

NATIONAL SKILL QUALIFICATION FRAMEWORK QUALIFICATION FILE

Version 6: Draft of 01 September 2016

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

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List of documents submitted in support of the Qualifications File

1. Qualifications Pack
2. Industry Validations letters
3. Industry Endorsement tracker
4. Integrated Occupational Map
5. Summary Sheet

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SUMMARY

Qualification Title	Solar PV Project Manager (E&C)
Qualification Code	QP SGJ/ 0114
Nature and purpose of the qualification	Nature of the qualification - A qualification pack The main purpose of the qualification - This Qualification will enable the individual to specialize in the project management of solar PV power plant
Body/bodies which will award the qualification	Skill Council for Green Jobs
Body which will accredit providers to offer courses leading to the qualification	Skill Council for Green Jobs
Body/bodies which will carry out assessment of learners	Affiliated Assessment Agency of SCGJ
Occupation(s) to which the qualification gives access	Solar PV Project Manager (E&C)
Licensing requirements	N/A
Level of the qualification in the NSQF	Level 7
Anticipated volume of training/learning required to complete the qualification	80 hours
Entry requirements and/or recommendations	B.E. / B.Tech. in Electrical Engineering/ Construction Management or related discipline/ MBA degree preferred. 6 years of experience in renewable energy/ power sector utilities/ consulting firms/ solar PV power plant installation and commissioning is required for this role
Progression from the qualification	Vertical Progression: Project Head (Level 8) Horizontal Progression: Solar PV O&M Manager
Planned arrangements for the Recognition of Prior learning (RPL)	SCGJ recognizes that there may be candidates who have prior learning experience in the Renewable Energy Sector and are desirous of being certified. - Propose to carry out RPL for candidates working in Solar, Banking or Project Finance organizations. - A bridge course would be conducted for people who are working in solar industry. - Linking of this Qualification to Start Up India
International comparability where known	This Level 7 qualification compares with UK NOS: Level 3 UK NOS: Pro Skills Sector Skill Council, PROST01, PROST 04
Date of planned review of the qualification.	30 th September 2019

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Formal structure of the qualification			
Title and identification code of component.	Mandatory/ Optional	Estimated size (learning hours)	Level
SGJ/ N0136 Manage installation of solar PV power plant	Mandatory	40	7
SGJ/ N0106 Maintain personal health & safety at project site	Mandatory	20	2
SGJ/ N0120 Work effectively with others	Mandatory	20	4

Please attach any document giving further detail about the structure of the qualification – e.g. a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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SECTION 1 **ASSESSMENT**

Body/Bodies which will carry out assessment:

Affiliated Assessment Agency of SCGJ

How will RPL assessment be managed and who will carry it out?

The RPL assessment will be carried out through pre assessment, identifying the skills gaps, provide bridge training to cover the competency gap, where required, and then conduct final assessment of the candidates.

Confederation of Indian Industry (CII) or any other Affiliated Assessment Agency of SCGJ, as per RPL Policy and Guidelines

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

The emphasis is on examination of existing businesses through case study analysis and practical demonstration of skills and knowledge based on the performance criteria.

The assessment papers are developed by Subject Matter Experts (SME) available with the Assessment Agency, in collaboration with Skill Council for Green Jobs, as per the performance and assessment criteria mentioned in the Qualification Pack. The assessments papers are also checked for the various outcome based parameters such as quality, time taken, precision, tools & equipment requirement etc. The assessment sets are then reviewed for consistency. The technical limitations at the training centres are taken care in theory and viva.

The assessment agencies are instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments. The assessment agencies are instructed to identify assessors as per the Assessment Policy and Guidelines established by Skill Council for Green Jobs relevant for that Qualification.

The assessors selected by Assessment Agencies are scrutinized and made to undergo training and introduction to SCGJ Assessment Framework, competency based assessments, and assessors guides. The assessors are provided with assessors guide developed by the Subject Matter Expert of the assessment agency in collaboration with SCGJ as per the assessment framework. The assessment guides are developed to ensure the maximum possible consistency in the assessment by different assessors and elaborate on the following

- Qualification Pack Structure
- Guidance for the assessor to conduct theory, practical and viva assessments
- Guidance for trainees to be given by assessor before the start of the assessments.
- Guidance on assessments process, practical brief with steps of operations practical observation checklist and mark sheet
- Viva guidance for uniformity and consistency across the batch.

