

NSQF QUALIFICATION FILE

Approved in 14th NSQC Meeting – NCVET – 30th December, 2021

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Skill Council for Persons with
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NCVET Code

2021/PWD/SCPWD/04883

Name and contact details of individual dealing with the submission

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List of documents submitted in support of the Qualification File

1. Guidelines for Persons with Speech and Hearing Impairment for Assessors.
2. List of Assistive Tools, Trainer Pre-requisites and Break up of proposed extended hours.

QUALIFICATION FILE SUMMARY

1	Qualification Title	Solar PV Installer (Suryamitra)-PwD SHI
2	Qualification Code, if any	PWD/SGJ/Q0101, v2.0
3	NCO code and occupation	NCO-2015/7421.1401 Solar Panel Installation Technician
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term)	Nature: Skill Certification on Solar PV Plant installation and operation. Purpose: The course aims to provide sound knowledge and skills to check, adapt, implement, configure, install, inspect, test and commission different components of a photovoltaic system.
5	Body/bodies which will award the qualification	Skill Council for Persons with Disability (SCPwD)
6	Body which will accredit providers to offer courses leading to the qualification	Skill Council for Persons with Disability (SCPwD)
7	Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)	Yes
8	Occupation(s) to which the qualification gives access	Solar Panel Installation Technician
9	Job description of the occupation	Solar PV Installer checks, adapts, implements, configures, installs, inspects, tests, and commissions different components of photovoltaic systems, that meet the performance and reliability needs of customers by incorporating quality craftsmanship and complying with all applicable codes, standards, and safety requirements.
10	Licensing requirements	N/A
11	Statutory and Regulatory requirement of the relevant sector (documentary)	N/A

	evidence to be provided)	
1 2	Level of the qualification in the NSQF	4
1 3	Anticipated volume of training/learning required to complete the qualification	390 Hours

14	Indicative list of training tools required to deliver this qualification	1KWp Solar PV grid connected system with all accessories for demonstration purposes, Wire Crimping, Stripping and Cutting Tool (s), Electrician Knife, Hack Saw Frame with Blade, Hand Crimping Tools, Cable Cutter, Screw Driver, Water Level, Measuring Tape, Standard Wire Gauge, Vernier Calliper, Hand Drill M/C, Sprit Level, Clampmeter, Multimeter, Megger, Earthing Rod, Soldering Iron & Flux, System service logbook, Phase Sequence Meter, Electrical Tape, First aid kit, Safety goggles, Safety gloves, Safety helmet, Safety shoes Whiteboard, marker, duster, projector, laptop, power point presentation, training kit (Trainer guide, Presentations), Assistive Aid/Service, Ai-Live, Captions First, Captions 2020, Closed Capp, Let's Talk, LCD TV, Visual curricula, Computer.		
15	Entry requirements and/or recommendations and minimum age	10th pass + ITI / Diploma (Electrical, Electronics, Civil, Mechanical, Fitter, Instrumentation/Welder) Minimum Age: 18 years		
16	Progression from the qualification (Please show Professional and academic progression)	Vertical Progression: Solar PV O&M Engineer (Level 5)		
17	Arrangements for the Recognition of Prior learning (RPL)	RPL assessment will be as per defined SCPwD assessment process.		
18	International comparability where known (research evidence to be provided)	To be established		
19	Date of planned review of the qualification	27/05/2025		
20	Formal Structure of the Qualification Mandatory/ Optional Components			
	Speech and Hearing Impairment			
	Title of component and identification code/NOS/Learning Outcomes	Mandatory /Optional	Estimated Size (Learning Hours)	Level

