection modules like junction boxes, combiner boxes, assist in commissioning checks like measurement and recording of readings from various equipment, assist in checking of cable connections and assist in maintenance of solar PV power plant components like carrying out cleaning of modules, replacement of defective modules. Further, the incumbent also assists in the installation and maintenance of solar off- grid systems like solar PV pumps, solar street lighting system and small solar PV systems. Since all the above mentioned professional skill are limited to the context of selecting and applying appropriate tools and assisting in professional works, the role qualifies for Level 2. The Job holder is expected to possess professional skills more than just routine and repetitive skills and taking safety and	2

Title/Name of qualification/component: Solar PV Installation Helper			**Level:2**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
		security measures. For example, S/he is expected to select and use the appropriate tools for carrying out the jobs, assisting in installation, commissioning and maintenance of solar PV power plant components and solar off- grid components. Hence, the job holder can't be placed at Level 1. Further the job holder doesn't require to recall and demonstrate much of practical skills which are routine and repetitive in nature. Hence, s/he can't be placed at level 3.	
Broad Learning Outcomes/ Core Skill	The individual is expected to exhibit effective communication skills by receiving and transmit written and oral messages like receive instructions from the technicians and engineers. Further, the individual is expected to carry out tasks safely and securely and use hygienic and environmentally friendly practices and health and safety for self and that of fellow workers. S/he will possess basic arithmetic like addition and subtraction.	The job holder is expected to exhibit effective oral communication skills (including awareness of vernacular language) so as to understand the instructions of the supervisor and carry out the job accordingly. The job holder is also expected to possess some reading and writing skills so as to read and understand health and safety instructions, signage, etc. The job holder is also expected to display basic arithmetic/ algebraic awareness like addition and subtraction required to measure and understand parameters like current, voltages, etc. The incumbent must use hygienic and environmentally friendly practices like cleaning the work area after installation and respect social and religious backgrounds of fellow workers so as to work collaboratively with the workers.	2

Title/Name of qualification/component: Solar PV Installation Helper			Level:2
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
		Since all the above mentioned core skills are related to receiving information from the supervisors and using hygienic and environmentally friendly practices, the role can be placed at level 2. Since, the Job holder expected to possess core skills more than just reading, writing, addition and subtraction and familiarity with social and religious diversity, hygiene and environment, the job holder can't be placed at Level 1. Further since the job holder doesn't require to use skill of basic arithmetic and algebraic principles, personal banking, basic understanding of social and natural environment, s/he can't be placed at level 3.	
Responsibility	The individual has no responsibility and works under instruction and close supervision of their subordinate and senior.	Solar Project Helper has practically no responsibility and mostly works under instruction and close supervision. S/he is expected to follow the instructions of the supervisor to the word and in report immediately to the supervisor in case of any deviations from normal working. Thus s/he can be placed at level 2. Since s/he is not expected to be responsible of own work and learning but works under the close supervision of the supervisors, s/he can't be placed at level 3.	2

Title/Name of qualification/component: Solar PV Installation Helper			**Level:2**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the outcomes relate to the NSQF level descriptors**	**NSQF Level**
		Also as is evident from the above examples the incumbent also works without continuous instructions such as cleaning of modules, etc. Hence, s/he can't even be placed at Level 1.	

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	1 kWp Solar PV power plant,	Nos	1
2	Solar Power Plant Installation toolkit,	Set	3
3	Solar Power Plant Maintenance toolkit,	Set	3
4	Demo model of Solar Water pump	Nos	1
5	Demo model of Solar street light	Nos	1
6	Sign Boards of safety and equipment	Set	1
7	Safety helmet,	Nos	30
8	Safety shoes,	Nos	30
9	Safety belt,	Nos	30
10	PVC hand glove,	Nos	30
11	Cotton hand glove,	Nos	30
12	Reflective jacket,	Nos	30
13	First Aid kit	Nos	1
14	Safety Gloves,	Nos	30
15	Practical site	Nos	1

Classroom Aids

The aids required to conduct sessions in the classroom are:

Marker, chart and visual aid, Pellet production flowchart, raw material supply chain flow chart, Schematics of Compressed biogas waste to energy plant;

