Model Curriculum

QP Name: Junior Technician- Solar EV charging station

QP Code: SGJ/Q4001

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

Skill Council for Green Jobs
3rd Floor, CBIP Building, Malcha Marg, Chanakyapuri
New Delhi - 110021

Table of Contents

Training Parameters

Sector	Green Jobs
Sub-Sector	Renewable energy
Occupation	Technician
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3113.0101 Electrical Engineering, Technician/Mechanical Technician Electrical
Minimum Educational Qualification & Experience	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
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	17/11/2022
Next Review Date	16/11/2025
NSQC Approval Date	17/11/2022
Version	1
Model Curriculum Creation Date	17/11/2022
Model Curriculum Valid Up to Date	16/11/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	330 Hours including 270 hours of mandatory NOS (with 30 hours of employability module) and 60 hours of On the Job (OJT) training

Maximum Duration of the Course	330 Hours including 270 hours of mandatory NOS (with 30 hours of employability module) and 60 hours of On the Job (OJT) training

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills:

- Explain the basic concepts of electricity and electronics relevant to electric vehicles and their charging stations
- Explain various elements of solar powered EV charging station
- Perform site analysis and outline prerequisites for setting up of Solar charging station system as per concerned guidelines
- Perform effective Installation and any assembly work related with Solar powered EV charging system, as per the standard Industry practice.
- Perform Operation and maintenance including preventive maintenance / of electric vehicle charging stations
- Maintain System and personnel Health & Work Safety while installation of Solar powered EV charging station

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
SGJ/N4001: Site feasibility for installation of solar EV charging station **NOS Version No. 1** **NSQF Level 3**					60
Module 1: Basics of solar powered EV charging station and evolving opportunities	10:00	05:00	60 hours On the Job Training		
Module 2: Elements of Solar EV charging station system	10:00	05:00			
Module 3: Site survey and discuss key prerequisites for Solar EV charging station	15:00	15:00			

installation as per concerned guidelines					
SGJ/N4002: Installation of Solar Powered EV charging station **NOS Version No. 1** **NSQF Level 3**					90
Module 4: Installation of Solar Plant and its components for EV Charging station	30:00	30:00			
Module 5: Installation of key components of EV charging station.	10:00	20:00			
SGJ/N4003: Testing and commissioning of Solar EV charging station **NOS Version No. 1** **NSQF Level 3**					30
Module 6: Testing and commissioning of Solar EV Charger and BESS system	15:00	15:00			
SGJ/N4004: Operation and Maintenance of Solar EV charging station **NOS Version No. 1** **NSQF Level 3**					30
Module 7: Perform Operation, Maintenance and Monitoring of Solar integrated EV charging station	15:00	15:00			
SGJ/N4005: Maintain Personal Health and Safety at Solar EV charging project site **NOS Version No. 1** **NSQF Level 3**					30

Module 8: Maintain Personal Health and Safety at Solar EV charging project site	15:00	15:00			
Module 9: **Employability Skills** Mapped to DGT/VSQ/N0101:	30 hours				
Duration	**120:00**	**120:00**		330 Hours including 270 hours of mandatory NOS (with 30 hours of employability module) and 60 hours of On the Job (OJT) training	

Module Details

Module 1: Basics of solar powered EV charging station and evolving opportunities

Mapped to SGJ/N4001: Site feasibility for installation of solar EV charging station

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Highlight key aspects of EV charging station components and working principle.
- Discuss basic skills to successfully create and operate EV charging functionality

Duration: 10: 00	Duration: 05:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss and identify need of solar based EV charging station. • Explain the concept of EV charging system • Explain types of EV charging system and its functionality • Explain categories of electric vehicles, chargers, charging technologies and different batteries types. • Discuss all the components of EV charging station. • Discuss all the components of Solar powered EV charging station and their functions, for e.g. ✓ Solar Plant and its major components ✓ Charger Types and its role ✓ Battery management system • Discuss the advantage and dis advantage of different types of EV charger • Discuss basic skills, knowledge and responsibility of a solar powered EV charging Junior Technician	• Discuss the need and importance of solar based EV charging station and highlight the evolving jobs opportunities. • Identify all the components of EV charging station and demonstrate their functions. • Show all the components of Solar powered EV charging station and identify their functions. • Illustrate various categories of electric vehicles, chargers, charging technologies and different batteries types. • Illustrate basic skills, knowledge and responsibility of a solar powered EV charging station Junior technician
Classroom Aids:	
Whiteboard and Markers; Chart paper and sketch pens; LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	
Site Visit to a Solar plus Grid based EV charging station for illustrating parts and components of the EV charging station; 1kWp Solar PV system, Tools and equipment including Tool kit, Side cutting pilers, Nose pliers, Wire stripper, Electrician knife, Hand crimping tools, Cable cutter , Screw driver, Water	

level Measuring tape, Centre punch, Standard wire gauge, Vanier calliper, ratchet, sockets, drive torque, adjustable wrench,) cables and associated equipment for line termination and metering