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The assessment by assessment agency is completely based on the assessment criteria as mentioned in the Qualification Pack. Each NOS in the Qualification Pack (QP) is assigned a relative weightage for assessment based on the criticality of the NOS. Therein each Performance Criteria in the NOS is assigned marks for or practical based on relative importance, criticality of function and training infrastructure.

The following tools are proposed to be used for final assessment:

Practical Assessment: This will comprise of a test to evaluate the individual's grasp on domain skills imparted.

Viva/Structured Interview: This tool will be used to assess the conceptual understanding and the behavioural aspects as regards the job role and the specific task at hand. It will also include questions to ascertain the soft skills of interacting with the customer or client.

Written Test: Under this test few key items which cannot be assessed practically will be assessed. The written assessment will comprise of:

- True / False Statements
- Multiple Choice Questions
- Problem Statements
- Case Study Analysis

Please attach any documents giving further information about assessment and/or RPL.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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ASSESSMENT EVIDENCE

Complete a grid for each component as listed in “Formal structure of the qualification” in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – i.e. Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Title of Component: Solar PV Project Manager (E&C)

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Solar PV Project Manager (E&C)

Qualification Pack SGJ/ Q0114

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 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Assessment Outcomes	Assessment Criteria for outcomes	Total Marks	Marks allocation		
			Out of	Theory	Skills Practical
SGJ/N0136 Manage installation of solar PV power plant	PC1. Develop the overall project constructability approach for cost effective implementation	100	7	2	5
	PC1. Assist the project design team in developing sequencing , logistics and mobilization plan		4	3	1
	PC2. Manage and obtain all required permits /approvals for construction including permission for grid connectivity		4	1	3
	PC3. Manage project bill of materials and ensure timely ordering of all major materials		2	1	1
	PC4. Manage and run all		4	2	2

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	preconstruction meetings for internal and external parties			
PC5.	Develop and manage schedule for each of the construction activity i.e. construction of internal roads, construction of foundations for mounting module support structures, combiner boxes, inverters, transformers, and substation etc.	8	2	6
PC6.	Supervise and manage schedule for installation of module structures and modules, installation of inverters, transformers, earthing piles, dc / ac power protection devices, lightning arresters, substation as per the grid codes and regulatory provisions	8	1	7
PC7.	Prepare all schedule updates weekly and be ready with contingency plan	4	1	3
PC8.	Plan, schedule, and monitor all material deliveries to avoid project delays	4	1	3
PC9.	Ensure the successful completion of the projects by identifying innovative ways to maximize profit	4	1	3
PC10.	Manage internal and external change order process through discussion with subcontractors/ vendors and approval of superiors	4	1	3
PC11.	Manage project billing cycle to ensure timely submission and payment of invoices	2	1	1
PC12.	Maintain positive cash flow by developing project revenues and forecast	2	1	1
PC13.	Review and approve all capital expenditures of subcontractors/suppliers in a timely manner	2	1	1
PC14.	Ensure the costs are as per cost models and within project budget	2	1	1
PC15.	Develop and manage safety and crisis management plan for the site	2	0	2
PC16.	Implement the crisis management plan internally and monitor that it is being implemented by the subcontractor and all the visitors to the site	2	1	1
PC17.	Develop subcontractor and vendors database based on references and work	2	0	2

