QUALIFICATION FILE

Green Hydrogen Plant Entrepreneur

☒ Short Term Training (STT)

☒ Future Skills

NCrF/NSQF Level: 5

Submitted By:

Skill Council for Green Jobs

Chief Executive Officer
CIBP Building, Malcha Marg,
Chankyapuri, New Delhi – 110021
Contact no. and mail: 9871119101, psaxena@sscgj.in

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Section 1: Basic Details

1.	**Qualification Name**	**Green Hydrogen Plant Entrepreneur**	
2.	**Sector/s**	**Environmental Science**	
3.	**Type of Qualification: ☒ New**	**NQR Code & version of existing/previous qualification:** **QG-05-ES-00145-2023-V1-SCGJ & version 1**	**Qualification Name of existing/previous version:** **Green Hydrogen Plant Entrepreneur**
4.	**a. OEM Name** **b. Qualification Name** (Wherever applicable)	Green Hydrogen Plant Entrepreneur	
5.	**National Qualification Register (NQR) Code &Version**	**QG-05-ES-00145-2023-V1-SCGJ & version 1**	**6. NCrF/NSQF Level:** 5
7.	**Award (Certificate/Diploma/Advance Diploma/ Any Other**	Certificate	
8.	**Brief Description of the Qualification**	Green Hydrogen Plant Entrepreneur would identify the potential market and the client needs/ requirements to propose the right kind of technically and economically feasible solution to set up green hydrogen plant. He/she is also expected to undertake specific works/sub component installations of a green hydrogen plant.	

<table>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1</td><td>Completed 2nd year of UG</td><td>NA</td></tr>
<tr><td>2</td><td>Pursuing 2nd year of UG and continuous education</td><td>NA</td></tr>
<tr><td>3</td><td>Completed 2nd year of diploma (after 12th)</td><td>NA</td></tr>
<tr><td>4</td><td>Pursuing 2nd year of 2-year diploma after 12th</td><td>NA</td></tr>
<tr><td>5</td><td>12th pass with 1 year Vocational Education & training (NTC or NAC or CITS)</td><td>NA</td></tr>
<tr><td>6</td><td>Completed 3 year diploma after 10th</td><td>1 year of relevant experience</td></tr>
<tr><td>7</td><td>12th Grade pass</td><td>2 years of relevant experience</td></tr>
<tr><td>8</td><td>10th Grade pass</td><td>4 years of relevant experience</td></tr>
<tr><td>9</td><td>Previous relevant Qualification of NSQF Level 4</td><td>2 years relevant experience</td></tr>
</table>
b. Age: 18</td></tr>
<tr><td>10.</td><td>Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>16</td><td>11. Common Cost Norm Category:
I</td></tr>
<tr><td>12.</td><td>Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)</td><td colspan="2">NA</td></tr>
</table>

<table>
<tr><td>13.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>☒Offline ☐Online ☐Blended
<table>
<tr><th>Training Delivery Modes</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT Mandatory (Hours)</th><th>OJT Recommended (Hours)</th><th>Employability (Hours)</th><th>Total (Hours)</th></tr>
<tr><td>Classroom (offline)</td><td>155</td><td>145</td><td>90</td><td></td><td>90</td><td>480</td></tr>
<tr><td>Online</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>14.</td><td>Aligned to NCO/ISCO Code/s (if no code is available mention the same)</td><td>NCO-2015/2431.0501

Market Research Associate – Sales & Marketing/Business Development</td></tr>
<tr><td>15.</td><td>Progression path after attaining the qualification (Please show Professional and Academic progression)</td><td>Vertical Progression: Large Scale Green Hydrogen Plant Contractor(Level 6)</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Nil</td></tr>
<tr><td>17.</td><td>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒ No</td></tr>
<tr><td>18.</td><td>Is the Job Role Amenable to Persons with Disability</td><td>☒ Yes ☐ No
If “Yes”, specify applicable type of Disability:
☒ Deaf ☒ Hard of Hearing ☒ Acid Attack Victims ☒ Dwarfism</td></tr>
<tr><td>19.</td><td>How Participation of Women will be Encouraged</td><td>The programme would be proposed to be incorporated in women ITIs and diploma colleges to train women candidates on the job role. TPs shall be encouraged to onboard at least a certain number of female candidates in each batch</td></tr>
</table>

20.	**Are Greening/ Environment Sustainability Aspects Covered** (Specify the NOS/Module which covers it)	☒ **Yes** ☐ **No**	
21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools** ☐ **Yes** ☐ **No** **Colleges** ☒ **Yes** ☐ **No**	
22.	**Name and Contact Details of Submitting / Awarding Body SPOC** (In case of CS or MS, provide details of both Lead AB & Supporting ABs)	**Name:** Dr. Praveen Saxena **Email:** psaxena@sscgj.in **Contact No.:** 9871119101 **Website: https://sscgj.in/**	
23.	**Final Approval Date by NSQC:** 31.01.2023	**24. Validity Duration:** 3 years	**25. Next Review Date:** 30.01.2026