Module 2: Elements of Solar powered EV Charging Station

Mapped to SGJ/N4001: Site feasibility for installation of solar EV charging station

Terminal Outcomes:

- Explain key elements of solar based EV charging system
- Demonstrate the functions of all key components of solar based EV charging station

Duration: *10:00*	**Duration**: *05:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the detailed prospects, concept and practice of utilisation of solar based EV charging system in India. • Discuss in brief- EV and charging technologies, Types of chargers, types of battery and classification, battery packs assembly, charging/discharging cycles, C rating, State of Charge/State of Health, functions of battery charging protection and management system etc. • Discuss how to estimate the load demand and accordingly size the capacity of solar power plant for a suitable EV charging station. • Discuss solar power plant components and its installation and O&M for effective operation. • Discuss inverter, Motor, Drivetrain, Regenerative Breaking etc • Discuss key aspects of health and safety for setting up and manage solar based EV charging station. • Discuss how services like Battery Swapping is critical to EV charging business.	• Outline the detailed prospects, concepts and practice of utilisation of solar based EV charging system in India. • Demonstrate the functions of all key components of the solar based EV charging system including 1. Chargers 2. Battery packs 3. Battery management system 4. Motor 5. Drivetrain • Show how to estimate the sizing of solar plant based on the demand for charging EV. • Show the installation and commissioning of solar power plant for application in EV charging. • Show how solar plant with or without battery can be effectively integrated with conventional grid based system for charging EVs. • Show how battery swapping also offers more opportunities for EV charging business. • Show how to identify ways to optimize usage of electricity/energy in various tasks/activities/processes
Classroom Aids:	
Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Site Visit for illustrating parts and components of the solar plus grid based EV charging station; 1 kWp Solar PV system, Tools and equipment including Tool kit, Side cutting pilers, Nose pliers, Wire stripper, Electrician knife, Hand crimping tools, Cable cutter , Screw driver, Water level Measuring tape, Centre punch, Standard wire gauge, Vanier calliper, ratchet, sockets, drive torque, adjustable wrench,) cables and associated equipment for line termination and metering etc	

Module 3: Site Survey and key pre-requisites for Solar EV charging station installation as per concerned guidelines

Mapped to SGJ/N4001: Site feasibility for installation of solar EV charging station

Terminal Outcomes: At the end of the module, the learner will be able to:

- Explain how to survey site for installation of Solar EV charging station installation
- Discuss basics of design considerations and other pre-requisites for installing Solar EV charging station
- Explain how to use various tools during site survey and system installation

Duration: *15:00*	**Duration**: *15:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss how to analyse key information like unshaded area requirement, location, insolation etc to identify a suitable site for solar EV charging station installation. • Discuss the various parameters that has influence on location analysis of a solar EV Charging Station. • Discuss the key considerations for planning the sequence of performing site feasibility analysis. • Discuss how to interpret effect of Site Selection and Shadow on Solar PV Module Output • Discuss the tools requirement for site feasibility. • Discuss how to Identify the Suitable Location of components like Inverter, Junction Boxes etc. • Explain the importance of pre-installation checks and procedures and how those activities are carried out. • List the tools, materials and equipment used for installing the solar powered EV charging station.	• Show how to perform site feasibility assessment including analysing required data and key info for a suitable site selection for installing solar EV charging station. • Show how to identify basic tools and their usage. • Illustrate Do's and Dont's of tools handling • Show how to employ practice of inspecting the site for meeting all key requirements for the installation of solar EV charging station. • Show how pre-installation checks and procedures for installation of solar powered EV charging station are carried out.
Classroom Aids:	
Note book, Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Tool kit, Measuring tape, wire gauge, solar irradiance meter, *Solar Pathfinder (evaluates the solar energy potential at a* site), Compass *(not needed if using a Solar Pathfinder),* Maps (reference for location latitude and magnetic declination), Smart phone with an application for site assessment,	

Module 4: Installation of Solar Plant and its components for EV Charging station

Mapped to SGJ/N4002

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Discuss how to Install the major components of solar plant
- Discuss key parameters for Quality installation and workmanship

