NSQF QUALIFICATION FILE

NCVET Code
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CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

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List of documents submitted in support of the Qualification File

1. Model Curriculum (Annexure-I)
2. Annexure O (Annexure-II)

NSQF QUALIFICATION FILE

SUMMARY

1	Qualification Title:	Junior Technician- Solar EV charging station
2	Qualification Code, if any: -	SGJ/Q4001
3	NCO code and occupation: -	NCO-2015/3113.0101 Technician
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term):	**Nature:** This Qualification contains National Occupation Standards for performing work related to the Installation along with Operation & Maintenance (O&M) of Solar Powered EV Charging station. **Purpose of the qualification:** Increasing the fleet of electric vehicles (EV) and supporting charging infrastructure in India are key to improving air quality, enhancing energy security by reducing dependence on imported crude oil, and mitigating climate change. India aims to have at least 30 percent of new vehicle sales be electric by 2030 and could potentially have 102 million EVs on the road[1]. A widespread, accessible and cost-effective public charging infrastructure network is critical to support a robust EV market across the country. Studies also suggest that, Electric Vehicles (EV), as compared to Internal Combustion engine (ICE) based vehicles, have considerably lower greenhouse gas emissions that can even be brought down to zero, provided green electricity is used for their charging. In that context, Solar Powered' Electric Vehicle Charging Stations are getting a lot of focus, as Global trends also indicate that both the EV and Solar industry has been witnessing an exponential growth over the recent past. As India embarks on strengthening its EV charging infrastructure, a large number of skilled Technicians would be required to Install, operate and maintain Solar Powered EV

[1] CEEW, Financing India's Transition to Electric Vehicles: A USD 206 Billion Market Opportunity (FY21 - FY30), December 2020,

		charging stations, as per the industry practice. The skilled workforce shall be employed with EV charging stations operators including at Public Charging Stations and Captive Charging Stations along with EV manufacturers/OEMs or the companies who supply equipment for setting up charging infrastructure.
5	Body/bodies which will award the qualification:	Skill Council for Green Jobs
3	Body which will accredit providers to offer courses leading to the qualification:	Skill Council for Green Jobs
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:	Installation, Operation & maintenance along with Testing and Commissioning solar powered EV Charging station
9	Job description of the occupation:	Junior Technician- Solar EV charging station performs tasks while ensuring safety, quality and good workmanship for installation, usage along with O&M of solar powered Electric Vehicle (EV) charging station as per standard industry practices. He/She may also conduct site surveys and evaluate various parameters to decide the suitability of site for the installation of solar powered EV charging station. Also, the individual performs the regular maintenance for Solar powered charging station.
10	Licensing requirements:	NA
11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided):	-
12	Level of the qualification in the NSQF:	Level 3
13	Anticipated volume of training/learning required to complete the qualification:	330 Hours including 270 hours of mandatory NOS (with 30 hours of employability module) and 60 hours of On the Job (OJT) training
14	Indicative list of training tools required to deliver this qualification:	As per Model Curriculum attached

15	Entry requirements and/or recommendations and minimum age:	8th Class Pass + NTC (2 years) **OR** 10th Class Pass **OR** Certified on relevant NSQF Level 2 (e.g. Solar PV Project Helper), with 2 years of relevant experience 16 Years
16	Progression from the qualification:	Vertical Progression: Solar EV Charging Entrepreneur
17	Arrangements for the Recognition of Prior learning (RPL):	SCGJ recognizes that there may be candidates who have prior learning experience in the EV charging station Sector and are desirous of being certified for working in Solar Powered EV charging station. •Propose to carry out RPL for candidates working with Electric vehicle industry/ Auto sector •Identify the candidates through training need analysis of the Solar and Electric vehicle manufacturing sector. •Develop the RPL Training Delivery Plan and bridge course for bridging the skill gap
18	International comparability where known (research evidence to be provided):	ISCO-08/3113
19	Date of planned review of the qualification:	16 Nov 2025
20	Formal structure of the qualification Mandatory/Optional components	

