

## **NSQF QUALIFICATION FILE**

Version 6: Draft of 08 March 2016

## **NATIONAL SKILL QUALIFICATION FRAMEWORK QUALIFICATION FILE**

Version 6: Draft of 08 March 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
3. Industry Endorsement tracker
4. Integrated Occupational Map
5. NSQC Summary Sheet

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## SUMMARY

<b>Qualification Title</b>	Solar lighting Technician
<b>Qualification Code</b>	SGJ/Q0201
<b>Nature and purpose of the qualification</b>	Nature of the qualification - A qualification pack The main purpose of the qualification - To provide employment opportunity to unemployed youth - To upgrade the skills of people already in solar PV sector
<b>Body/bodies which will award the qualification</b>	Skill Council for Green Jobs
<b>Body which will accredit providers to offer courses leading to the qualification</b>	Skill Council for Green Jobs
<b>Body/bodies which will carry out assessment of learners</b>	Affiliated Assessment Agency of SCGJ
<b>Occupation(s) to which the qualification gives access</b>	Solar lighting Technician A Solar Lighting Technician assembles and maintains Solar lights
<b>Licensing requirements</b>	N/A
<b>Level of the qualification in the NSQF</b>	4
<b>Anticipated volume of training/learning required to complete the qualification</b>	160 hours
<b>Entry requirements and/or recommendations</b>	12 <sup>th</sup> pass preferably No prior experience required for this role
<b>Progression from the qualification</b>	Vertical Progression - Horizontal Progression –
<b>Planned arrangements for the Recognition of Prior learning (RPL)</b>	SCGJ recognizes that there may be candidates who have prior learning experience in the Renewable Energy Sector and are desirous of being certified. -
<b>International comparability where known</b>	This Level 4 qualification compares with UK NOS: Level 3 NOS Mapping is NA
<b>Date of planned review of the qualification.</b>	01 <sup>st</sup> April 2019

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

<b>Formal structure of the qualification</b>			
<b>Title and identification code of component.</b>	<b>Mandatory/Optional</b>	<b>Estimated size (learning hours)</b>	<b>Level</b>
SGJ/ N00201 Assembly of different types of Solar Lamps	<b>Mandatory</b>	<b>40</b>	<b>4</b>
SGJ/ N00202 Repair of Solar lamps	<b>Mandatory</b>	<b>40</b>	<b>4</b>
SGJ/ N0147 Maintain personal health and safety in manufacturing facility	<b>Mandatory</b>	<b>40</b>	<b>4</b>
SGJ/ N0106 Maintain Health and Safety at Project site	<b>Mandatory</b>	<b>40</b>	<b>4</b>
SGJ/ N0203 Assembly and Repair of solar home lightning systems	<b>Optional</b>	<b>40</b>	<b>4</b>
SGJ/ N0204 Assembly and repair of Solar Street lights	<b>Optional</b>	<b>40</b>	<b>4</b>

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.

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## **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.

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.

The assessment by assessment agency is completely based on the assessment criteria as mentioned

## NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

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.

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## 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 Lighting Technician**

[Back to top](#)

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## CRITERIA FOR ASSESSMENT OF TRAINEES

**Job Role** Solar lighting Technician

**Qualification Pack** SGJ/Q0201

**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 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 criteria
6. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS
7. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack

Compulsory NOS			Marks Allocation		
Total Marks:200					
NOS	Assessment Criteria for outcomes	Total Mark	Out Of	Theory	Skills Practical
SGJ/N0201: Assembly of different types of Solar Lamp.	PC1. Identify different types of Solar lamps	50	3	1	2
	PC2. Verify physical properties of all the lamp components.		6	2	4
	PC3. Measure basic electrical parameters like resistance, current and voltage of different solar lamp electrical components.		8	2	6
	PC4. Test the solar panel to check if the Voltage at open circuit (VoC) and current at open circuit (IoC) are according to the specifications mentioned by the manufacturer		6	1	5

## NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

	PC5. Test the battery to check if it's voltage is within the range specified by the manufacturer		6	1	5
	PC6. Perform a continuity check of the load wire to check for any internal breakage		6	1	5
	PC7. Verify the PCB and LED as per technical specifications mentioned by the manufacturer		6	1	5
	PC8. Perform step by step procedure to assemble a solar Lamp		9	3	6
		<b>Total</b>	50	12	38
SGJ/N0202: Repair of Solar lamps	PC1. Perform visual inspection of the solar lamp.	50	6	2	4
	PC2. Measure and verify the terminal voltage of the battery as per manufacturer's specification.		6	1	5
	PC3. Measure and verify the voltage and current of solar PV modules with technical specifications		6	2	4
	PC4. Verify and replace the faulty switches and DC sockets		8	2	6
	PC5. Verify the connector pin and other components of a solar lamp		8	2	6
	PC6. Verify the working of a PCB/ LED drivers		10	2	8
	PC7. Prepare a basic repair and maintenance report.		6	2	4
		<b>TOTAL</b>	50	13	37
SGJ/N0147: Maintain personal health & safety in a manufacturing facility	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		8	3	5
	PC7. identify expiry dates and wear & tear issues of specified equipment		2	1	1
	PC8. demonstrate safe and accepted practices for personal protection		8	3	5
	PC9. identify environmental hazards associated with the manufacturing facility		4	2	2
	PC10. identify electrical hazards		4	2	2
	PC11. identify personal safety hazards or work site hazards and mitigate hazards		6	3	3
	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		5	2	3
		<b>Total</b>	50	24	26



# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

SGJ/N0106: Maintain Health and 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 manufacturing facility		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
	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 safety Power Plant in accordance with sequence and remove from worksite to clear work area.		2	1	1
	Total	50	29	21	

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

Options					
Option 1: Home Lighting System					
Total Marks:100				Marks Allocation	
NOS	Assessment Criteria for outcomes	Total Mark	Out Of	Theor y	Skills Practica l
SGJ/N0202: Assembly and Repair of solar home lighting systems	PC1. Verify physical properties of all the solar home lighting systems components.	100	8	4	4
	PC2. Measure basic electrical parameters like resistance, current and voltage of different electrical components of solar home lighting system.		8	2	6
	PC3. Test the solar panel to check if the Voltage at open circuit (VoC) and current at open circuit (IoC) are according to the specifications mentioned by the manufacturer		6	1	5
	PC4. Test the battery to check if it's voltage is within the range specified by the manufacturer		6	1	5
	PC5. Perform a continuity check of the load wire to check for any internal breakage		6	1	5
	PC6. Verify the PCB and LED as per technical specifications mentioned by the manufacturer.		6	1	5
	PC7. Perform step by step procedure to assemble a solar home lighting systems		12	2	10
	PC8. Perform visual inspection of the solar home lighting systems.		6	2	4
	PC9. Measure and verify the terminal voltage of the battery as per manufacturer's specification.		6	1	5
	PC10. Measure and verify the voltage and current of solar PV modules with technical specifications		6	2	4
	PC11. Verify and replace the faulty switches and DC sockets		6	1	5
	PC12. Verify the connector pin and other components of a solar home lighting systems		6	2	4
	PC13. Verify the working of a PCB/ LED drivers		6	1	5

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

	PC14. Verify the working of the charge controller		6	2	4
	PC15. Prepare a basic repair and maintenance report.		6	2	4
		TOTAL	100	25	75

<b>Options</b>					
<b>Option 1: Street lights</b>					
<b>Total Marks:100</b>			<b>Marks Allocation</b>		
<b>NOS</b>	<b>Assessment Criteria for outcomes</b>	<b>Total Mark</b>	<b>Out Of</b>	<b>Theor y</b>	<b>Skills Practica l</b>
SGJ/N0203: Assembly and Repair of solar street lights	PC1. Verify physical properties of all the street lights components.	100	8	4	4
	PC2. Measure basic electrical parameters like resistance, current and voltage of different electrical components of solar street light .		8	2	6
	PC3. Test the solar panel to check if the Voltage at open circuit (VoC) and current at open circuit (IoC) are according to the specifications mentioned by the manufacturer		6	1	5
	PC4. Test the battery to check if it's voltage is within the range specified by the manufacturer		6	1	5
	PC5. Perform a continuity check of the load wire to check for any internal breakage		6	1	5
	PC6. Verify the PCB and LED as per technical specifications mentioned by the manufacturer.		6	1	5
	PC7. Perform step by step procedure to assemble a solar Street lights		12	2	10
	PC8. Perform visual inspection of the solar street light.		6	2	4
	PC9. Measure and verify the terminal voltage of the battery as per manufacturer's specification.		6	1	5
	PC10. Measure and verify the voltage and current of solar PV modules with technical specifications		6	2	4

## NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

	PC11. Verify and replace the faulty switches and DC sockets		6	1	5
	PC12. Verify the connector pin and other components of a solar street lights		6	2	4
	PC13. Verify the working of a PCB/ LED drivers		6	1	5
	PC14. Verify the working of the charge controller		6	2	4
	PC15. Prepare a basic repair and maintenance report.		6	2	4
		TOTAL	100	25	75

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## 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.~~

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## OPTION A

Title/Name of qualification/component: Solar Off Grid Entrepreneur		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<p>The Solar Lighting Technician performs the following activities:</p> <ul style="list-style-type: none"> <li>• Assembly of different types of solar lamps</li> <li>• Repair solar lamp</li> <li>• Assembly of Solar home lighting systems</li> <li>• Repair Solar home lighting systems</li> <li>• Assembly of Solar Street Lights</li> <li>• Repair Solar Street Lights</li> </ul>	<p>The activities performed by Solar lighting Technician in limited range which they are very familiar with and they have very predictable, routine situation where they can make clear choices.</p>	4
Professional knowledge	<p>The Solar lighting Technician is required to possess the knowledge of :</p> <ul style="list-style-type: none"> <li>• Natural resources of energy</li> <li>• Voltage, Current and resistance.</li> <li>• Characteristics &amp; specifications of battery, solar module, PCB (Printed Circuit Board), LED (light-Emitting-Diode) load wire and other components of a solar home lighting systems as per the manufacturer.</li> <li>• Operating and working of a multimeter, soldering iron and other tools present in a tool kit.</li> <li>• Preliminary concepts of solar PV system</li> <li>• Complete assembly of a solar home lighting systems as per manufacturer</li> <li>• Warranties of different components of solar home lighting systems.</li> <li>• Ability to shape and direct working/process</li> </ul>	<p>The Technician has factual knowledge of the solar field and understand the basic knowledge of Electricity.</p>	4

## NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Solar Off Grid Entrepreneur		Level: 4	
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<p>methods according to self-defined criteria and effective management techniques</p> <ul style="list-style-type: none"> <li>• Standard operating procedures for carrying out visual inspection of solar home lighting systems.</li> <li>• Testing procedure for verifying the performance of all the components of a solar home lighting systems.</li> <li>• Structure of a basic repair and maintenance report.</li> </ul>		
Professional skill	<p>The Solar Lighting Technician has the following professional skills:</p> <ul style="list-style-type: none"> <li>• Follow organization based decision making process</li> <li>• Plan and organise work schedule to meet deadlines</li> <li>• Work constructively with others.</li> <li>• Adhere to organisation code of conduct</li> <li>• Recognise problems and search for solutions.</li> <li>• Choose the best methods to complete assigned tasks</li> <li>• Reduce repetition of errors</li> </ul>	A Solar Lighting Technician recalls and demonstrate practical skills, routine and repetitive in narrow range of application, using appropriate rule and tools.	4
Core skill	<p>The Solar Lighting Technician possesses the following Core Skills</p> <ul style="list-style-type: none"> <li>• Prepare and maintain documentation</li> <li>• Read and Understand “assembly and distribution training manuals” in English / Hindi / vernacular language.</li> <li>• Basic understanding of vernacular/local language</li> </ul>	A Solar Lighting technician communicates with required clarity. They also report their day to day activity. They know how to calculate with a basic understanding of social political and natural environment.	4

## NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Solar Off Grid Entrepreneur			Level: 4
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	<ul style="list-style-type: none"> <li>• Read user manuals and safety instructions</li> <li>• Express statements or information clearly so that others can hear and understand</li> <li>• Participate in and understand general discussions</li> <li>• Respond appropriately to any queries</li> <li>• Communicate with other employees in the organization</li> </ul>		
Responsibility	<p>A solar technician performs the following :</p> <ul style="list-style-type: none"> <li>• Identify different types of solar lamps</li> <li>• Verify physical properties of all the lamp components.</li> <li>• Measure basic electrical parameters like resistance, current and voltage of different solar lamp electrical components.</li> <li>• Test the solar panel to check if the Voltage at open circuit (VoC) and current at open circuit (IoC) are according to the specifications mentioned by the manufacturer</li> <li>• Test the battery to check if it's voltage is within the range specified by the manufacturer</li> <li>• Perform a continuity check of the load wire to check for any internal breakage</li> <li>• PC7. Verify the PCB and LED as per technical specifications mentioned by the manufacturer.</li> <li>• PC8. Perform step by step procedure to</li> </ul>	Solar Lighting Technician is Responsible for own work and learning.	4



# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

Title/Name of qualification/component: Solar Off Grid Entrepreneur			Level: 4
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
	assemble a solar lamp		

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## **SECTION 3** **EVIDENCE OF NEED**

### **What evidence is there that the qualification is needed?**

The government of India has launched the national solar mission which has an ambitious target of achieving 100 GW installed capacity from solar energy by 2022. Out of this 100 GW, 40 GW would be coming as rooftop solar projects and 60 GW would be coming as ground mount solar projects. The mission supplements India's INDC targets.

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 2030. 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 industry validations. 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. 10 times for this role. A minimum of 5763 of Solar lighting technicians by 2025 are estimated. 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.

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## **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. Conducted workshops with industry professionals for defining and validating the career progression/ occupational map
3. Exploring various lateral career opportunities for the discussed qualification

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.~~

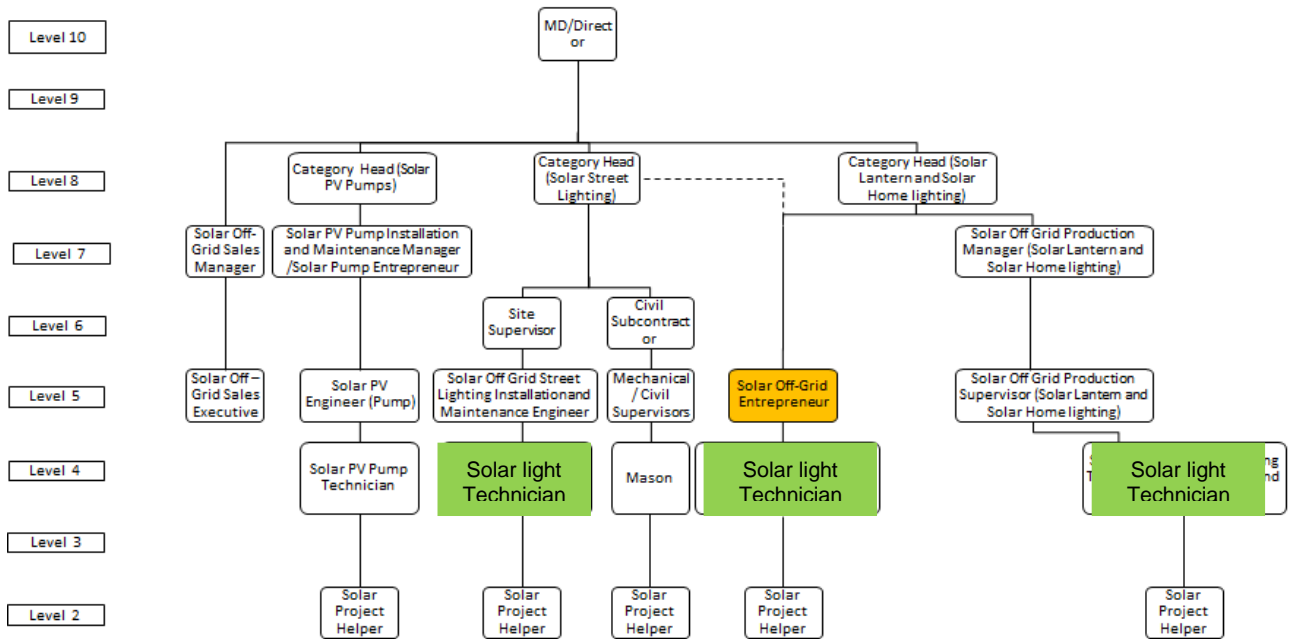
1. Career Map of Solar Off Grid Entrepreneur- Annexure 1