Duration: 30:00	**Duration**: 30:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss key technical details including specifications and system design for both Grid, and Solar charging EV station • Explain how to Install the major components ✓ Solar MMS ✓ Solar Module ✓ Solar Inverter ✓ Energy Meter ✓ Electrical Interconnection • Explain the process of installing the mounting structure along with structural supports and accessories for safe & weatherproof installation as per site conditions. • Identify and describe various tools & tackles used for civil/mechanical installation. • Identify opportunities for material and energy conservation, along with use of environmentally friendly materials in civil/mechanical installation. • Describe the process of installing the electrical components including inverter, batteries, junction boxes, energy meters, cables • Explain the Do's and Don'ts of DC wiring. • Identify tools & tackles used for cable and conduit installation. • Describe the importance of Earthing for the protection of solar PV system • Describe the importance of conducting testing of all solar PV components and performing fault finding and analysis, continuity checks, polarity check and other commissioning activities.	• Outline key technical details including specifications and system design criteria for both Grid, and Solar charging EV station • Demonstrate how to use various tools and tackles including for concerned electrical and civil/mechanical installation • Demonstrate how to install electrical components of solar PV system; including inverter, batteries, junction boxes, energy meters, cables and conduits other electrical components. • Analyse how to perform DC wiring. • Demonstrate the application of tools & tackles used for cable and conduit installation. • Demonstrate how to perform earthing for the protection of solar PV system

• Explain the concerned regulations & standards for grid interconnection. • Describe the commissioning process for the solar PV system. •	
Classroom Aids:	
Note book, Laptop, white board, marker, projector	
Tools, Equipment and Other Requirements	
Tool kit, 1kWp Solar PV system, Double ended flat spanner, Double ended ring spanner, Combination pliers, Side cutting pliers, Nose pliers, Hack saw ,frame with blade, Screw driver, Water level Measuring tape, Centre punch, Standard wire gauge, Vanier calliper, Line Dori, Chisel, Drill m/c, Sprit level, Flat file, Round file, Triangle file, Hand saw, PVC mallet, Ball pin, hammer, Safety helmet, Safety shoes, Safety belt, Nose mask, Safety goggles, Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket,	

Module 5: Installation of key components of EV charging station.

Mapped to SGJ/N

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Explain how to install the major components of solar plant and its functions

Duration: *10:00*	**Duration**: *20:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the permit requirement to setup the EV charging Station • Discuss the relevant standards and guidelines applicable to the EV charging station installation. • State all the key elements of installation and commissioning of EV charging stations. • Discuss the key considerations for planning the sequence of operations. • Explain the pre-installation checklist and procedures to be carried out. • List the tools, materials and equipment used for installing the charging station. • Explain the importance of components Specifications and how to assess those for meeting system performance requirement • Explain the various types of protection to be provided to the charging such as weather protection, protection against voltage fluctuations, safety tests etc. • Discuss appropriate protocol for EV charging, such as Combined Charging System (CCS), GB/T, CHAdeMO (CHArge de Move), AC & DC /Slow & Fast Charging etc. • Explain how to analyse the EV charging machine for desired functionalities and perform concerned functions as per manufacturer's specifications	• Demonstrate how to employ proper procedure of connections from the electrical facility to the charging installation site. • Demonstrate the installation of earth protection system and AC/DC power modules in the EV charging station in line with relevant standards and guidelines. • Demonstrate the process of installing conduits for carrying electrical wires, cables from nearest source/facility to the charging station. • Show how to assign markings on civil foundation for charging station erection after taking measurements. • Demonstrate the fixing of the EV machine on the civil foundation while ensuring a firm grip. • Show how to use appropriate tools and equipment such as drilling machine, screwdriver, wrench, various types of mounting and insertion tools etc. as per the type of task to be performed pertaining to EV charging station installation. • Demonstrate the use of appropriate protocol for EV charging, such as Combined Charging System (CCS), GB/T, CHAdeMO (CHArge de Move), AC Charging etc. • Show how to analyse the EV charging machine for desired functionalities and perform concerned functions as per manufacturer's specifications
Classroom Aids:	
Laptop, white board, marker, projector	

Tools, Equipment and Other Requirements
Site visit to the solar plus grid based EV charging station OEM technical sheets for installing parts and components of Electric vehicle (EV) charging stations;, cables and associated equipment for metering; tools (e.g. ratchet, sockets, drive torque wrench, adjustable wrench, screwdriver, wire stripper, voltage tester Side cutting pilers, Nose pliers, Wire stripper, Electrician knife, Hand crimping tools, Cable cutter ,Screw driver, Water level Measuring tape, Centre punch, Standard wire gauge, Vanier caliper, Clamp meter, Multimeter, Megger, Earth tester, Earthing Rod, PPE Kit