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1.	Ashlyn Solar Infra Private Limited	Arun Kumar	Director	C-44, Mansa Ram Park, Uttam Nagar, New Delhi - 110059	8130841685	arun@greenaffiliates.in	NA
2.	Danao Green Tech Private Limited	Dr. Sanjay Danao	Director	203, Sai Avenue, D-7, CIDCO Meghdoot, Butibori MIDC, Nagpur - 441122	9545648496	Danaogreentech@gmail.com	NA
3.	M/s Oriana Power Limited	Parveen	CEO	C-103, 1st Floor, Sec-2, Noida, U.P-201301	0120-4114695	Rupal.gupta@orianapower.com	NA
4.	PowerXP Consultants Private Limited	Puneet Sharma	GM	86, Marudhara Nagar, Bikaner, Rajasthan - 334003	7726884770	pxpsolar@gmail.com	NA
5.	Innodust Marketing Private Limited	Sunil Kumar Sahoo	Director	Plot No. A/63/1, Saheed Nagar, Bhubaneshwar, Odisha - 751007	7894412585	Sunil.innodust@gmail.com	NA
6.	Vacen Engineering and Solutions Private Limited	Vibhutinath Pandey	Director	H-72-A, Second Floor, Kh No. 80/14, Mahavir Enclave, Palam, New Delhi - 110045	7503208625	Vibhuti.vacen@gmail.com	NA

7.	Ayodhyawasi Corporation (OPC) Private Limited	Anurag Srivastava	CEO	D-2/101, Vibhuti Khand, Gomti Nagar, Lucknow - 226010	8887521559	ayodhyawasigroup@gmail.com	NA
8.	Gujarat Institute of Solar Energy	Dipti Shah	Principal Director	620, Sharan Circle Business Hub, Opp. Zundal BRTS, Zundal Cross Road, Gandhinagar - 382421	9898167732	director@gise.in	NA
9.	GORenewable Technology	Japen Gor	Managing Partner	214, Devpath Complex, B/H Lal Bungalow, Off C.G Road, Navrangpura, Ahmedabad-380009	9099064348	japen@gorenewtech.com	NA
10.	SolarTech Saarthi Pvt. Ltd.	Lucky Agarwal	Managing Director	A-6/49, Sector 17, Rohini, Delhi - 110089	9711851306	solarsaarthi@gmail.com	NA
11.	Global Sustainable Energy Solutions India Pvt. Ltd.	Dwipen Boruah	Managing Director	FIEE Complex, A-46, Upper Ground Floor, Okhla Industrial Area, Phase II, New Delhi - 110020	9560550075	Dwipen.boruah@gses.in	NA
12.	ASW Projects Pvt. Ltd.	Uzma Ali	Assistant Manager	38 A,1st Floor, Surya Kiran Complex, Opposite Khureji Petrol Pump,	7011485393	aswprojects@gmail.com	NA

				West Laxmi Market, Delhi - 110051.			
13.	Friends Power Solution	Hiren Thakkar	Partner	25/c Mahakant Complex, Opp. v.s. hospital Ellisbridge, Ahmedabad	9825431155	Friendspowersolution1121@gmail.com	NA
14.	Grun Green Power Private Ltd	Ramesh Shivanna	Director	99, 2nd Cross, 2nd Main, MLA Layout, R T Nagar, Bangalore	9845010306	ramesh@prideworld.in	NA
15.	Heemsol Energy System Pvt Ltd	Dipti Shah	Director	620, Sharan Circle Hub, Near Zundal BRTS Bus Stand, Zundal, Gandhinagar-382421, Gujarat	9898167732	dipti@heemenergy.com	NA
16.	MS Enterprises	Nitin Verma	Director	248-A, Veer Sawarkar Nagar, Kota (Raj.) - 324005	9001860235	Rajsingh.necessary@gmail.com	NA
17.	OM SAI SOLAR POWER SYSTEM	Rajendra Singh	Director	Plot No. C-183, Noida, Sector 63	9999596127	Omsaisolarpowersystem12@gmail.com	NA
18.	SAURGURU GREEN ENERGY SOLUTIONS	Manisha Anand Barbind	Proprietor	Plot No. 03, Peshwe Nagar, Satara Parisar, Aurangabad (M.S)	9422108057	mabarbind@gmail.com	NA
19.	Shri Rang Aditya Solar Power EPC Pvt Ltd	Atul Jani	Director	A-413, Fourth Floor, Maradia Plaza, Near	76328 50466	rangadityaaspepc@gmail.com	NA

				Panchvati 5 Cross Road, C. G. Road, Ahmedabad			

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2024-25	500			50	NA	
2025-26	500			50	NA	
2026-27	500			50	NA	