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th.**-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**-Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.	Module 1: Introduction to Green Hydrogen	SGJ/N1817 Version 1	Core	5	1	20	10	90		30	30	20			50	11
2.	Module 2: Components of Green Hydrogen Plant and its layout	SGJ/N4101 Version 1	Core	5	1	20	10			30	30	20			50	11
3.	Module 3: Key technical and entrepreneurial aspects for supporting growth and business development green hydrogen production	SGJ/N1818 Version 1	Core	5	3	30	60			90	40	60			100	22
4.	Module 4: Oversee the Assembly, installation and O&M of Electrolyzer for Green Hydrogen Production	SGJ/N1820 Version 1	Core	5	1	10	20			30	20	30			50	11

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
5.	Module 5: Micro-entrepreneurship opportunities in Green Hydrogen	SGJ/N1819 Version 1	Core	5	3	60	30			90	40	60			100	22
6.	Module 6: Perform Health and safety measures for installing and operating Green hydrogen system	SGJ/N0802 Version 1	Core	4	1	15	15			30	24	26			50	12
7.	Module 7: Employability Skills	DGT/VSQ/N0103 version 1	Core	5	3					90	20	30			50	11
Duration (in Hours) / Total Marks					**16**	**155**	**145**	**90**		**480**	**224**	**226**			**450**	**100**

Assessment - Minimum Qualifying Percentage

Minimum Pass Percentage – Aggregate at qualification level: 70 % *(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Graduate/Diploma(Technical) with Two years of experience in a petrochemical industries/Gasification processes/relevant experience Or Certified under relevant Craft Instructor Training Scheme (CITS) course
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Engineering Graduate with 5 years of hydrogen production/management experience
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	Not Applicable

Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Graduate/Diploma(Technical) with Three years of experience in a petrochemical industries/Gasification processes/relevant experience Or Certified under relevant Craft Instructor Training Scheme (CITS) course
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Engineering Graduate with 6 years of experience in hydrogen production/Electrolyzer manufacturing/power system manufacturing
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Engineering Graduate with 7 years of experience in hydrogen production/Electrolyzer manufacturing/power system manufacturing

4.	**Assessment Mode** *(Specify the assessment mode)*	Online and offline both
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☒ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No):** No published skills gap study is available across the green hydrogen value chain as this is relatively a new technology segment however a detailed training needs assessment study is planned to be implemented by SCGJ in coordination with The South Asia Regional Energy Partnership (SAREP) which is the flagship regional energy program of the United States Agency for International Development (USAID).
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** Yes following key documents are available in the public domain a. National Green Hydrogen Mission: https://mnre.gov.in/img/documents/uploads/file_f-1673581748609.pdf b. https://powermin.gov.in/sites/default/files/Green_Hydrogen_Policy.pdf c. Harnessing Green Hydrogen, NITI Aayog: https://www.niti.gov.in/sites/default/files/2022-06/Harnessing_Green_Hydrogen_V21_DIGITAL_29062022.pdf d. https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2020/Dec/IRENA_Green_hydrogen_cost_2020.pdf?rev=4ce868aa69b54674a789f990e85a3f00
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes, The global energy sector is on a path of rapid decarbonization and green hydrogen is poised to play a vital role for this transformation in energy systems,Scaling up green hydrogen production and utilisation across multiple sectors like power generation, transportation and other hard to abate sectors will be essential to helping global economies achieve net zero emissions and limit global temperature rises to 1.5C. Many major economies including India have declared Green Hydrogen roadmap as part of the climate and clean energy related actions. These measures largely seek to address the technical and financial challenges in scaling up Green Hydrogen generation, enhancing Green Hydrogen use across focus sectors, developing scalable technologies supported by enabling policies and regulations. After the announcement of the National Green Hydrogen Mission by the Prime Minister in August 2021, there has been a serious push on both policy and industry actions on green hydrogen. Leading energy companies including NTPC, Reliance and Adani Group along with several other major companies have forayed into this segment and have already announced mega green hydrogen projects. Cabinet has very recently approved the National Green Hydrogen mission with an aim to make India a leading producer and supplier of Green Hydrogen in the world. Government of India is set to provide a fillip to the renewable energy sector by making green hydrogen significantly cheaper while also supporting the nascent industry to establish global supply chains. With the National Mission, there is clear focus on government funding and support for R&D, measures for demand creation, financial support for manufacturing and infrastructure development along with creating opportunities for employment and economic development. The Mission targets setting up of at least 5