(i)	Learn basic Indian Sign Language (ISL) (Bridge Module -PwD)	Mandatory	30	NA
(ii)	Use basic English (Bridge Module -PwD)	Mandatory	40	NA
(iii)	Personal and Social skills (Bridge Module -PwD)	Mandatory	10	NA
(iv)	Professional & Ethical behaviour in the workplace (Bridge Module -PwD)	Mandatory	10	NA
(vi)	Introduction to Solar PV Installer (Suryamitra) Course (SGJ/N0101)	Mandatory	6	4
(vii)	Basics of Solar energy and Electrical concepts (SGJ/N0101)	Mandatory	12	4
(viii)	Basics of Solar Photovoltaic systems and its components (SGJ/N0101, SGJ/N0102)	Mandatory	48	4
(ix)	Identification and use of different tools and tackles used for installation of solar PV system (SGJ/N0103, SGJ/N0104)	Mandatory	16	4
(x)	Site Survey for Installation of Solar PV System and assess the customer's Solar PV requirements (SGJ/N0101, ELE/N5903)	Mandatory	20	4
(xi)	Interpretation of Drawings, Material Handling and storage of components onsite (SGJ/N0102)	Mandatory	18	4
(xii)	Installation and mounting structure and photovoltaic modules, battery stand and inverter stand as per drawings (SGJ/N0103)	Mandatory	30	4
(xiii)	Installation of Electrical components of a Solar PV System (SGJ/N0104)	Mandatory	42	4
(xiv)	Test and Commission Solar PV system (SGJ/N0105)	Mandatory	24	4
(xv)	Maintain Solar Photovoltaic System (ELE/N6001)	Mandatory	60	4
(xvi)	Workplace Health, Safety & Hygiene at project site (SGJ/0106)	Mandatory	15	4
(xvii)	Completion and Handover Documentation (SGJ/0107)	Mandatory	9	4
	Sub Total		390	

Section 1

ASSESSMENT

21	<p>Body/Bodies which will carry out assessment:</p> <p>Name of Assessment Agency (AA):</p> <ul style="list-style-type: none">• IRIS-Corporate Solutions Private Limited• Mercer Mettl <p>The list of Assessment Agencies is not limited to above and can extend basis their empanelment with SCPwD and having certified Assessor for the Job role from Domain SSC as well as SCPwD</p>
22	<p>How will RPL assessment be managed and who will carry it out?</p> <p>RPL will be based on the same approved Qualification Pack and Assessment Criteria mentioned in the Qualification Pack. RPL assessment is carried out in the same way as the assessment for fresh training.</p>
23	<p>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.</p> <p>ASSESSMENT PROCESS</p> <p>NOTE: SCPwD adopts the Criteria of the Domain SSC and Assessment is conducted by the AA's which are approved by the Domain SSC as well as empaneled with SCPwD. SCPwD develops Assessment guidelines for Persons with Blindness, Low vision, <u>Speech and Hearing Impairment</u> to assist the assessors during assessment of the candidate. SCPwD conducts Training of Assessors (ToA) and provide them Disability Orientation and Sensitization.</p> <p>Process followed by SCPwD for assessments: Being a Horizontal Council, the prerequisites to the assessment process shared by the Domain SSC is followed mandatorily by the Assessment Agencies. Additionally, they must also follow the guidelines of SCPwD. Below is the assessment process in brief:</p> <p>Pre-Assessment Phase-</p> <ol style="list-style-type: none">1. Batch allocated to the Assessment Agency by SCPwD through Portal/ Email.2. Assessment Agency to connect with Training Provider and communicate/confirm the date of assessment through email.3. Assessment Agency to share requisite lab infrastructure & checklist with TP and discuss about the availability through email.4. Assessment Agency aligns the Assessor for the assessment (Assessor

should be DualCertified by the Domain SSC as well as SCPwD, and the certification should be valid).

5. Prepare the Assessment link, formats and share with the Assessor over an email.
6. Share the Assessment demo link with the Training Partner over an email.

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Assessment Phase-

1. The Assessor verifies the identity and disability through Aadhar Card and Disability Certificate and reports to SCPwD in-case of any discrepancy [*In case of J&K and NE Voter ID & Pan Card also allowed for Candidates Identification*].
2. The candidates are briefed on the assessment process (Prior to starting of the assessment).
3. The Assessor verifies the lab equipment and reports to SCPwD in-case of any variance.
4. Post validation of photo Id proof for each candidate, attendance of candidate is captured according to the scheme's requirement. i.e., under PMKVY, attendance of the candidates is captured through Aadhar Enabled Assessor Application, however, under other schemes candidates sign the attendance sheet.
5. The candidates attempt the assessment on TAB/Computer System.
6. The Assessor takes the photos and videos of respective activities and completes the documentation formalities.