	Title of component and identification code/NOSs/Learning outcomes	**Mandatory /Optional/Elective**	**Estimated size (learning hours)**	**Level**

	Common Module			
(I)	SGJ/N4001 *Basics* of solar powered EV charging station and evolving opportunities	Mandatory	15	3
(II)	SGJ/N4001 *Elements of Solar EV charging station system*	Mandatory	15	3
(III)	SGJ/N4001 *Site survey and discuss key prerequisites for Solar EV charging station installation as per concerned guidelines*	Mandatory	30	
(IV)	SGJ/N4002 Installation of Solar Plant and its components for EV Charging station	Mandatory	60	3
(V)	SGJ/N4002 Installation of key components of EV charging station.	Mandatory	**30**	3
VI	SGJ/N4003 Testing and commissioning of Solar EV charger and BESS system	Mandatory	30	3
VII	SGJ/N4004 Perform Operation, Maintenance and Monitoring of Solar integrated EV charging station	Mandatory	30	3
VIII	SGJ/N4005 Maintain Personal Health and Safety at Solar EV charging project site	Mandatory	30	4
	On the Job Training(OJT)		**60**	
IX	DGT/VSQ/N0101 **Employability Skills(ES)**		**30**	
	330 Hours including 270 hours of mandatory NOS (with 30 hours of employability module) and 60 hours of On the Job (OJT) training		**330**	

SECTION 1
ASSESSMENT

21	**Body/Bodies which will carry out assessment:** Skill Council for Green Jobs through its affiliated and accredited Assessment Agency
22	**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. Final assessment will be carried out by affiliated Assessment Agency of SCGJ, as per RPL Policy and Guidelines
23	**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.** 1. Assessment System Overview: • Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email • Assessment agencies send the assessment confirmation to VTP/TC looping SSC • Assessment agency deploys the ToA certified Assessor for executing the assessment • SSC monitors the assessment process & records 2. Testing Environment: • Confirm that the centre is available at the same address as mentioned on SDMS or SIP • Check the duration of the training. • Check the Assessment Start and End time to be as 10 a.m. and 5 p.m. • Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

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

4. Types of evidence or evidence-gathering protocol:

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

5. Method of verification or validation:

- Surprise visit to the assessment location
- Random audit of the batch
- Random audit of any candidate

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

24. Assessment evidences

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Junior Technician- Solar EV charging station

Qualification Pack SGJ/N

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.

Outcome, Please refer to the QP-NOS for the Assessment outcome

SECTION 2
25. EVIDENCE OF LEVEL

OPTION A

Title/Name of qualification/component: Junior Technician- Solar EV charging station			**Level: 3**
NSQF Domain	**Outcomes of the Qualification/Component**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
Process	Junior Technician- Solar EV charging station is responsible for the following processes: • Perform the site feasibility for identify suitable location for the installation of Solar Powered EV charging station. • inspect the civil foundation for suitability as required for electric vehicle (EV) charging station erection • check if the relevant permits and permissions have been taken and are in order • perform Installation and commissioning tasks Perform Operation and maintenance of solar powered EV charging station. • check the connections of the conductive parts with the supply voltage source as per standard practice	The individual carries out a limited range of activities which are essentially routine and predictable in nature and hence is pegged at level 3	3
Professional knowledge	Junior Technician- Solar EV charging station is able to perform his/her task properly common terminology used in installation	Junior Technician- Solar EV charging station - should have basic facts and knowledge related to Installation and Commissioning of EV	3