	MMT (Million Metric Tonne) per annum of green hydrogen capacity with an associated renewable energy capacity of about 125 GW by 2030. The targeted production capacity will bring over ₹8 lakh crore in total investments and will result in creation of over 6 lakh clean jobs. Implementation of the Mission is expected to create a large-scale ecosystem for Green Hydrogen production and use in the country which would also provide a huge opportunity for skilling and jobs creation. In alignment with the Mission targets, SCGJ is actively consulting with Key stakeholders like Green hydrogen industry which includes renewable energy developers, electrolyzer manufacturers, Green hydrogen generators etc to identify their evolving skilling requirement and accordingly designing and implementing skilling interventions to ensure that trained and certified candidates are readily available for the industry.
4.	**Number of Industry validation provided:** 10 leading companies including solar developers, Electrolyzer manufacturers, project developers who have made recent announcements for Green Hydrogen/Ammonia generation projects.
5.	**Estimated nos. of persons to be trained and employed:** Up to 6 lakhs new jobs are expected to be created by 2030 across the Green hydrogen value chain as per the Green Hydrogen Mission. Multiple qualifications across the key segments of the green hydrogen value chain shall be developed as per the requirement of the industry. It is expected that up to 25000 technicians shall be trained and gradually employed across new projects every year. Considering that the domestic industry is at a very nascent stage currently and the most of the Green hydrogen generation units in the country as recently announced are mainly under planning stage, targeted skilling activities can be undertaken for priority job roles like for technicians who would set up and operate green hydrogen production system. Over 4 lakhs jobs are expected to be generated only for meeting the required renewable energy capacity of 125 GW which would be required for powering the Green hydrogen facilities producing at least 5 MT per annum till 2030. SCGJ already has a portfolio of qualifications for performing key installation and O&M functions in various renewable energy projects and it is expected that the new green hydrogen investments will further drive the required skilling and employment opportunities across renewable energy domain. In the short and medium term, Industry will lead the way and Green Hydrogen production plant will also generate significant jobs across plant installation, commissioning and O&M functions along with various other technical and non technical roles at various levels. Upstream process including storage, handling, distribution, applications across industries will generate new jobs and Technicianial opportunities supported with the strong policy framework for the green hydrogen ecosystem, along with the robust standards and regulations framework for the sector. In the medium to long term, innovative business models particularly in transport and power sectors will evolve in the coming decade leading to new opportunities for both jobs and self- employment across various industry clusters. Oil refineries using hydrogen for desulphurisation, ammonia production for fertilisers and chemicals industry, treatment of basic metals along with steel industry will create the leading market, skilling and employment opportunities for green hydrogen in the short-medium term. Green hydrogen technologies and applications as alternate energy carrier / vector for industrial process heating, transportation and long duration energy storage will also emerge in the long term possibly creating new opportunities for both skilling and employment.

6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** Concurrence has been requested from the Ministry of New and Renewable Energy

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	Annexure: Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Annexure: Tools and Equipment (Lab Set-Up)
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Annexure: Detailed Assessment Criteria (Mandatory)
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Annexure: Assessment Strategy
5.	**Annexure:** Acronym and Glossary *(Optional)*	Annexure: Acronym and Glossary
6.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Attached
7.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Annexure: Career progression and OM
8.	**Supporting Document:** Occupational Map *(Mandatory)*	Annexure: Career progression and OM
9.	**Supporting Document:** Assessment SOP *(Mandatory)*	Annexure: Assessment Strategy

Annexure: Evidence of Level

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
Professional Theoretical Knowledge	The individual is expected to identify the potential market and the client needs/ requirements to propose the right kind of technically and economically feasible solution to set up green hydrogen plant. He/she is also expected to undertake specific works/sub component installations of a green hydrogen plant.	The green hydrogen plant Entrepreneur would have a knowledge of the complete process in producing green hydrogen. He needs to know various sub sections of the plants and their operations. He/She have to demonstrate technical skills required for performing and accomplishing installation of various critical components of the plant. He/She has to be multidisciplinary and have knowledge and skills of installation of hydrogen production plant. The Job holder is expected to exhibit well developed skills with a clear choice of procedures in familiar context such as assessing the market potential through primary and secondary research, identifying customer requirements for green hydrogen. He/she should understand cost benefit analysis for various sub components, identifying manufacturers for procuring the identified solutions and procure the same, ensuring proper installation of green hydrogen plant. He/she has a capacity of team building and supervising technician for installing the plant. Thus, considering the scope of work the job holder can be placed at Level 5. Since the individual's work is not limited to working in familiar, routine & predictable environment but rather encompasses jobs that requires working in non-routine and fairly unpredictable environment such as assessing market potential for setting up business, preparing	5

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
		relevant solutions and selling to the customer, ensuring the proper installation and commissioning of solutions, etc., s/he can't be placed in Level 4. And as the individual doesn't require to accomplish wide range of activities and working around non-standard practices, the roles does not qualify as a level 6 role.	
Professional and Technical Skills/ Expertise	The individual is expected to exhibit the basic knowledge of producing green hydrogen through electrolysis including operation and maintenance of various sub components such as water treatment plant, electrolyzer and storage of hydrogen. He need to know the project management strategies and should be able to analyse data of the plant.	The Entrepreneur is expected to exhibit **knowledge of facts such as properties of hydrogen, functioning of electrolyser, gas piping, storage etc. He/She should have knowledge of principles such as** marketing and sales of green hydrogen as fuel. He/she should have general concepts of physical and chemical properties of green hydrogen and how to safely handle the gas. S/he should possess the ability to speak, read and write in the local vernacular language and English which is always preferred. Thus considering the professional knowledge, s/he can be placed at level 5 The Job holder is expected to possess professional knowledge more than just factual knowledge about various components of green hydrogen plant but also knowledge of principles like marketing principles,	5