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	experience			
	PC18. Analyse the bids to ensure complete and accurate quotes for scopes of work	1	0	1
	PC19. Prepare and negotiate with subcontractors	1	0	1
	PC20. Resolve conflicts with subcontractors and vendors	2	0	2
	PC21. Perform project coordination and ensure overall compliance with the project documents	1	0	1
	PC22. Coordinate with the customers on a regular basis and provide them with the updates (if any)	1	0	1
	PC23. Ensure that the customer satisfaction and expectations are achieved	1	0	1
	PC24. Communicate to the customer and other key team members the contractual, financial, cost accounting, scheduling, technical and other matters related to the project	2	1	1
	PC25. Ensure development and maintenance of all logs for drawings , submittals etc.	2	1	1
	PC26. Ensure management of all meeting minutes	1	0	1
	PC27. Develop and manage overall project quality control program	4	1	3
	PC28. Ensure the preparation of detailed status reports	2	1	1
	PC29. Ensure the organization and maintenance of all commercial project folders	2	1	1
	PC30. Manage project commissioning process	1	0	1
	PC31. Develop and manage project punch list and close out	1	0	1
	PC32. Manage all closeout documentation such as O&M manuals, owners training, close out all permits	2	1	1
	PC33. Manage all warranty claims and follow ups	2	1	1
	PC34. Ensure all internal and external close out meetings are conducted and minutes documented	1	1	0
	PC35. Organize project handover meetings between customer, asset management department and operation and maintenance department/ company	2	0	2
	PC36. Conduct periodic visits to the site(s) to review the progress	2	1	1

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	at the ground				
	PC37. Supervise and coordinate the installation and commissioning activities at the site		2	1	1
		TOTAL	100	31	69
SGJ/N0106 Maintain personal health & safety at project site	PC1. Identify corporate policies required for workplace safety	50	2	1	1
	PC2. Identify requirements for safe work area and create a safe work environment		3	2	1
	PC3. Identify contact person when workplace safety policies are violated		1	1	0
	PC4. Provide information about incident/violation		1	1	0
	PC5. Identify the location of first aid materials and administer first aid		2	1	1
	PC6. Identify the personal protection equipment required for specific locations on-site		3	2	1
	PC7. Identify expiry dates and wear & tear issues of specified equipment		2	1	1
	PC8. Demonstrate safe and accepted practices for personal protection		3	2	1
	PC9. Identify environmental hazards associated with the project site		2	1	1
	PC10. Identify electrical hazards		4	2	2
	PC11. Identify personal safety hazards or work site hazards and mitigate hazards		4	2	2
	PC12. Select tools, equipment and testing devices needed to carry out the work		4	2	2
	PC13. Demonstrate safe and proper use of required tools and equipment		4	2	2
	PC14. Check access from ground to work area to ensure it is safe and in accordance with requirements		2	1	1
	PC15. Reassess risk control measures, as required, in accordance with changed work practices and/or site conditions and undertake alterations		2	2	0
	PC16. Inspect/install fall protection and perimeter protection equipment ensuring adequacy for work and conformance to regulatory requirements		4	2	2
	PC17. Identify approved methods of moving tools and equipment to work area and minimize potential hazards associated with tools at heights		2	1	1

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	PC18. Select and install appropriate signs and barricades		2	1	1
	PC19. Place tools and materials to eliminate or minimize the risk of items being knocked down		1	1	0
	PC20. Dismantle plant safely in accordance with sequence and remove from worksite to clear work area		2	1	1
		TOTAL	50	29	21
SGJ/N0120	Work effectively with others				
	PC1. Accurately pass on information to the authorized persons who require it and within agreed timescale and confirm its receipt		4	2	2
	PC2. Assist others in performing tasks in a positive manner where required and possible		4	2	2
	PC3. Consult and assist others to maximize effectiveness and efficiency in carrying out tasks		4	2	2
	PC4. Display appropriate communication etiquette while working		6	3	3
	PC5. Display active listening skills while interacting with others at work		4	2	2
	PC6. Demonstrate responsible and disciplined behaviours at the workplace		4	2	2
	PC7. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	50	3	1	2
	PC8. Identify the need for common grounds with clients, team members, etc. and negotiate in an effective manner to achieve the same		3	1	2
	PC9. Consider and respect the opinions, creativity, values, beliefs and perspectives of others		4	2	2
	PC10. Ensure collaboration and group participation to achieve common goals		6	3	3
	PC11. Promote a friendly, co-operative environment that is conducive to employee's sense of belonging		4	2	2
	PC12. Facilitate an understanding and appreciation of the differences among team members		4	2	2
		TOTAL	50	24	26

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Means of assessment 1
Means of assessment 2
Pass/Fail

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SECTION 2 **EVIDENCE OF LEVEL**

Awarding bodies will enter a proposed NSQF level for the qualification in the Qualification File Summary. This section asks for the evidence on which that proposal is based. The evidence must refer to the level descriptors of the NSQF.

