

Qualification Pack



Green Hydrogen Storage Hub Manager

QP Code: LSC/Q3905

Version: 1.0

NSQF Level: 6

Logistics Sector Skill Council || No. 480 A, 7th Floor, Khivraj Complex II, Anna Salai, Nandanam
Chennai-600035 || email:hari@lsc-india.com



Qualification Pack

Contents

LSC/Q3905: Green Hydrogen Storage Hub Manager	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
LSC/N3927: Plan green hydrogen storage hub operations	5
LSC/N3928: Manage storage systems and equipment performance	12
LSC/N3930: Maintain relations with stakeholders	18
LSC/N3929: Manage safety and environmental regulations	23
LSC/N9604: Perform cost optimization, profit management and strategic business activities	30
LSC/N3926: Follow Safety and Security Guidelines for Green Hydrogen	36
DGT/VSQ/N0103: Employability Skills (90 Hours)	41
Assessment Guidelines and Weightage	49
<i>Assessment Guidelines</i>	49
<i>Assessment Weightage</i>	50
Acronyms	51
Glossary	52

Qualification Pack

LSC/Q3905: Green Hydrogen Storage Hub Manager

Brief Job Description

Green Hydrogen Storage Hub Manager is responsible for planning and coordinating storage hub operations, ensuring the safe and efficient management of hydrogen storage systems, and driving compliance with environmental and sustainability standards. They will devise and implement strategies, processes, and programs to meet industry standards and regulatory requirements. The individual in this role will also maintain operational records, financial reports, and compliance documentation for audits and inspections. Additionally, they will drive innovation in storage technology, manage legal and contractual obligations, and lead sustainability and environmental impact management efforts.

Personal Attributes

The individual must have an analytical ability to work and coordinate with others. They should have good verbal and written communication skills and a ready-to-deploy mindset to work for this profile.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [LSC/N3927: Plan green hydrogen storage hub operations](#)
2. [LSC/N3928: Manage storage systems and equipment performance](#)
3. [LSC/N3930: Maintain relations with stakeholders](#)
4. [LSC/N3929: Manage safety and environmental regulations](#)
5. [LSC/N9604: Perform cost optimization, profit management and strategic business activities](#)
6. [LSC/N3926: Follow Safety and Security Guidelines for Green Hydrogen](#)
7. [DGT/VSQ/N0103: Employability Skills \(90 Hours\)](#)

Qualification Pack (QP) Parameters

Sector	Logistics
Sub-Sector	Port Terminals, ICD and CFS, Liquid Logistics, Warehousing (Storage & Packaging)
Occupation	Green Hydrogen Operations/ Handling, Hub Operations

Qualification Pack

Country	India
NSQF Level	6
Credits	20
Aligned to NCO/ISCO/ISIC Code	NCO-2015/1324
Minimum Educational Qualification & Experience	<p>Post Graduate (Completed PG in Logistics) with 1 Year of experience relevant experience in hub operations/ warehousing OR Completed 4 year UG program with 2 Years of experience relevant experience in hub operations/ warehousing OR Completed 3 year UG degree with 3 Years of experience relevant experience in hub operations/ warehousing OR 2-year Diploma after 12th grade (in any field) with 4 Years of experience relevant experience in hub operations/ warehousing OR Previous relevant Qualification of NSQF Level (5.5) with 1.5 years of experience relevant experience in hub operations/ warehousing OR Previous relevant Qualification of NSQF Level (5) with 3 Years of experience relevant experience in hub operations/ warehousing</p>
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	25 Years
Last Reviewed On	NA
Next Review Date	22/10/2027
NSQF Approval Date	22/10/2024
Version	1.0
Reference code on NQR	QG-06-TW-03311-2024-V1-LSC
NQR Version	1.0

Qualification Pack

LSC/N3927: Plan green hydrogen storage hub operations

Description

This OS is about planning green hydrogen storage hub operations.

Scope

The scope covers the following :

- Administer Regulatory Compliance in green hydrogen storage
- Oversee operational efficiency in hydrogen storage facilities
- Organise GH2 storage hub operations
- Manage infrastructure and resource
- Manage finance for GH2 storage hub operations
- Coordinate with the Logistics team for inbound/outbound operations

Elements and Performance Criteria

Administer Regulatory Compliance in green hydrogen storage

To be competent, the user/individual on the job must be able to:

- PC1.** Ensure all operations comply with Indian standards and regulations, including PESO guidelines and the Environmental Protection Act 1986.
- PC2.** Coordinate with regulatory bodies like the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCB) to obtain approvals permits and conduct inspections for environmental and safety clearances.
- PC3.** Prepare and submit regulatory compliance reports, including Environmental Impact Assessments (EIAs) and Safety Audit Reports, ensuring all regulatory requirements are met.
- PC4.** Monitor updates to regulatory requirements and revise compliance practices as needed, staying informed about amendments to regulations and standards related to green hydrogen storage.