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
		financial principles, etc. processes such as demonstration procedures, installation and maintenance procedures and general concepts such as time management, financial modelling and entrepreneurship as a whole. Therefore s/he can't be placed at Level 4 And since the job holder doesn't require to exhibit factual & theoretical knowledge in broad contexts within hydrogen such as evolving technological trends, the various socio-economic factors and their impact on energy, etc. but knowledge specific to green hydrogen applications, the role can't be placed at level 6	
Employment Readiness & Entrepreneurship Skills & Mind-set	The individual is expected to plan & organize the schedule for all meetings and discussions to be undertaken by self or by the team. Further s/he must be able to take decisions on a regular basis, manage relationship with customers and apply domain knowledge to perform tasks related to green hydrogen applications. S/he is also expected to critically evaluate information obtained from customers and teams to create relevant solutions for customers.	The Job holder is expected to possess a range of practical and cognitive skills required to accomplish tasks and solve problems by selecting and applying basic methods and tools. For example, the individual has to assess the market and identify potential customers, plan to organise customer meetings for demonstrations and sales, identify client's requirement and prepare cost effective and relevant solutions, prepare cost benefit analysis to convince client and ensure sales and oversee the installation of systems and provide post installation support. The job holder also has to ensure preparation of effective business plan for maintaining and sustaining the	5

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
		business. Thus, considering the professional skills the job holder can be placed at Level 5. Since the Green Hydrogen Plant Entrepreneur is expected to exhibit cognitive skills along with practical skills required to accomplish the tasks and solve problems by identifying customer needs and preparing solutions, identifying market trends, etc. s/he can't be placed at Level 4. And as the job holder is not expected to possess practical and cognitive skills required to generate solutions for specific problems related to energy as a whole, but rather expected to generate solutions specific to green hydrogen plant, s/he can't be placed at level 6	
Broad Learning Outcomes	The individual is expected to exhibit fluent business communications skills, networking skills & capable of handling and using customer data in the prescribed way.	The Job holder is expected to be possess the desired analytical and mathematical skills for preparing the business plan, preparing cost benefit analysis for hydrogen production, etc. have understanding of social /political environment like local cultures so as to communicate effectively with customers, interact effectively with Technician, skill of collecting and organizing information like analysing local market trends, understanding requirements of the local demographics to prepare solutions, etc. and communication skill for so as to interact effectively with customers, ensure sales and pass on instruction to Technician.	5

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
		Thus, considering the core skills, s/he can be placed at Level 5. The Job holder is expected to exhibit core skills more than language to communicate with required clarity, basic algebraic and arithmetic skill and basic understanding of socio- political environment. For example, s/he is supposed to organize and collect information regarding the local energy usage practices through discussions, etc., have desired mathematical skill to create efficient business plans, etc. And since the job holder requires only some skill of collecting and organizing information but doesn't need to be reasonably good and only the desired mathematical skill restricted to the production plant, s/he can't be placed at Level 6.	
Responsibility	The individual is primarily responsible for ensuring the development of full green hydrogen plant along with thorough monitoring of the plant performance and ensuring proper maintenance of plant equipment to ensure optimum service delivery for all consumers.	Green Hydrogen entrepreneur is responsible for his/ her own work as s/he has to ensure development of Green hydrogen plant through identification of suitable opportunities, updating self with industry trends and skills for ensuring provision of good service to all consumers while maintaining business viability, and to an extent influence subordinate's works and learning as s/he is responsible for passing knowledge and skills to his/ her team of technicians and helpers.	5

Title/Name of qualification/component: Green Hydrogen Plant Entrepreneur		**Level: 5**	
NSQF Domain	**Key requirements of the job role**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
		Considering the responsibilities, the individual can be placed at level 5. Since the Job holder responsibility is not limited till his/her own work & learning but also encompasses some responsibilities for others learnings as s/he is expected to ensure knowledge transfer to team members s/he can't be placed at 4. As the number of people reporting to him/her may be less and the individual may not have large teams working across multiple functions, s/he can't be placed at level 6.	

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size:

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1 .	Small size/demonstration units of transformer, rectifier, electrolyzer and solar power plant	Standard Make	
2	Personnel Protective Equipment, First aid kit, Material Safety Data Sheet, Gas leakage detector	Standard Make	
3	Tool kit, IR Thermometer ,Barometer,Double ended flat spanner, Double ended ring spanner, Wrenches,Combination pliers, Side cutting pliers, Nose pliers, Screw driver, Vanier calliper, hammer, Cutters, Tweezers, Stripping & Crimping Tools, Safety helmet, electronic pressure gauge, clampmeter, multimeter, KOH concentration measuring tools, gas leakage detector, Nose mask, Safety goggles, Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket, Safety Gloves ,Chemical Mask, Leather gloves, flame proof aprons, Flame proof overalls buttoned to neck, Helmets/hard hats, Full body harness, Hand shields, , fire extinguishers, First aid equipment, Safety instruments	Standard Make	

Classroom Aids

The aids required to conduct sessions in the classroom are:

Marker, chart and visual aid; Colour code nomenclature chart of Hydrogen, Hydrogen production flowchart, Hydrogen supply chain flow chart , Schematics of Green hydrogen production plant;