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
1	2021-22	0	0	0									
2	2022-23	590	582	582									
3	2023-24	6037	6022	6022									

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

1. NA

Content availability for previous versions of qualifications:

Solar PV Installation Helper

☒ **Participant Handbook** ☒ **Facilitator Guide** ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available: Available in English

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒Theory/ Lectures - Imparting theoretical and conceptual knowledge	Not Applicable	Not Applicable
2	☒Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☒Showing Practical Demonstrations to the learners		
4	☒Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☒Tutorials/ Assignments/ Drill/ Practice		

6	☒Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☒On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/ Module Name:	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SGJ/N0130: *Assist in Installation and Maintenance of Solar PV Power Plant*	*Introduction to Solar PV Sector in India*	**25**	**12**	-	-
	PC1. discuss the role of Solar PV Project helper, its importance in the sector and the advantages of doing the course	3	-	-	-
	PC2. discuss the basic aspects of solar energy andpower generation	3	-	-	-
	PC3. discuss the broader overview of solar PVtechnology and sector in India	3	-	-	-

	PC4. discuss the types of solar PV Power plants including rooftop and ground mounted PV PowerPlants and their working principles	3	-	-	-
	PC5. discuss how to identify various tools used insolar power plants	3	-	-	-
	PC6. discuss the precautions to be followed whileusing electrical and mechanical components	3	-	-	-
	PC7. discuss the importance of basic skills for communication; along with how to work effectivelywith others while respecting gender and disability concerns	3	-	-	-
	PC8. discuss and show the importance of reading and interpreting signs, notices and/or cautions atproject site.	4	4	-	-
	PC9. show how to use various tools used in solarpower plants	-	3	-	-
	PC10. show the precautions to be followed whileusing electrical and mechanical components at solar project site	-	3	-	-
	PC11. show how to adhere to the discipline duringthe training program	-	2	-	-
	Assist in installation and maintenance of Solar PVPower Plant	**27**	**36**	-	-
	PC12. discuss how to identify various componentsand tools of solar PV power plants.	3	-	-	-

	PC13. show how to assist in survey of the site for installation of solar power plant	-	3	-	-
	PC14. discuss to make foundations for module mounting structures and other components under supervision	3	-	-	-
	PC15. discuss how to assist in measurement and recording of readings from various equipment	3	-	-	-
	PC16. discuss how to carry out cleaning of modules as per schedule and standard procedure and remove any shadowing objects	3	-	-	-
	PC17. discuss and show how to assist in replacing defective modules	3	4	-	-
	PC18. discuss how to assist in repair and replacement of broken foundations for modules, combiner boxes, inverters and transformers, etc.	3	-	-	-
	PC19. discuss how to clean the work area after completing the installation and maintenance activity	3	-	-	-
	PC20. discuss how to remove all the tools, consumables used from the work area and dispose of any waste materials in accordance with safe working practices	3	-	-	-
	PC21. discuss how to identify processes where material and resources utilization can be optimized	3	-	-	-
	PC22. show how to identify various components and tools of solar PV power plants	-	3	-	-
	PC23. show how to assist in survey of the site for installation of solar power plant	-	4	-	-

	PC24. show how to assist in measurement and recording of readings from various equipment	-	3	-	-
	PC25. show how to carry out cleaning of modules as per schedule and standard procedure and remove any shadowing objects	-	3	-	-
	PC26. show how to perform visual inspection for fault identification as per schedule	-	3	-	-
	PC27. show how to assist in repair and replacement of broken foundations for modules, combiner boxes, inverters and transformers, etc.	-	4	-	-
	PC28. show how to clean the work area after completing the installation and maintenance activity	-	3	-	-
	PC29. show how to remove all the tools, consumables used from the work area and dispose of any waste materials in accordance with safe working practices	-	3	-	-
	PC30. show how the job completion report could be filled	-	3	-	-
NOS Total		**52**	**48**	**-**	**-**

NOS/ Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SGJ/N0131: Assist in Installation & Maintenace of	*Assist in installation and Maintenance of off- gridsolar systems*	**57**	**43**	**-**	**-**