NSDA recommends an approach to working out the level of qualifications which starts with the level descriptor domains (Process, Professional knowledge, Professional skill, Core skill and Responsibility: see annex A). Two variants for providing the evidence of level are offered here: Option A and Option B in the following pages. Awarding bodies should choose the option which best suits the qualification.

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OPTION A

Title/Name of qualification/component: Solar PV Project Manager (E&C)		Level: 7	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<p>The individual is responsible for managing overall installation and commissioning of one/ multiple solar PV power plants at one site or different sites. S/he supports in the project development by preliminary site analysis, project financing and prepares the project schedule including the scope of work, milestone schedule, handles the overall supervisory responsibility for the installation of one/multiple solar PV power plants from start milestone to finish milestone, prepares the overall project safety and crisis management plan, manages the relationship with customers and sub-contractors, manages the preparation of project documents like as-build drawings, O&M manuals and other project handover documents, etc.</p>	<p>The role demands wide range of specialized theoretical skill for facilitating the project development including the preliminary analysis of the site and deciding the scope of work, assisting the project design team in developing sequencing, logistics and mobilization plan, supervising the schedule for procurement of solar PV power plant components, their installation and commissioning as per industry standards, managing the project financing, managing relationships with vendors, sub-contractors and customers and managing the post commissioning process including the documentation and handover and specialised practical skills such as preparing the project bill of materials and timely ordering of all major materials, managing and obtaining all the required permits/ approvals for project initiation, preparing the overall installation and commissioning schedule from start milestone to finish milestone, preparing and managing the project financing, preparing the project safety, crisis and contingent management plan, managing relationship with customers and vendors through effective communication and co-ordination, managing the preparation of project documents like O&M manuals, compliance certificates, conformity and guarantee certificates, inspection certificates, etc.</p> <p>Considering that all the above mentioned outcomes are related to wide range of specialized theoretical and practical skill involving variable routine and non-routine contexts, the job role is pegged at level 7.</p> <p>Since the individual's scope of work is not limited to wide range of specialised technical skill and clarity of knowledge</p>	7

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Title/Name of qualification/component: Solar PV Project Manager (E&C)		Level: 7	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		<p>and practice in broad range of activity involving standard and non-standard practices but even encompasses wide range of specialized theoretical and practical skills such as overseeing project development, managing project financing, supervising the solar PV power plant installation and commissioning, managing the post commissioning handover process, managing and leading the project team and co-ordination with multiple teams including design team, maintenance team, team of sub-contractors, etc. the role can't be placed at level 6.</p> <p>And as the job holder doesn't require to have comprehensive, cognitive, theoretical knowledge and practical skills to develop solutions to abstract problems such as designing new solar PV solutions, getting new business in solar PV, etc. the role cannot be placed at 8.</p>	
Professional knowledge	<p>The individual is expected to exhibit the knowledge of the solar energy and its landscape in the country, fundamentals of solar PV power plant design, various methods of financial modelling for solar PV power plant to compute the levelized cost of generation of solar power, various stages of solar PV power plant installation and requirements in terms of material, manpower and equipment, various project management and progress evaluation metrics, project finance management aspects such as budgeting, revenue forecasts, cash flow, etc., various sub-contractors and vendors and the relevant bidding procedures and terms of conditions, various customer relationship management principles, etc.</p>	<p>The job holder is expected to wide ranging factual and theoretical knowledge in field of study power scenario and the solar landscape in the country, fundamentals of solar PV power plant design, various methods of financial modelling, computation of levelized cost of electricity, project management principles and methods, project progress evaluation metrics, project financing methods and concepts, various sub-contractors and vendors and the relevant bidding procedures and terms of conditions, various customer relationship management principles, regulatory protocols to be followed for installation and commissioning of solar PV power plant like the required health, safety and crisis management protocols, etc.</p> <p>Since all of the mentioned knowledge are related to factual and theoretical in the entire field of end to end project management of one/multiple solar PV power plant</p>	7