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1	M/s Oriana Power Private Limited	Mr Rupal Gupta	Director				
2	IB Solar	Mr Abhinav Mahajan	Director				
3	IWTMA	Mr DV Giri	SG				
4	SolarTech Saarthi Pvt Ltd	Mr Lucky Aggarwal	MD				
5	REVY	Dr Vanita Prasad	CTO				
6	GRI	Dr Kirubakran	Assoc Professor & Director				
7	Uneecops- GH2 Solar	Mr Anurag Jain	Director				
8	Innodust	Mr S K Sahoo	Director				
9		Dr S R Awasthi	GM (Retd), BHEL				
10	Gujarat Institute of Solar Energy	Ms Dipti Shah	Director				

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒Theory/ Lectures - Imparting theoretical and conceptual knowledge	Colour code nomenclature chart of Hydrogen, Hydrogen production flowchart, Hydrogen supply chain flow chart	60:40
2	☒Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	Small size/demonstration units of transformer, rectifier, electrolyzer and solar power plant, Visit to a green hydrogen production site; Tool kit, IR Thermometer ,Barometer,Double ended flat spanner, Double ended ring spanner, Wrenches,Combination pliers, Side cutting pliers, Nose pliers, Screw driver, Vanier calliper, hammer, Cutters, Tweezers, Stripping & Crimping Tools, Safety helmet, electronic pressure gauge, clampmeter, multimeter, KOH concentration measuring tools, gas leakage detector, Nose mask, Safety goggles, Ear plug, PVC hand glove, Cotton hand glove, Reflective jacket, Safety Gloves ,Chemical Mask, Leather gloves, flame proof aprons, Flame proof overalls buttoned to neck, Helmets/hard hats, Full body harness, Hand shields, , fire extinguishers, First aid equipment, Safety instruments	
3	☒Showing Practical Demonstrations to the learners		
4	☒Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☒Tutorials/ Assignments/ Drill/ Practice		
6	☒Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☒On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

<table>
<tr><th>NOS/Module Name</th><th>Assessment Criteria for Performance Criteria/Learning Outcomes</th></tr>
<tr><td>SGJ/N1817: Introduce green hydrogen value chain for entrepreneurs</td><td>
<table>
<tr><th>Assessment Criteria for Outcomes</th><th>Theory Marks</th><th>Practical Marks</th><th>Project Marks</th><th>Viva Marks</th></tr>
<tr><td>Basics of Green Hydrogen</td><td>22</td><td>15</td><td>-</td><td>-</td></tr>
<tr><td>PC1. Discuss the properties and characteristics of Hydrogen</td><td>4</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>PC2. Discuss various colour code nomenclature of Hydrogen and role of Green Hydrogen in sustainable energy transition.</td><td>4</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>PC3. Discuss key aspects related to production, storage and transportation of Green Hydrogen.</td><td>5</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>PC4. Demonstrate with chart colour code nomenclature of Hydrogen</td><td>-</td><td>5</td><td>-</td><td>-</td></tr>
<tr><td>PC5. Perform an activity for matching the process and source of production of different colour codes of hydrogen</td><td>-</td><td>4</td><td>-</td><td>-</td></tr>
<tr><td>PC6. Discuss key aspects of the hydrogen economy</td><td>4</td><td>2</td><td>-</td><td>-</td></tr>
<tr><td>PC1. Draw a flow diagram of green hydrogen production and illustrate potential end uses across the energy system</td><td>1</td><td>4</td><td>-</td><td>-</td></tr>
<tr><td>PC7. Discuss briefly the applications of Green hydrogen in industry, transport and power production</td><td>4</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>Evolving Opportunities in segment</td><td>8</td><td>5</td><td>-</td><td>-</td></tr>
<tr><td>PC9. Identify opportunities for supplying various renewable energy for green hydrogen generation</td><td>2</td><td>1</td><td>-</td><td>-</td></tr>
<tr><td>PC10. Illustrate emerging opportunities for setting up enterprises across Green Hydrogen value chain</td><td>2</td><td>4</td><td>-</td><td>-</td></tr>
<tr><td>PC11. Discuss the role and responsibilities of a Green Hydrogen Plant Entrepreneur</td><td>4</td><td>-</td><td>-</td><td>-</td></tr>
<tr><td>NOS Total</td><td>30</td><td>20</td><td>-</td><td>-</td></tr>
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NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
SGJ/N4101: Identify key components of Green Hydrogen Plant and its overall layout	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Key components of the plant	30	20	-	-
PC1. Identify all key components of the Green Hydrogen plant including electrical, mechanical and civil components	4	1	-	-
PC2. Illustrate the schematic of Green hydrogen production plant	-	3	-	-
PC3. Discuss functions of the key components of electrolyzer stack, renewable power plant, feed water supply unit, gas separator, transformer and rectifier, gas compression unit, etc.	4	2	-	-
PC4. Illustrate key components of the plant and outline their functions through plant schematics	2	2	-	-
PC5. Illustrate possible combination of various renewable power sources including for providing round the clock power for generating green hydrogen	-	2	-	-
PC6. Explain the overall layout of the plant	3	-	-	-
PC7. Illustrate how to interpret the Plant Layout including various equipment and material used in a Green hydrogen production facility.	-	2	-	-
PC8. Show how to read and interpret various electrical codes, data sheet, safety features etc relevant to the plant.	3	2	-	-
PC9. Discuss working principles of main components including electrolyzer stack, gas separator, power source, etc.,	3	-	-	-
PC10. Discuss key safety aspects to be considered while preparing the layout of hydrogen production plant for prevention from fire caused by sparking, e.g. to ensure safe distance of hydrogen from electrical devices like MCBs, switches.	3	-	-	-
PC11. Show how to perform Proper earthing of mainly the tools to safeguard against static charge	1	2	-	-