Off-Grid Solar System	**PC1.** discuss and show how to assist in survey ofthe site for installation of solar modules and pump	5	5	-	-
	PC2. discuss and show how to visually inspectfor physical defects of equipment	4	4	-	-
	PC3. discuss and show how to assist in laying ofcables and pipes under supervision	5	5	-	-
	PC4. discuss and show how to assist ininstallation and regular maintenance	4	4	-	-
	PC5. discuss how to make proper foundationunder supervision	5	-	-	-
	PC6. discuss to assist in erection of the poleunder supervision	4	-	-	-
	PC7. discuss how to mount and fix the structuresand modules on the foundations under supervision	5	-	-	-
	PC8. discuss and show how to assist in installation and regular maintenance of streetlights	5	5	-	-
	PC9. discuss and show how to visually inspect all components including batteries, solar modules, cables of small solar systems	5	5	-	-
	PC10. discuss and show how to assist in installation and regular maintenance of solarmodules, lights, fan, etc.	5	5	-	-

	PC11. discuss to assist in cleaning of PV module,including Dry/ Wet/ and robotic cleaning	5	-	-	-
	PC12. discuss and show how to clean the workarea after completing the installation	5	5	-	-
	PC13. show how to assist in making foundationand erection of the pole under supervision	-	5	-	-
NOS Total		**57**	**43**	-	-

NOS/ Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
DGT/VSQ/N0101: Employability Skills	*Introduction to Employability Skills*	**1**	**1**	-	-
	PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	Constitutional values – Citizenship	**1**	**1**	-	-
	PC2. identify constitutional values, civic rights,duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
	Becoming a Professional in the 21st Century	**1**	**3**	-	-

	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and culturalawareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
	Basic English Skills	**2**	**3**	-	-
	PC4. speak with others using some basicEnglish phrases or sentences	-	-	-	-
	Communication Skills	**1**	**1**	-	-
	PC5. follow good manners while communicatingwith others	-	-	-	-
	PC6. work with others in a team	-	-	-	-
	Diversity & Inclusion	**1**	**1**	-	-
	PC7. communicate and behave appropriatelywith all genders and PwD	-	-	-	-
	PC8. report any issues related to sexual harassment	-	-	-	-
	Financial and Legal Literacy	**3**	**4**	-	-
	PC9. use various financial products and servicessafely and securely	-	-	-	-
	PC10. calculate income, expenses, savings etc.	-	-	-	-

	PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	Essential Digital Skills	**4**	**6**	-	-
	PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
	PC13. use internet and social media platforms securely and safely	-	-	-	-
	Entrepreneurship	**3**	**5**	-	-
	PC14. identify and assess opportunities for potential business	-	-	-	-
	PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	Customer Service	**2**	**2**	-	-
	PC16. identify different types of customers	-	-	-	-
	PC17. identify customer needs and address them appropriately	-	-	-	-
	PC18. follow appropriate hygiene and grooming standards	-	-	-	-
	Getting ready for apprenticeship & Jobs	**1**	**3**	-	-

	PC19. create a basic biodata	-	-	-	-
	PC20. search for suitable jobs and apply	-	-	-	-
	PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total		**20**	**30**	-	-

NOS/ Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
SGJ/N0106: *Maintain Personal Health & Safety at Project Site*	*Adopt safe practices at workplace*	**13**	**19**	-	-
	PC1. explain the requirements for safe work area	2	-	-	-
	PC2. identify and report any hazards, risks orbreaches in site safety to the appropriate authority	2	3	-	-
	PC3. follow recommended safe practices in handling physical, chemical, electrical and firehazards and risk	1	2	-	-
	PC4. use appropriate Personal Protective Equipment (PPE) for head, eye, hand, ear, face, body and fall protection specific to work condition	2	4	-	-

	PC5. follow safe practices when working at heightand in confined space	1	1	-	-
	PC6. handle all required tools, tackles, materialsand equipment safely	1	2	-	-
	PC7. identify expiry dates, wear and tear issuesof specified equipment and accordingly inform supervisor and undertake corrective measures	1	2	-	-
	PC8. apply ergonomic principles whereverrequired	1	2	-	-
	PC9. use safety signs, labels, charts and noticesat workplace	1	1	-	-
	PC10. identify work safety procedures and instructions for handling heavy components	1	2	-	-
	Follow emergencies, rescue and first aid procedures	**4**	**4**	-	-
	PC11. follow emergency and evacuation procedures in case of accidents, fires and naturalcalamities	1	1	-	-
	PC12. use appropriate fire extinguishers fordifferent types of fire	1	1	-	-
	PC13. administer first aid to victim in case of various medical emergencies including bleeding, burns, choking, electric shock, cardiac arrest, etc.	1	1	-	-
	PC14. use correct method to move injured person during an emergency	1	1	-	-