Module 6: Testing and commissioning of Solar EV Charger and BESS system

Mapped to SGJ/N4003 Testing and commissioning of Solar EV charging station

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Discuss to perform testing and commissioning procedure for solar powered EV charging system

Duration: 15:00	**Duration**: 15:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the various types of tests that are performed to test the EV charging station. • Explain the process to be followed to conduct various types of tests pertaining to the commissioning of an EV charging station. • State the key considerations to check the electrical connections for the charging station • Elaborate the technique for measurement of the voltage drop between various parts of the charging station. • Explain the procedure to perform Ingress Protection (IP) testing. • Discuss relevant IS and IEC standards to perform IP testing. • Describe the start-up procedures performed for the charging station • State the importance of running the equipment at recommended initial settings. • State the importance of conducting a trial run of the EV charging station. • Explain the procedure to rectify faults and equipment malfunction pertaining to the commissioning of the charging station. • Describe the need for modifications in the existing systems and installed devices. • State the importance of the installation and commissioning certificate in the work process.	• Perform earthing tests in accordance with industry rules and regulations and standard work practices. • Test the connections of the conductive parts with the supply voltage source as per standard practice. • Conduct tests to check for electrical continuity between exposed conductive parts and the earth circuit. • Demonstrate how to measure the voltage drop between the exposed conductive part and the earthing terminal of the charging station. • Demonstrate how to measure earth resistance, the voltage drop between any exposed conductive part and the earth-circuit connections. • Demonstrate how to Evaluate the charging capabilities of the station by testing the communication protocol to as per desired standards. • Demonstrate how to deal with equipment malfunction and rectify faults during the commissioning process. • Employ the process of modifying the existing systems and installing electrical devices as per requirements and test results. • Demonstrate the process to document backups, manuals, logs, etc. as per work requirements. • Demonstrate how to perform testing of all components, along with fault finding & analysis, continuity checks, polarity

• Explain the importance of ensuring that the site is cleared of all (electrical) • Describe the importance of conducting testing of all solar PV components and performing fault finding and analysis, continuity checks, polarity check and other commissioning activities. • Explain the concerned regulations & standards for grid interconnection. • Describe the commissioning process for the solar PV system	check and other commissioning activities. • Examine concerned regulations & standards for grid interconnection. • Demonstrate the commissioning process for the Solar PV System. •
Classroom Aids:	
Whiteboard and Markers; Chart paper and sketch pens; LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	
Site visit to the solar plus grid based EV charging station OEM technical sheets for installing parts and components of Electric vehicle (EV) charging stations;, cables and associated equipment for metering; tools (e.g. ratchet, sockets, drive torque wrench, adjustable wrench, screwdriver, wire stripper, voltage tester Side cutting pilers, Nose pliers, Wire stripper, Electrician knife, Hand crimping tools, Cable cutter ,Screw driver, Water level Measuring tape, Centre punch, Standard wire gauge, Vanier caliper, Clamp meter, Multimeter, Megger, Earth tester, Earthing Rod, PPE Kit, job specification documents and PPE.	

Module 7: Perform Operation, Maintenance and Monitoring of Solar integrated EV charging station

Mapped to SGJ/N4004 : Perform Operation, Maintenance and Monitoring of Solar integrated EV charging station

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Discuss to perform operation and maintenance procedure for solar powered EV charging systems

Duration: 15:00	**Duration**: 15:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**

• Discuss how to perform various activities for operating and maintenance of the Solar powered Charging stations.
  • Check the Physical condition of the Charger
  • Discuss how to observe for the over-heating during the normal charging operation.
  • Explain the preventive maintenance of Solar Powered Charging station.
	• Demonstrate how various maintenance activities are to be performed to ensure smooth operation of the Solar integrated EV charging station.
	• Show how to observe for the overheating during charging and and perform preventive maintenance activities of Solar Powered Charging station.

Classroom Aids:	
Whiteboard and Markers; Chart paper and sketch pens; LCD Projector and Laptop for presentations	
Tools, Equipment and Other Requirements	
Site visit to the solar plus grid based EV charging station OEM technical sheets for installing parts and components of Electric vehicle (EV) charging stations;, cables and associated equipment for metering; tools (e.g. ratchet, sockets, drive torque wrench, adjustable wrench, screwdriver, wire stripper, voltage tester Side cutting pilers, Nose pliers, Wire stripper, Electrician knife, Hand crimping tools, Cable cutter ,Screw driver, Water level Measuring tape, Centre punch, Standard wire gauge, Vanier caliper, Clamp meter, Multimeter, Megger, Earth tester, Earthing Rod, PPE Kit, job specification documents and PPE.	