	PC12. Discuss and illustrate key technical insights of Green hydrogen system for setting up and running successful enterprises	3	2	-	-
	PC13. Discuss and show how to perform SWOT analysis for outlining key business opportunities in the value chain	4	2	-	-
	NOS Total	**30**	**20**	**-**	**-**

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
SGJ/N1818: Acquire key technical and entrepreneurial skills for green hydrogen production	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Acquiring key skills	40	60	-	-
PC1. Discuss process for setting up hydrogen production plant including required registration, availing low cost financing from Financial Institutions/Venture Capital/Banks, government subsidies, green power, free wheeling/banking of renewable energy etc.	2	4	-	-
PC2. Show how to access required data and analyse key information for performing site survey for installation of Hydrogen generation plant	-	4	-	-
PC3. Identify different players involved in value chain for hydrogen production for component supply and human resources	-	5	-	-
PC4. Discuss various evolving opportunities for setting up of hydrogen production plants at different sites, technologies, services, finance and market ecosystem	3	-	-	-
PC5. Discuss how to identify the key ingredients of business plan for land, water, renewable energy, finance, technology and market mechanism	3	2	-	-
PC6. Discuss all key aspects of a Detailed Project Report (DPR) and show how how to develop a bankable DPR for Hydrogen production plant which includes market demand, storage, technology and finance for hydrogen production	3	3	-	-
PC7. Show how to Identify various approvals and clearances requirement	-	3	-	-
PC8. Demonstrate how system installation cost can vary depending upon the site conditions and related requirements	-	3	-	-
PC9. Discuss how to assess the potential and demand of Hydrogen in different sectors i.e. transport, power, building, industry, etc.	3	1	-	-
PC10. Show how O&M related cost for the system can be calculated	-	4	-	-

	PC11. Show how available incentives/subsidy etc. can be availed for setting-up of a Hydrogen production plant	2	4	-	-
	PC12. Show how to Calculate lifecycle cost of Hydrogen production plant along with its business viability including cash flow, annual savings and payback period	-	4	-	-
	PC13. Discuss various parameters for calculating lifecycle cost of hydrogen production, storage system, along with cash flow, annual savings, payback period, IRR, inflation, increase in fossil fuel cost, sensitivity analysis by varying costs of renewable energy, water, man power, and such other factors etc. and how to include those in the detailed project report (DPR)	5	3	-	-
	PC14. Identify opportunities in using green finance to encourage compliance with green hydrogen certification as per global standards	2	2	-	-
	PC15. Identify opportunities with evolving business models in trading hydrogen as an energy commodity	1	4	-	-
	PC16. Discuss key aspects to successfully install, operate, safely store and market Hydrogen as an energy source	3	2	-	-
	PC17. Discuss O&M related cost for the system along with key aspects of Annual Maintenance Contract (AMC) of electrolyser from supplier/ manufacturers, and other systems	2	1	-	-
	PC18. Explain different taxation and related compliances to setting up and operations	3	-	-	-
	PC19. Discuss National Green Hydrogen policy and corresponding incentives/subsidies available and procedures for availing the same and explain how evolving start-ups and new ventures boost-up hydrogen economy	3	3	-	-
	PC20. Identify new and evolving business opportunities for collaborating with renewable power developers, EPC, system integrators, manufacturers along with downstream application segments	2	4	-	-
	PC21. Explain and Demonstrate how to use relevant reporting and measurement tool for renewable generation/power consumption for hydrogen generation	3	4	-	-
	NOS Total	**40**	**60**	**-**	**-**

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
SGJ/N1820: Oversee the Assembly, storage and O&M of Electrolyzer for Green Hydrogen Production	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Oversee process operations	**20**	**30**	**-**	**-**
PC1. Discuss the Electrolyser Type (PEM, AE, SOEC)	2	-	-	-
PC2. Explain the technical specification of Electrolyser (PEM, AE and SOEC)	1	-	-	-
PC3. Explain the concept, and Operation of PEM and AE and SOEC electrolyser. along with demonstrate the functions of various types of electrolysers through pictures, videos, etc	2	4	-	-
PC4. Discuss and illustrate differences in PEM, AE and SOEC Electrolysers types	1	3	-	-
PC5. Discuss Comparison between electrolyzers types with reference to the life, cost, efficiency, electricity consumption etc.	1	2	-	-
PC6. Draw detailed schematic of different Electrolyzers	-	3	-	-
PC7. Discuss the Tools required for Installation, dismantling, removal of components of PEM and AE /Alkaline water electrolysers.	2	3	-	-
PC8. Explain the inputs / outputs of Electrolyzer	1	-	-	-
PC9. Discuss and illustrate in detail the input renewable power from various sources and its integration with electrolyser	2	3	-	-
PC10. Discuss how to oversee the Installation of Parts and Components of Electrolyser	2	2	-	-
PC11. Discuss and outline step by step process for Installation of Electrolyser	2	3	-	-
PC12. Explain the Challenges associated with Hydrogen in storage, handling and transportation	1	-	-	-
PC13. Discuss and show how to select and install hydrogen compression and storage system	1	3	-	-