Post Assessment Phase-

1. The Assessment Agency prepares the result based on responses captured in the server.
2. The Assessment Agency shares the result with SCPwD in the prescribed format.

SECTION 2

24	<p>What evidence is there that the qualification is needed?</p> <p>The Job role has been shortlisted and mapped for Persons with Speech and Hearing Impairment based on demand from the Industry, Training Partners, Experts and views from the reverent Persons with Speech and Hearing Impairment themselves.</p>
25	<p>What is the estimated uptake of this qualification and what is the basis of this estimate?</p> <p>Given the global movement towards a sustainable development approach, the Indian Green Jobs sector is of immense importance with respect to its contribution to environment preservation as well as the country's growth. It is one of the most innovative and wide scoped industries in our country. For instance, a shift from the conventional transport system to a</p>

greener system is vital for the socio-economic improvement of a country. Similarly, the renewable energy industry would aid in employment creation and economic furtherance. India, an active member and participant of the Paris Agreement, is giving utmost attention to sustainable development and environment preservation. Our government has brought several schemes into action in order to improve sustainability.

In all, the overall performance and futuristic approach of India's Green Jobs sector is commendable. The incredible potential this industry holds is a definite boost to our country. The Green Jobs scope covers the entire gamut of "Green Businesses", viz. Renewable Energy, Energy Storage, Green Construction, Green Transportation, Carbon Sinks, Solid Waste Management, Water Management & E-Waste Management, and hence would have pan India impact. Green Businesses would encompass all forms of Renewable Electricity/ Fuels, Municipal/ Farm Waste & Urban/ Rural Water Management, Green Construction, Green Transport and Carbon Sinks.

India's shift to a green economy could add 3 million jobs in the renewable energy sector alone by 2030, estimated the International Labour Organization. This sector created 47,000 new jobs in India in 2017, employing 432,000 people, as per a July 2018 India Spend report. Despite limited data, solar and wind renewable energy is estimated to have created nearly 70,000 FTE jobs in India so far, analysis by the Natural Resources Defense Council (NRDC) and the Council on Energy, Environment and Water (CEEW).

The expected incremental demand for people to work is 8.47 million skilled persons by 2022. Around 18.8 million people are estimated to require vocational education between 2017 and 2030. Of them, 7.5 million should come from the existing workforce and 11.3 million from a fresh pool. This population includes informal workers in the agriculture and non-agriculture sectors, school dropouts, those completing secondary and higher secondary education, and young women looking for work. The sector opens promising opportunities for young and deserving individuals who are creative, have the requisite skills and think refreshingly. Owing to growing awareness among employers on the business perspective, Persons with Disability bring to the company with their diverse skills and commitment there is no dearth of opportunities for them in this Sector.

The rapid change in technology and innovation, and the dynamic nature of market demand and supply have all contributed to the skill gap in the green industry. The training the green workers receive does not suffice the needs of the ever-growing green sector. This brings in a new need for re-skilling and up skilling, especially in sectors like renewable energy where the requirements are subject to constant change.

Since use of technology has been integral in the training of PwD, youth with disability should be skill trained and empowered so that they can lead a life of

	dignity and contribute in nation building.
26	Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences Attached

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27	<p>What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification</p> <p>Non duplication has been ensured by the Domain SSC.</p>
28	<p>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? Specify the review process here</p> <p>The Qualification Solar Panel Installation-Suryamitra was adopted based on the industry demand for Persons with Disability. SCPwD develops disability specific Expository which contains expounded information on tools/technology /assistive devise for specific disability. The QP is revised at frequent intervals by Domain SSC, to capture updates in the sector. Similarly, Expository is also reviewed and revised to capture updates on any further development /innovations in the specific disability for facilitating the trainers as well as the assessors in addition to the learners. It may be noted that as and when the Domain SSC revises the QP corresponding adoption and updating is done by SCPwD in the related Job Role.</p>

**Annexure 1: Guidelines for the assessment of Persons with Speech
and Hearing Impairment**

Common guidelines for assessment of Trainees from all the categories of Disability

- Validate the type of Disability of the candidate along with the original Disability Certificate (Please note: In PMKVY, the batch should not have the candidates with Multiple Disabilities and the Disability type should be same as provided in SDMS).
- Do ask questions openly. Do not assume anything. For example, ask your trainees with disability if they need any change in the kind of assessment setup provided.
- Be prepared to make your assessments person-specific including the practical part too without compromising on the criteria set up by the Domain SSC.