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## Annexure 1: Career Map

### Solar - Off Grid



# NSQ QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## ANNEX A

### NSQ LEVEL DESCRIPTORS

LEVEL	Process required	Professional knowledge	Professional skill	Core-skill	Responsibility
1	Prepares person to/carry out process that are repetitive on regular basis require no previous practice,	Familiar with common trade terminology, instructional words, meanings and understanding.	Routine and repetitive, takes safety and security measures.	Reading and writing; addition, subtraction; personal financing; familiarity with social and religious diversity, hygiene and environment.	No responsibility; always works under continuous instruction and close supervision.
2	Prepares person to/carry out processes that are repetitive, on a regular basis, with little application of understanding, more of practice.	Material, tools and applications in a limited context, understands context of work and quality.	Limited service skills used in limited context; select and apply tools; assist in professional works with no variables; differentiate good and bad quality.	Receive and transmit written and oral messages, basic arithmetic, personal financing, understanding of social, political, and religious diversity, hygiene and environment.	No responsibility; works under instruction and close supervision.
3	Person may carry out a job which may require limited range of activities routine and predictable.	Basic facts, process and principle applied in trade of employment.	Recall and demonstrate practical skill, routine and repetitive in narrow range of application	Communication written and oral, with minimum required clarity, skill of basic arithmetic and algebraic principles, personal banking, basic understanding of social and natural environment.	Under close supervision. Some responsibility for own work within defined limit.

# NSQ QUALIFICATION FILE

Version 6: Draft of 08 March 2016

LEVEL	Process required	Professional knowledge	Professional skill	Core-skill	Responsibility
4	Work in familiar, predictable, routine, situation of clear choice.	Factual knowledge of field of knowledge or study.	Recall and demonstrate practical skill, routine and repetitive in narrow range of application, using appropriate rule and tool, using quality concepts.	Language to communicate written or oral, with required clarity, skill to basic arithmetic and algebraic principles, basic understanding of social-political and natural environment.	Responsibility for own work and learning.
5	Job that requires well developed skill, with clear choice of procedures in familiar context.	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	Desired mathematical skill; understanding of social, political; and some skill of collecting and organising information, communication.	Responsibility for own work and learning and some responsibility for others' works and learning.
6	Demands a wide range of specialised technical skill, clarity of knowledge and practice in broad range of activity involving standard and non-standard practices.	Factual and theoretical knowledge in broad contexts within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Reasonable good in mathematical calculation, understanding of social, political and reasonably good in data collecting organising information, and logical communication.	Responsibility for own work and learning and full responsibility for other's works and learning.
7	Requires a command of wide-ranging specialised theoretical and practical skills, involving	Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or	Wide range of cognitive and practical skills required to generate solutions to specific	Good logical and mathematical skill understanding of social-political and natural environment and organising	Full responsibility for output of group and development.

# NSQ QUALIFICATION FILE

Version 6: Draft of 08 March 2016

LEVEL	Process required	Professional knowledge	Professional skill	Core-skill	Responsibility
	variable routine and non-routine contexts.	study.	problems in a field of work of study.	information, communication and presentation skill.	
<b>8</b>	Comprehensive, cognitive, theoretical knowledge and practical skills to develop creative solutions to abstract problems. Undertakes self study; demonstrates intellectual independence, analytical rigour and good communication.			Exercise management and supervision in the context of work/study having unpredictable changes; responsible for the work of others.	
<b>9</b>	Advanced knowledge and skill. Critical understanding of the subject, demonstrating mastery and innovation, completion of substantial research and dissertation.			Responsible for decision making in complex technical activities involving unpredictable work/study situations.	
<b>10</b>	Highly specialised knowledge and problem solving skill to provide original contribution to knowledge through research and scholarship.			Responsible for strategic decisions in unpredictable complex situations of work/study.	

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

## ANNEX B

### NSQF LEVEL OUTLINES

#### NSQF levels related to the labour market

~~Level 1: Work requiring knowledge, skills and aptitudes at level 1 will be routine, repetitive, and focused on limited tasks carried out under close supervision. In some sectors, people carrying out these job roles may be described as “helpers”.~~

~~Individuals in jobs which require level 1 qualifications may be expected to be able to read, write, add and subtract, but will not normally be required to have any previous knowledge or skills relating to the work<sup>1</sup>.~~

~~When employed, they will be instructed in their tasks and expected to learn and use the common terminology of the trade and acquire the basic skills necessary for the work.~~

~~Job holders at this level will be expected to carry out the tasks they are given safely and securely and to use hygienic and environmentally friendly practices. This means that they will be expected to take some responsibility for their own health and safety and that of fellow workers.~~

~~In working with others, they will be expected to respect the different social and religious backgrounds of their fellow workers.~~