	PC14. Discuss and identify the precautions measures required to compress and store hydrogen	1	-	-	-
	PC15. Discuss the safety guidelines to be followed as per industry standard	1	1	-	-
	PC16. Perform activities to consolidate information on procurement cost of different components with make of any type of Electrolyzer along with anlayse technical specification sheet	-	3	-	-
	NOS Total	**20**	**30**	**-**	**-**

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
SGJ/N1819: Diversify Micro-entrepreneurship skills in Green Hydrogen	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Micro-entrepreneurship	60	40	-	-
PC1. Discuss micro-entrepreneurship opportunities for water quality check and an Uninterrupted quality water supply for electrolyzer	6	-	-	-
PC2. Discuss and outline micro-entrepreneurship opportunities for Installation and commissioning of electrolyzers	6	8	-	-
PC3. Discuss and identify micro-entrepreneurship opportunities in Renewable energy power supply arrangement plant for green hydrogen plant	6	8	-	-
PC4. Discuss micro-entrepreneurship opportunities in storage of green hydrogen	6	-	-	-
PC5. Discuss micro-entrepreneurship opportunities in Installation of pipelines in green hydrogen plant/industry and Safe transportation of green hydrogen to consumers	6	-	-	-
PC6. Discuss micro-entrepreneurship opportunities in Handling of salt enriched water from water feed input system, (if required, depending on the type of electrolyser)	6	-	-	-
PC7. Discuss micro-entrepreneurship opportunities in Operation and Maintenance along with Managing safety of the plant	6	-	-	-
PC8. Discuss micro-entrepreneurship opportunities in leakage monitoring, purging of hydrogen by CO2/NH3 etc	6	-	-	-
PC9. Illustrate and Demonstrate opportunities for potential micro-entrepreneurship in all the key segments in green hydrogen sector	2	8	-	-
PC10. Explain how to Identify entrepreneurial opportunities for inspecting the Green hydrogen production system facility, perform equipment's, product and marketing documentation, quality control, process validation, verify the procedures and records related to the activities of the manufacturing unit	5	8	-	-
PC11. Discuss and Identify opportunities in labelling/certification for green hydrogen generators and facilitating them comply with relevant standards and regulations	5	8	-	-
NOS Total	60	40	-	-

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
DGT/VSQ/N0103: Employability Skills (90 Hours)	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Introduction to Employability Skills	1	1	-	-
PC1. understand the significance of employability skills in meeting the current job market requirement and future of work	-	-	-	-
PC2. identify and explore learning and employability relevant portals	-	-	-	-
PC3. research about the different industries, job market trends, latest skills required and the available opportunities	-	-	-	-
Constitutional values - Citizenship	1	1	-	-
PC4. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC5. follow environmentally sustainable practices	-	-	-	-
Becoming a Professional in the 21st Century	1	3	-	-
PC6. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC7. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
PC8. adopt a continuous learning mindset for personal and professional development	-	-	-	-
Basic English Skills	3	4	-	-
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

PC10. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC11. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
Career Development & Goal Setting	**1**	**2**	-	-
PC12. identify career goals based on the skills, interests, knowledge, and personal attributes	-	-	-	-
PC13. prepare a career development plan with short- and long-term goals	-	-	-	-
Communication Skills	**2**	**2**	-	-
PC14. follow verbal and non-verbal communication etiquette while communicating in professional and public settings	-	-	-	-
PC15. use active listening techniques for effective communication	-	-	-	-
PC16. communicate in writing using appropriate style and format based on formal or informal requirements	-	-	-	-
PC17. work collaboratively with others in a team	-	-	-	-
Diversity & Inclusion	**1**	**1**	-	-
PC18. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC19. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
Financial and Legal Literacy	**2**	**3**	-	-
PC20. identify and select reliable institutions for various financial products and services such as bank account, debit and credit cards, loans, insurance etc.	-	-	-	-
PC21. carry out offline and online financial transactions, safely and securely, using various methods and check the entries in the passbook	-	-	-	-

	PC22. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
	PC23. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
	Essential Digital Skills	**3**	**5**	-	-
	PC24. operate digital devices and use their features and applications securely and safely	-	-	-	-
	PC25. carry out basic internet operations by connecting to the internet safely and securely, using the mobile data or other available networks through Bluetooth, Wi-Fi, etc.	-	-	-	-
	PC26. display responsible online behaviour while using various social media platforms	-	-	-	-
	PC27. create a personal email account, send and process received messages as per requirement	-	-	-	-
	PC28. carry out basic procedures in documents, spreadsheets and presentations using respective and appropriate applications	-	-	-	-
	PC29. utilize virtual collaboration tools to work effectively	-	-	-	-
	Entrepreneurship	**2**	**3**	-	-
	PC30. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
	PC31. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
	PC32. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
	Customer Service	**1**	**2**	-	-
	PC33. identify different types of customers and ways to communicate with them	-	-	-	-