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Title/Name of qualification/component: Solar PV Project Manager (E&C)			Level: 7
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		<p>installation and commissioning, the individual can be placed at level 7.</p> <p>The Job holder is expected to possess wide ranging factual and theoretical knowledge in field of study knowledge of project development, financing, post commissioning handover procedures, crisis management and not just management of activities during project installation. Therefore s/he can't be placed at level 6.</p> <p>And as the job holder is not expected to have comprehensive, cognitive and theoretical knowledge for developing solutions to abstract problems such as designing new solar PV solutions, getting new business in solar PV, etc. the role cannot be placed at 8.</p>	
Professional skill	<p>The individual is expected to plan & organize the overall project management activities related to the installation and commissioning of one/ multiple solar PV power plants at one or different sites. Further s/he must be able to take decisions on a regular basis regarding the project progress, project financing, etc., manage relationship with customers, sub-contractors and apply domain knowledge to ensure the various activities involved in the project installation and commissioning as carried out as per schedule created. S/he is also expected to prepare the project bill of materials and schedule, manage project financing, etc. S/he is also expected to critically evaluate information obtained from various sources on a day to day basis to evaluate the progress as per schedule and to prepare action and contingency plan for the closure of project as per schedule.</p>	<p>The job holder expected use a wide range of cognitive and practical skills such as critical thinking and problem solving, capability development and stakeholder management. For example, s/he has to provide inputs for developing scope of work, facilitate the project budget by providing inputs basis the preliminary analysis of the site, manage project financing using financial modelling concepts like LCOE, etc., assist the design team in developing sequencing, logistics and mobilization plan, prepare the bill of materials and ensure timely ordering of all major materials, managing and obtaining all required permits/ approval required, develop and manage the overall installation and commissioning schedule by regular review and monitoring, develop and manage the project safety and crisis management plan along with the site in-charges, manage relationship with the sub-contractors and vendors, resolve any conflicts with the sub-contractors and vendors, maintain relationship with customers and manage and</p>	7

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Title/Name of qualification/component: Solar PV Project Manager (E&C)			Level: 7
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		<p>supervise the preparation of post commissioning project handover documents.</p> <p>Since all of the mentioned professional skills are related to a wide range of cognitive & practical skills required to manage the overall installation and commissioning of solar PV power plant including project development, project financing, scheduling, installation and commissioning as per schedule and post – commissioning hand over procedures, the role can be placed at level 7</p> <p>The Job holder is expected to possess a wide range of cognitive and practical skills as s/he is responsible for activities like preliminary analysis of site, project scheduling activities like preparing scope of work, milestone schedule, project financing activities like preparing project budget, preparing project bill of materials and for development of crisis management plan and overall project management and co-ordination with various stakeholders such as top management, customer, subcontractors, etc. at multiple project sites, s/he can't be placed at level 6.</p> <p>And as the job holder's cognitive & practical skills are not so wide enough to require the overseeing of many functions like project designing, business development as well as maintenance, s/he can't be placed at level 8.</p>	
Core skill	The individual is expected to be very good in mathematical calculation, data collection and organisation of information. S/he is also expected to understand the social and political environment.	The job holder is expected to be very good in mathematical calculation so as to carry out the financial modelling for the solar PV project, prepare the project bill of materials as per design specifications, manage the project financing and ensure the maximisation of profits by	7

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Title/Name of qualification/component: Solar PV Project Manager (E&C)		Level: 7	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		<p>reviewing and monitoring cash flows, compare the compute the various tests values and compare the same with industry values, monitor the plant performance by measure and compare the plant output with the design values, etc. understanding of social, political environment prevalent at that time so as to maintain good relationship with sub-contractors, vendors, customers, etc., resolve any issues arising during the course of installation, preparing crisis management and contingency plans for overall project completion, etc. S/he is also expected to be good in data collecting, organizing information and logical communication so as to ensure that the plant installation is done as per schedule by monitoring the daily progress of the project(s) through various sources, anticipate the possible issues and take proactive actions to prevent the same. For example, s/he has collect data from site in-charge(s) on a regular basis regarding the plant installation, issues faced, etc. and organise the information to prepare an action plan. Thus considering the core skills the job holder can be placed at level 7.</p> <p>The core skills of the role incumbent are broad enough to expect the job holder to be very good in mathematical skill, have understanding of social political and natural environment which would allow the incumbent to manage the project development, scheduling, financing as well as project management, of not just a single solar PV site but multiple sites. Further, the role incumbent is also expected to deal with top management on a regular basis, hence is expected to have very good presentation skills. Hence, the role can't be pegged at level 6.</p> <p>And as the core skills are not so broad enough have highly developed management skills to possess intellectual</p>	