	Follow good housekeeping practices and infection control guidelines	**4**	**6**	-	-
	PC15. follow recommended personal hygiene, workplace hygiene and sanitation practices	1	1	-	-
	PC16. clean and disinfect all material, tools and supplies before and after use	1	1	-	-
	PC17. report immediately to concerned authorities regarding sign and symptoms of illness of self and other colleagues	1	2	-	-
	PC18. follow processes specified for disposal of hazardous waste	1	2	-	-
NOS Total		**21**	**29**	-	-

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SID or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SCGJ
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SCGJ monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Center photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:
    - Surprise visit to the assessment location
    - Random audit of the batch
    - Random audit of any candidate

6. Method for assessment documentation, archiving, and access
    - Hard copies of the documents are stored
    - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
    - Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

On the Job:

OJT Monitoring Report

- As in Green Jobs Sector, reproducing the evidence for assessment is not feasible due to constraints like cost, confidentiality and controlled environment, every
- Apprentice is required to record the evidences performed during the OJT and the same gets authorized by his/her supervisor.
- The evidence recording is done in a structured monitoring report, termed as OJT Monitoring report.
- During the OJT, every trainee is required to fill the OJT monitoring report which is required to be signed by his/her supervisor.
- Towards the end of OJT period these reports are submitted with the HR department of company
- These duly submitted reports are then verified by an Industry nominated assessor for verification of evidence.

Theory, Practical & Viva:

- Scope – Is used to test the knowledge and understanding and skills acquired during the OJT as well as to conform the OJT monitoring report.
- Some personality traits and generic skills (such as – promptness, sharpness, communication skills, depth of knowledge, comprehension, presentation, patience
- etc) can also be tested, which is also required for the QP.
- Tools – The assessment's questions should be aligned with the Qualification Pack, covering the PCs. There will be summative assessment at the end of the OJT.

- Method – Direct questions open and close ended questions, situation-based questions, analytical questions, and decision-making based questions for Viva,
- MCQ for the theory and performing QP related operations for practical. Different questions in theory, practical and viva are included to test relevant PCs from
- the QP
- Analysis – Assessor draws a spectrum of ready answers to be expected from trainee for Viva. This reduces effect of subjectivity of the assessor. Comparative
- Quality of trainees within a batch or different institutes can be gauged. The skill is gauged by observing the practical work.

Execution of OJT Assessment:

- HR department hands over the individual OJT monitoring report with Industry nominated assessor and schedules an assessment meeting for each trainee.
- Industry nominated assessor assesses each trainee based on OJT monitoring report, viva on each PC and also takes into account attendance of each trainee towards the end of the OJT period.
- The OJT marks are compiled for each NOS by the Industry nominated assessor and submitted with HR department of company.
- The OJT assessment results are then sent to SCGJ by HR department of company in a sealed envelope for compiling the assessment results in case of offline assessment.

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf

Annexure: Annexure: Career Progression and OM

NSQF Level/domain	Solar Photovotaic Rooftop																	
8	MD/Director																	
6.5-7	Branch Manager		Solar PV BD Manager		Solar PV Designer				Solar PV Project Manager – E&C				Solar PV O&M Manager (Roof Top)					
5.5-6		Liaison Officer				Energy Modeller		Procurement Manager	Solar PV Site In-Charge									
4.5-5	Solar Proposal Evaluation Specialist		Market research analyst		Solar PV Site Surveyor	Solar PV Assistant Structural Design Engineer	Solar PV Assistant Electrical Design Engineer	Procurement Executive	Rooftop Solar Grid Junior Engineer	Solar PV Engineer			Solar Photovoltaic Entrepreneur/Solar Enterprise Assistant Manager	Solar PV O&M Supervisor			HSE Engineer	
3.5-4					Solar PV Site Survey Assistant	CAD/Draughtsman (Mechanical)	CAD/Draughtsman (Electrical)		Solar Photovoltaic Technician	Solar PV Installer (Civil)	Solar PV Installer (Electrical)		Solar PV Installer (Surgamitra)	Solar PV Maintenance Technician (Electrical)	Solar PV Maintenance Technician (Civil/Mechanical)	Solar PV Maintenance Technician (Surgamitra)		
2.5-3																		
2					Solar PV Project Helper					Solar PV Project Helper	Solar PV Project Helper	Solar PV Project Helper		Solar PV Project Helper	Solar PV Installation Helper	Solar PV Project Helper		
1																		

Solar PV Installation Helper