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NSQF Domain	**Outcomes of the Qualification/Component**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
	of EV charging station various types of EV charging stations parts and components of various types of EV charging station role of stations such as power station, control station and mechanical station in EV charging basic concepts regarding AC single phase and 3-phase supply measurement of electrical quantities such as current, voltage, resistance, impedance, power factor and energy technical specifications and configuration of various types of AC and DC chargers' safety	charging system. The individual is to be well versed with Electrical and power related concepts and principles. They also have to know the basics of equipment, tools, processes involved in EV charging station installation, commissioning, operations and maintenance, hence it is pegged at level 3	
Professional skill	S/he performs the narrow range of work with punctuality regularly	The job holder has to demonstrate practical skills, which are routine and repetitive in narrow range of applications viz, installation and O&M of solar integrated EV charging system hence it is pegged at level 3	3
Core skill	S/He communicates with his peers and supervisors clearly and able to understand the general signs/symbols and instructions related to EV charging infrastructure system.	The job holder should have good Communication skills (written and oral), along with skills of basic arithmetic principles which can be utilised during delivery of work functions at the EV charging stations with basic understanding of the overall social and natural environment. Therefore, it is pegged at level 3	3

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NSQF Domain	**Outcomes of the Qualification/Component**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
Responsibility	Mostly s/he works in small groups under a guidance of a supervisor or an entrepreneur	Majority of the work is under close supervision however the job holder does have some responsibility for own work (within defined limit) and hence it is pegged at level 3	3

SECTION 3
EVIDENCE OF NEED

26 **What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?**

Basis	**In case of other Awarding Bodies (Institutes under Central Ministries and states departments)**
Need of the qualification	The EV sector in India is currently at an inflection point and is poised to grow exponentially. Government of India has been rolling out several initiatives to transform electric mobility in the country. This sunrise sector is attracting a huge surge in investments catalysed by technology and market innovation. Along with the established players in automotive sector, a range of start-ups (in OEMs, software etc) have also received significant investments and are continuously experimenting with innovative products and business models. Though at an nascent stage currently, the Electric Vehicle (EV) market in India is expected to reach USD 206 Billion by 2030 as per an estimate by CEEW-CEF. At COP 26 Summit in 2021, India committed to an aspirational goal of having at least 30% of private vehicles as EVs by 2030. Achieving this target is an uphill task for the Indian Automotive industry, which is though the fifth largest in the world yet with EV sales accounted for a mere 1.3% of the total sales in 2021. India would need 4 lakh charging stations by 2026 to accelerate the requirement of EV adoption in the country. A huge number of trained and certified workforce shall be required to install and operate those charging stations, many of which will also utilise solar power (along with grid power).
Industry Relevance	This Qualification is largely relevant to Green Sector, Renewable energy, Automobile industry and power sector.
Usage of the qualification	In addition to new trainings catering to the EV charging segment, this qualification may be used for upskilling/reskilling of the employees working with auto mobile industry, EV industry and people working in renewable energy domain.
Estimated uptake	Up to 30,000 trained and certified Junior technicians shall be required to cater to the demand of potential

	new solar integrated EV charging stations to be set up in the country by 2025.
27	**Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences** Recommendation from the concerned Ministry including the Ministry of Power along with Bureau of Energy Efficiency (BEE) as the Central Nodal Agency (CNA) for the National-level rollout of charging infrastructure will be sought.
28	**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** We have discussed the growth trajectory within each occupation after studying organisational charts of various industry players active in this market space. We have also explored various lateral career opportunities (organisational verticals) for the discussed qualification. Due to entrepreneurial nature of this qualification, it is expected that the next vertical progression would be a dealership/distributorship who will source product directly from the system integrators/developers and then manage installation and O&M of charging infrastructure at various locations. We have also ensured 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 in section 4 'Evidence of progression' which clearly defines the career path. National Qualifications Register (NQR) portal was also searched to assess if there was any similar qualification and no overlap was found with the existing qualifications prepared by any awarding body including the Power Sector Skill Council.
29	**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** In the Qualification Pack, review date is scheduled for after 3 years in consultation with Subject Matter Experts/Industry representatives. The monitoring of evaluation of assessments and Employer feedback will be sought post-placement, for review of the effectiveness of the Qualification.

SECTION 4
EVIDENCE OF PROGRESSION

30 **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?**

Show the career map here to reflect the clear progression