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Title/Name of qualification/component: Solar PV Project Manager (E&C)			Level: 7
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
		independence, have excellent communication skills and have full responsibility of management and supervision of multiple functions such as designing, business development, maintenance, etc., s/he can't be placed at level 8.	
Responsibility	The individual is primarily responsible for the project management of one/multiple solar PV project site. S/he is responsible for ensuring the whole project of installation, commissioning and handover procedures happen as per schedule. S/he is also responsible for managing and leading the entire team of site in-charges, engineers, helpers as well as sub-contractors and their staff at one/ multiple project sites.	<p>The solar PV project manager (E&C) has full responsibility for the output and development of the project installation team as s/he supervises and manages all activities related to the project right from project development, project financing and schedules, managing the installation and commissioning and supervising the post commissioning procedures. Hence s/he can be placed at level 7.</p> <p>Since the individual's responsibility is not limited to own work and learning and full responsibility for some people's work and learning but has responsibility for the output of the team as a whole which not only involves managing and motivating employees under her/him but involves managing and supervising even the sub-contractors, vendors, customers and maintain good relationship with other stakeholders like inspectors, etc., s/he can't be placed at level 6.</p> <p>And as job holder's responsibilities are not so wide enough to be fully responsible for the output and development of multiples groups such as designing, business development, maintenance, etc. s/he can't be placed at Level 8. This responsibility is taken up by the Project Head who oversees the designing, business development as well as final installation of solar PV power plant. Hence the role can't be placed at level 7.</p>	7

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SECTION 3

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

During extensive industry interactions carried out while creating occupational maps and prioritization of job roles for Qualification Pack development, the mentioned qualification was indicated as a key requirement by the industry. In addition, the Skill Gap Report for the sector has indicated that a significant proportion of the workforce is involved in this work function. The study also indicates that this domain will be in great demand, due to focus of Government of India to support the sector through policy and implementation. Research was conducted in the Renewable energy sector manpower requirement estimates till 2025. The research provides the data that the discussed qualification is one of the critical roles in the sector. The details of statistics and research analysis are provided separately as a research analysis report

Evidence of the qualification is supported by validations with representation from across sub sectors .The complete list of validating companies has been enclosed as an annexure to the Q file.

What is the estimated uptake of this qualification and what is the basis of this estimate?

The increase in manpower requirements (as per projections) from 2017 to 2025 is approx. 8 times for this role. All the numbers are provided in research analysis study

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

Currently, Skill Council for Green Jobs is the only Sector Skill Council set up which has the mandate of Certification and Assessment of candidates undergoing Skill Development courses in Solar Photovoltaic domain. NSDC list of Approved QPs was checked prior to commissioning the work. There is no overlap of these Qualification Packs with existing Qualification Packs. The NCO/2015 Classification and MES Course List was also cross examined for existing trades, wherein no overlap / existing trade was found.

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

In the Qualification Pack, review date is scheduled for after 3 years in consultation with Subject Matter Experts. The monitoring of evaluation of assessments and Employer feedback will be sought post-placement, for review of the effectiveness of the Qualification.

Please attach any documents giving further information about any of the topics above.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

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SECTION 4 **EVIDENCE OF PROGRESSION**

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

1. Discussing the growth trajectory within each occupation after studying organisational charts of various industry players across small, medium and large scale organizations.
2. Exploring various lateral career opportunities for the discussed qualification
3. Ensuring that there is a clear role up in terms of performance criteria qualification experience and skill requirement from lower NSQF Level to higher levels in the hierarchy.

Please refer to attached career path as per annexure 1 which clearly defines the career path.

Please attach any documents giving further information about any of the topics above.