~~Level 2: Work requiring knowledge, skills and aptitudes at level 2 will also be routine and repetitive, and tasks will be carried out under close supervision. The individuals will not be expected to deal independently with variables which affect the carrying out of the work. People carrying out these work roles may be described as “assistants” and the range of tasks they carry out will be limited.~~

~~Individuals in jobs which require level 2 qualifications will normally be expected to be able to read and write, add and subtract. Their work may involve taking and passing on messages.~~

~~They may also be expected to have some previous experience, knowledge and skills in the occupation. When employed, they will be instructed in their tasks and expected to acquire the practical skills necessary to assist skilled workers and/or give a limited service to customers. They will learn about, and use, the materials, tools and applications required to carry out basic tasks in an occupation. They may have to select the appropriate materials, tools and/or applications to carry out tasks.~~

~~They will be expected to understand what constitutes quality in their job role and distinguish between good and bad quality in the context of the tasks they are given. Job holders at this level will be expected to carry out the tasks they are given safely and securely and to use hygienic and environmentally friendly practices. This means that they will be expected to take some responsibility for their own health and safety and that of fellow workers and, where appropriate, customers.~~

~~In working with others, they will be expected to respect the different social and religious backgrounds of their fellow workers, but their contribution to team work may be limited.~~

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<sup>1</sup> In practice many workers at this level will have limited literacy and NOS and qualifications at this levels should reflect this — eg in relation to assessment.



# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

~~Level 3: Work requiring knowledge, skills and aptitudes at level 3 will be routine and predictable. Job holders will be responsible for carrying out a limited range of jobs under close supervision. Their work may require the completion of a number of related tasks. People carrying out these job roles may be described as “partly-skilled workers”.~~

~~Individuals in jobs which require level 3 qualifications will normally be expected to be able to communicate clearly in speech and writing and may be required to use arithmetic and algebraic processes. They will be expected to have previous knowledge and skills in the occupation and should know the basic facts, processes and principles applied in the trade for which they are qualified and be able to apply the basic skills of the trade to a limited range of straightforward jobs in the occupation.~~

~~They will be expected to understand what constitutes quality in their job role and more widely in the sector or sub-sector and to distinguish between good and bad quality in the context of the jobs they are given. Job holders at this level will be expected to carry out the jobs they are given safely and securely. They will work hygienically and in ways which show an understanding of environmental issues. This means that they will be expected to take responsibility for their own health and safety and that of fellow workers and, where appropriate, customers and/or clients.~~

~~In working with others, they will be expected to conduct themselves in ways which show a basic understanding of the social environment. They should be able to make a good contribution to team work.~~

~~Level 4: Work requiring knowledge, skills and aptitudes at level 4 will be carried out in familiar, predictable and routine situations. Job holders will be responsible for carrying out a range of jobs, some of which will require them to make choices about the approaches they adopt. They will be expected to learn and improve their practice on the job. People carrying out these jobs may be described as “skilled workers”.~~

~~Individuals in jobs which require level 4 qualifications should be able to communicate clearly in speech and writing and may be required to use arithmetic and algebraic processes. They will be expected to have previous knowledge and skills in the occupation in which they are employed, to appreciate the nature of the occupation and to understand and apply the rules which govern good practice. They will be able to make choices about the best way to carry out routine jobs where the choices are clear.~~

~~They will be expected to understand what constitutes quality in the occupation and will distinguish between good and bad quality in the context of their job roles. Job holders at this level will be expected to carry out their work safely and securely and take full account of the health and safety of colleagues and customers. They will work hygienically and in ways which show an understanding of environmental issues.~~

~~In working with others, they will be expected to conduct themselves in ways which show a basic understanding of the social and political environment. They should be able to guide or lead teams on work within their capability.~~

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

~~Level 5: Work requiring knowledge, skills and aptitudes at level 5 will also be carried out in familiar situations, but also ones where problems may arise. Job holders will be able to make choices about the best procedures to adopt to address problems where the choices are clear.~~

~~Individuals in jobs which require level 5 qualifications will normally be responsible for the completion of their own work and expected to learn and improve their performance on the job. They will require well developed practical and cognitive skills to complete their work. They may also have some responsibility for others' work and learning. People carrying out these jobs may be described as "fully skilled workers" or "supervisors".~~

~~Individuals employed to carry out these jobs will be expected to be able to communicate clearly in speech and writing and may be required to apply mathematical processes. They should also be able to collect and organise information to communicate about the work. They will solve problems by selecting and applying methods, tools, materials and information.~~