Module 8: Maintain Personal Health and Safety at Solar EV charging project site

Mapped to SGJ/N4005

Terminal Outcomes:

At the end of the module, the learner will be able to:

- Explain to ensure personal cleanliness and hygiene
- Explain to utilise proper personal health and safety tools including gloves and masks
- Explain safety SOPs for installation of and operation of solar powered EV charging station
- Explain to identify first aid kit and administering first aid

Duration: 15*:00*	**Duration**: 15:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the requirement and importance of ensuring personal cleanliness and hygiene. • Identify steps to be followed to maintain personal cleanliness while working at the project site • Explain the requirements for a safe work area/project site. • Identify proper personal health and safety tools including gloves and masks. • Identify the risks and hazards associated with solar powered EV charging system installations and their O&M (e.g. fire, electric shocks etc); • Explain standard operating procedures of ensuring safety for installation of Solar powered EV charging system in accordance with industry practice • Explain how to identify the first aid materials and administer first-aid. • Explain how to report immediately to concerned authorities regarding sign and symptoms of illness/accidents etc. • Discuss specified norms for waste collection and segregation for all waste categories as applicable.	• Demonstrate how to ensure personal cleanliness and hygiene while working at project site • Demonstrate standard operating procedures of safety for installation of solar powered EV charging system in accordance with industry practice • Demonstrate the proper use of Gloves and Masks and other PPE. • Demonstrate good housekeeping practices and infection control guidelines. • Show how to mitigate the risks and hazards associated with solar powered EV charging system installations and O&M (e.g. fire, electric shocks etc); • Demonstrate how to identify the location of first aid materials and administer first-aid. • Demonstrate safety operating procedures for installation of solar powered EV charging system Demonstrate how to follow processes specified for disposal of hazardous waste, if any.
Classroom Aids:	

Whiteboard and Markers; Chart paper and sketch pens; LCD Projector and Laptop for presentations
Tools, Equipment and Other Requirements
Gloves (non- prickable), sanitizer, mask, first aid materials , Safety helmet, Safety shoes, Safety belt, Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket, Safety Gloves, Personal Protective Equipment (PPE), various kind of fire extinguishers, other materials used for extinguishing fire, Housekeeping material including Cleaning agents, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel

Module 9: Employability Skills

Mapped to DGT/VSQ/N0101:

Terminal Outcomes:

- Communicate effectively with team members ,clients ,vendors ,visitors and stake holders
- Build personal and professional
- Digital and financial literacy which includes basic components of computer system and related concept, saving money, opening bank account and filing tax return

- Discuss the importance of Employability Skills in meeting the job requirements
- Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
- Show how to practice different environmentally sustainable practices
- Discuss 21st century skills.
- Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.
- Use appropriate basic English sentences/phrases while speaking
- Demonstrate how to communicate in a well -mannered way with others.
- Demonstrate working with others in a team
- Show how to conduct oneself appropriately with all genders and PwD
- Discuss the significance of reporting sexual harassment issues in time
- Discuss the significance of using financial products and services safely and securely.
- Explain the importance of managing expenses, income, and savings.
- Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws
- Show how to operate digital devices and use the associated applications and features, safely and securely
- Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely
- Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges
- Differentiate between types of customers
- Explain the significance of identifying customer needs and addressing them
- Discuss the significance of maintaining hygiene and dressing appropriately
- Create a biodata
- Use various sources to search and apply for jobs
- Discuss the significance of dressing up neatly and maintaining hygiene for an interview
- Discuss how to search and register for apprenticeship opportunities

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Class X + ITI/Diploma	In relevant trades	2				
Graduate (BA/B.Sc/B Com/BBA)		1		0		**NA**
Certified under relevant Craft Instructor Training Scheme (CITS) course						

Trainer Certification	
Domain Certification	**Platform Certification**
Job Role: Junior Technician- Solar EV charging station, Level 3 SGJ/Q4001 v1.0, Minimum accepted score is 70%	Job Role: "Trainer", "MEP/Q2601" v1.0, Minimum accepted score is 80%

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
Class X + ITI/Diploma	In relevant trades	3		0		**NA**
Graduate (BA/B.Sc/B Com/BBA)		2				
Certified under relevant Craft Instructor Training Scheme (CITS) course						

Assessor Certification	
Domain Certification	**Platform Certification**
Job Role: "Junior Technician- Solar EV charging station" Level 3" "SGJ/Q4001 v1.0, Minimum accepted score is 70%	Job Role: "Assessor", "MEP/Q2701" v1.0, Minimum accepted score is 80%

Assessment Strategy

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

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
SOP	Standard Operating Procedures