- Provide the candidate with the desired assistive devices which may vary from candidate to candidate.
- Do understand that every trainee with disability has a journey: he/she are likely to have identified solutions that best work for him/her. Do not expect your trainees with disability to go through the same processes with the same rigour as your trainees without disability.
- Remember that your trainees with disability are going to work with persons without disability. Pitying, belittling or lowering the standards would defeat the purpose.
- An extension of 20 minutes per hour is recommended. This can be further increased as per circumstances/ requirement of the candidate (for details please refer to the Examination Guideline developed by MSJE).
- Services of scribe/ writer/ reader/ lab assistant should be allowed to any person who has Disability of 40% or more if so desired by the person.
- General comfort of the candidate should be kept in view inside the assessment room.
- Follow the health/ safety guidelines if any issued by the authorities.

Specific Guidelines

- Do not shout at a Person with Hearing Impairment unless they request you to. Just speak in a normal tone but make sure your lips are visible.
- Keep conversations clear and try minimizing unnecessary noise in the background.
- If you are asked to repeat yourself, answering “nothing, it’s not important” implies that the person is not worth repeating yourself. It is demeaning; be patient and comply.
- Show consideration by facing the light source and keeping things (such as your hands) away from your mouth while speaking.
- Look directly at and speak directly to the person rather than looking at the interpreter or any other person who may accompany the individual.
- Follow the person’s cues to find out if they prefer sign language, gesturing, writing or speaking.
- Make sure the room is well lit to allow the student to see your facial expression, signing and/or lip read.
- Question paper should have more visuals/pictures for better understanding.

Annexure 2: Assistive Tools, Trainer Pre-requisites and Break up of proposed extended hours

List of tools/equipment to conduct the training

Any of the following tools may be used during the training of Persons with Speech and Hearing Impairment

- Assistive Aid/Service
- Ai-Live
- Captions First
- Captions 2020
- Closed Capp
- Let's Talk
- LCD TV
- Visual curricula
- Computer

Please note that for the conduction of the training for Speech and Hearing Impairment SCPwD recommends Indian Sign Language Interpreter (ISL) as a mandatory human resource.

Trainer Qualification

Minimum Educational Qualifications: ITI /Diploma (Electrical, Electronics) or B. Tech (Civil / Electrical / Electronics / Electrical and Electronics Eng.) or MSc Physics or the education qualification can be relaxed in case of extraordinary relevant field experience.

Experience: Minimum 3 years of relevant industry experience for ITI /Diploma (Electrical, Electronics) or Minimum 2 years of relevant industry experience for B. Tech (Civil / Electrical / Electronics / Electrical and Electronics Engineering).

In addition to Domain SSC (as above) Disability specific additional requirement for the trainer **Disability specific Top Up module:** The Inclusive Trainer should be certified by SCPwD with minimum accepted score of 80% as per SCPwD guidelines in Disability Specific Top Up training / QP of Trainer-PwD.

The Indian Sign Language Interpreter should be mandatory during the training, counselling and placement of Persons with Speech and Hearing Impairment. A Certification by Indian Sign Language Research and Training Centre (ISLRTC) or Ali Yavar Jung National Institute of Speech and Hearing Disabilities (Divyangjan) (AYJNISHD(D)) will be desirable.

Experience: For Sign Language Interpreter 2/3 Years of experience in their own field of training will be desirable.

Training Duration

Break up of pre training/ foundation course:

S.N O.	MODULE	THEORY (hours)	PRACTICAL (hours)	TOTAL (hours)
1	Learn basic Indian Sign Language (ISL)	15	15	30
2	Use basic English	25	15	40
3	Personal and Social skills	08	02	10
4	Professional & Ethical behaviour in the workplace	08	02	10
Grand Total		56	34	90

Total **additional hours** recommended by SCPwD for Solar PV Installer (Suryamitra) are 90.