~~They will be expected to have previous knowledge and skills in the occupation, and to know and apply facts, principles, processes and general concepts in the occupation.~~

~~They will be expected to understand what constitutes quality in the occupation and will distinguish between good and bad quality in the context of their work. They will be expected to operate hygienically and in ways which show an understanding of environmental issues. They will take account of health and safety issues as they affect the work they carry out or supervise.~~

~~In working with others, they will be expected to conduct themselves in ways which show an understanding of the social and political environment.~~

~~Level 6: Work requiring knowledge, skills and aptitudes at level 6 will require the use of both standard and non-standard practices. Job holders will carry out a broad range of work which will require a wide range of specialised technical skills backed by clear factual and theoretical knowledge.~~

~~Individuals in jobs which require level 6 qualifications will normally be responsible for the completion of their own work and expected to learn and improve their performance on the job. They are likely to have full responsibility for others' work and learning. People carrying out these jobs may be described as "master technicians" and "trainers".~~

~~Individuals employed to carry out these job roles will be expected to be able to communicate clearly in speech and writing and may be required to carry out mathematical calculations. They should also be able to collect data, organise information, and communicate logically about the work. They will solve problems by selecting and applying methods, tools, materials and information.~~

~~They will be expected to have broad factual and theoretical knowledge applying to practice within the occupation, and a range of practical and cognitive skills. They will be able to generate solutions to problems which arise in their practice.~~

~~They will be expected to understand what constitutes quality in the occupation and to distinguish between good and bad quality in the context of all aspects of their work. They will be expected to work in ways which show an understanding of environmental issues. They will take account of health and safety issues as they affect the work they carry out or manage.~~

~~In working with others, they will be expected to conduct themselves in ways which show an understanding of the social and political environment.~~

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

~~**Level 7:** Work requiring knowledge, skills and aptitudes at level 7 will take place in contexts which combine the routine and the non-routine and are subject to variations. Job holders will carry out a broad range of work which requires wide-ranging specialised theoretical and practical skills.~~

~~Individuals in jobs which require level 7 qualifications will normally be responsible for the output and development of a work group within an organisation. People carrying out these job roles are likely to be graduates. They may be described as “managers” or “senior technicians”.~~

~~Individuals employed to carry out these job roles will be expected to be able to communicate clearly in speech and writing and are likely to be required to carry out mathematical calculations as part of their work. They should also be skilful in collecting and organising information to communicate logically about the work.~~

~~They will be expected to have wide-ranging factual and theoretical knowledge of practice within the occupation, and a wide range of specialised practical and cognitive skills. They will be able to generate solutions to problems which arise in their work.~~

~~They will be expected to understand what constitutes quality in the occupation and distinguish between good and bad quality in all aspects of their work. They will be expected to work in ways which show a good understanding of environmental issues. They will take account of health and safety issues as they affect the work they carry out and manage.~~

~~In working with others, they will be expected to conduct themselves in ways which show a good understanding of the social and political environment.~~

~~**Level 8:** Individuals in jobs which require level 8 qualifications will normally be responsible for managing the work of a team and developing the team. The work will involve dealing with unpredictable circumstances affecting the work.~~

~~Their work will require the use of comprehensive knowledge and understanding of the occupational field and a commitment to self-development.~~

~~They will normally need an ability to develop creative solutions to problems requiring abstract thought. They will be required to show intellectual independence and a rigorous analytical ability. They will need to be good communicators.~~

~~**Level 9:** Individuals in jobs which require level 9 qualifications will normally be responsible for complex decision-making in unpredictable contexts.~~

~~They will have to exercise senior responsibility in an organisation and show mastery of the issues in the occupation and the ability to innovate.~~

~~Their work will require the use of advanced knowledge and skill. They may make contributions to knowledge in their field through research.~~

~~**Level 10:** Job Individuals in jobs which require level 10 qualifications will normally be responsible for strategic decision-making. The context of their work will be complex and unpredictable.~~

~~They are likely to be responsible for an organisation or a significant division of an organisation. They will have to provide leadership.~~

# NSQF QUALIFICATION FILE

Version 6: Draft of 08 March 2016

~~Their work will require highly specialised knowledge and problem-solving skills. They may make original contributions to knowledge in their field through research, scholarship or innovative practice.~~