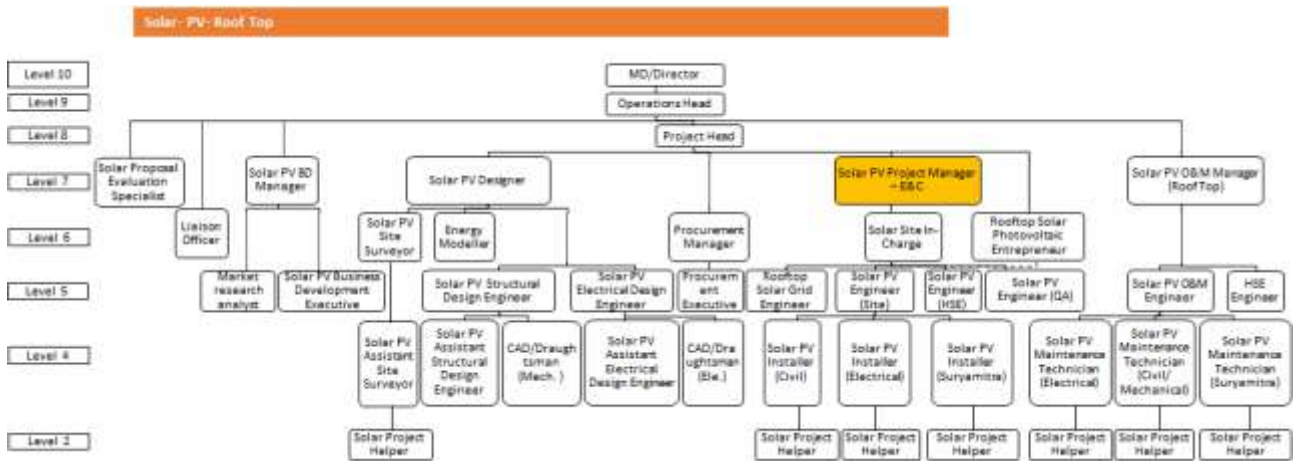
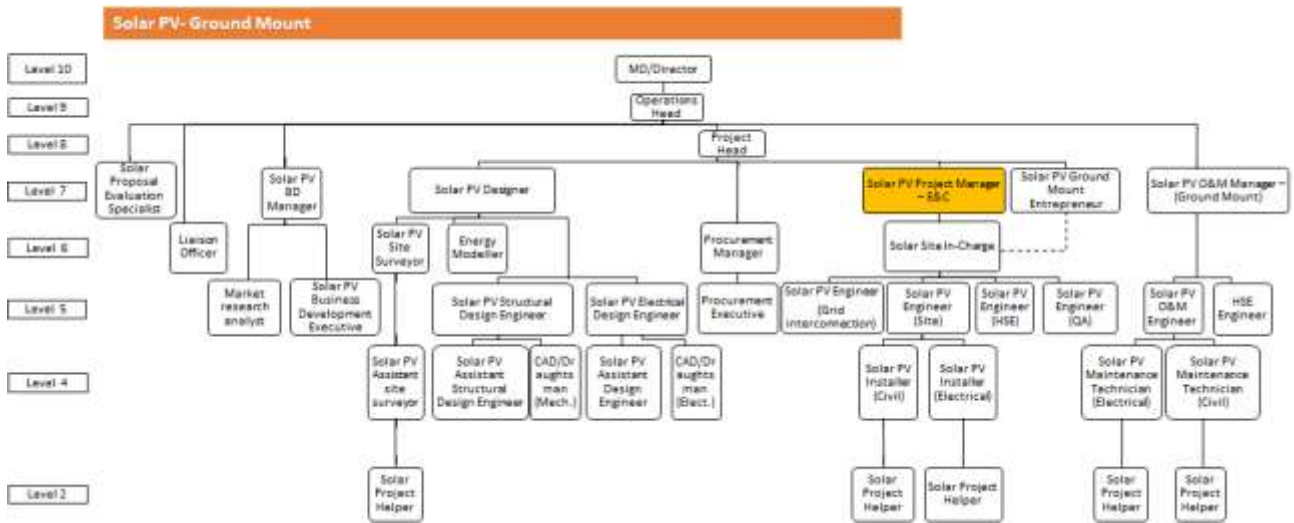
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

1. Career Map of Solar PV Project Manager (E&C) - Annexure 1
2. QP SGJ/ Q0114 - Annexure 2

NSQF QUALIFICATION FILE

Version 6: Draft of 01 September 2016

Annexure 1: Career Map



Annexure 2: QP SGJ/ Q0114