	PC34. identify and respond to customer requests and needs in a professional manner	-	-	-	-
	PC35. use appropriate tools to collect customer feedback	-	-	-	-
	PC36. follow appropriate hygiene and grooming standards	-	-	-	-
	Getting ready for apprenticeship & Jobs	**2**	**3**	-	-
	PC37. create a professional Curriculum vitae (Résumé)	-	-	-	-
	PC38. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
	PC39. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
	PC40. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
	PC41. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
	NOS Total	**20**	**30**	-	-

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes
SGJ/N0802: Maintain Health & Safety at Green Hydrogen generation project site	

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Safe work area	**24**	**26**	**-**	**-**
PC1. Explain the requirements for safe work area at hydrogen generation project site	2	2	-	-
PC2. Explain the importance of Occupational health & Safety standards and regulations for Basic considerations for the safety of hydrogen systems	3	-	-	-
PC3. Explain the importance of administering first aid and Demonstrate how to administer first aid	3	-	-	-
PC4. Demonstrate the usage of personal protective equipment for ensuring safety during installation and O&M work	-	3	-	-
PC5. Describe potential causes of emergency such as gas leaks, fire, explosion, bomb threatening, natural calamities etc	2	-1	-	-
PC6. Demonstrate the use of fire extinguishers, fire detection and alarm system	-	2	-	-
PC7. Discuss importance of different detectors and safety tools	3	-	-	-
PC8. Show how to comply with all applicable statutory requirements along with safety regulations in terms of fire protection.	-	3	-	-
PC9. Review the Material Safety Data Sheet and labels of chemicals contained in cylinders in order to be aware of their hazards and precautionary measures	-	3	-	-
PC10. Demonstrate how to follow necessary and adequate safety measures including personal protective equipment and precautions to avoid any accident at hydrogen generation site	-	3	-	-
PC11. Explain need to maintain ideal temperature and humidity level of storage areas used to safely contain gas cylinders	3	-	-	-

	PC12. Discuss how to Utilize sensors that can alert the responsible person such as a safety officer when storage rooms are not maintaining the ideal conditions for storing hazardous chemicals	2	-	-	-
	PC13. Identify the personal protective equipment used for the specific purpose.	2	2	-	-
	PC14. Demonstrate how to follow necessary and adequate safety measures including personal protective equipment and precautions to avoid any accident at hydrogen generation site	-	2	-	-
	PC15. Identify the hazards associated with hydrogen generation system	-	2	-	-
	PC16. Identify work safety procedures and instructions for working at hydrogen generation plant complying with applicable safety regulations	-	2	-	-
	PC17. Discuss Mock testing of fire fighting system	2	-	-	-
	PC18. Discuss all applicable statutory requirements along with safety regulations in terms of fire protection.	2	-	-	-
	PC19. Show how to Incorporate good housekeeping practices and infection control guidelines.	-	3	-	-
	NOS Total	**24**	**26**	**-**	**-**

Grand Total	Theory	Practical	Project Marks	Viva Marks
450	224	226	0	0

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

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

On the Job:

OJT Monitoring Report

- As in Green Jobs Sector, reproducing the evidence for assessment is not feasible due to constraints like cost, confidentiality and controlled environment, every
- apprentice is required to record the evidences performed during the OJT and the same gets authorized by his/her supervisor.
- The evidence recording is done in a structured monitoring report, termed as OJT Monitoring report.
- During the OJT, every trainee is required to fill the OJT monitoring report which is required to be signed by his/her supervisor.
- Towards the end of OJT period these reports are submitted with the HR department of company
- These duly submitted reports are then verified by an Industry nominated assessor for verification of evidence.

Theory, Practical & Viva:

- Scope – Is used to test the knowledge and understanding and skills acquired during the OJT as well as to conform the OJT monitoring report.
- Some personality traits and generic skills (such as – promptness, sharpness, communication skills, depth of knowledge, comprehension, presentation, patience
- etc) can also be tested, which is also required for the QP.

- Tools – The assessment's questions should be aligned with the Qualification Pack, covering the PCs. There will be summative assessment at the end of the OJT.
- Method – Direct questions open and close ended questions, situation-based questions, analytical questions, and decision-making based questions for Viva,
- MCQ for the theory and performing QP related operations for practical. Different questions in theory, practical and viva are included to test relevant PCs from
- the QP
- Analysis – Assessor draws a spectrum of ready answers to be expected from trainee for Viva. This reduces effect of subjectivity of the assessor. Comparative
- quality of trainees within a batch or different institutes can be gauged. The skill is gauged by observing the practical work.

Execution of OJT Assessment:

- HR department hands over the individual OJT monitoring report with Industry nominated assessor and schedules an assessment meeting for each trainee.
- Industry nominated assessor assesses each trainee based on OJT monitoring report, viva on each PC and also takes into account attendance of each trainee towards the end of the OJT period.
- The OJT marks are compiled for each NOS by the Industry nominated assessor and submitted with HR department of company.
- The OJT assessment results are then sent to SCGJ by HR department of company in a sealed envelope for compiling the assessment results in case of offline assessment.

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf

Annexure: Career Progression and OM