Oversee operational efficiency in hydrogen storage facilities

To be competent, the user/individual on the job must be able to:

- PC5.** Oversee the day-to-day operations of hydrogen storage facilities, ensuring efficient and safe management of storage tanks, pipelines, and related infrastructure.
- PC6.** Implement best practices for operational efficiency by following standards like ISO 9001:2015 for Quality Management Systems.
- PC7.** Manage facility operation budgets by estimating costs, planning finances, and monitoring expenses to ensure effective use of resources within budget constraints.

Organise GH2 storage hub operations

To be competent, the user/individual on the job must be able to:

- PC8.** Set objectives and key performance indicators (KPIs) to enhance operational efficiency.
- PC9.** Calculate hydrogen throughput to evaluate the volume of hydrogen entering and exiting the storage facility over a specific period.
- PC10.** Calculate the Hydrogen Storage Capacity Utilization Rate.

Qualification Pack

- PC11.** Identify any losses during the storage cycle.
- PC12.** Set SMART objectives (Specific, Measurable, Achievable, Relevant, and Time-bound) for each area of the storage hub.
- PC13.** Utilise project management tools such as Gantt charts, Kanban boards, and similar tools., to visualise the action plan, track progress, and manage dependencies.
- PC14.** Conduct regular assessments of storage capacity and usage patterns.

Manage infrastructure and resource

To be competent, the user/individual on the job must be able to:

- PC15.** Monitor and analyse hydrogen production, storage levels, and distribution data.
- PC16.** Manage hydrogen inventory levels to ensure sufficient stock.
- PC17.** Schedule and coordinate routine maintenance activities for all equipment to ensure smooth operation and prevent unexpected downtime.
- PC18.** Identify and troubleshoot any technical issues related to the infrastructure and work with engineers.
- PC19.** Collaborate with transportation companies to ensure the safe and efficient distribution of hydrogen to customers.

Manage finance for GH2 storage hub operations

To be competent, the user/individual on the job must be able to:

- PC20.** Track the energy consumption used for compressing, storing, and releasing hydrogen, identifying areas for energy efficiency to achieve significant cost savings.
- PC21.** Manage and understand the budget allocated for the maintenance of storage facilities and equipment, ensuring its efficient use.
- PC22.** Collaborate with the finance team to prioritise and budget for necessary capital expenditures, such as upgrades to storage facilities or equipment.
- PC23.** Consider preventative maintenance strategies and potential financial buffers to address the costs associated with unexpected downtime due to equipment failures.

Coordinate with the Logistics team for inbound/outbound operations

To be competent, the user/individual on the job must be able to:

- PC24.** Collaborate on scheduling and planning with the logistics team to optimise hydrogen delivery schedules, considering production cycles, storage capacity, and transportation availability.
- PC25.** Communicate inventory levels effectively to ensure transparent updates on current hydrogen stocks, facilitating accurate delivery planning.
- PC26.** Coordinate transportation needs by specifying the type and quantity of hydrogen for inbound and outbound shipments, including gaseous and liquefied forms.
- PC27.** Track and monitor shipments proactively to identify potential delays or disruptions and ensure safe and timely delivery.
- PC28.** Resolve logistical challenges collaboratively with the logistics team, addressing issues such as transportation alternatives and adjusting schedules as needed.
- PC29.** Maintain documentation accurately for all inbound and outbound hydrogen shipments, including quantities, destinations, safety certificates, and other relevant details.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

Qualification Pack

- KU1.** Various methods of hydrogen storage (gaseous, liquid, ammonia).
- KU2.** Project management tools include Gantt charts, Kanban boards, and similar tools.
- KU3.** National Building Code of India (NBC), 2016.
- KU4.** Gas Cylinder Rules, 2016, and the Indian Electricity Act, 2003.
- KU5.** Parameters and formulae for calculating the Hydrogen Storage Capacity Utilization Rate.
- KU6.** The market price of hydrogen and negotiate competitive rates with offtakes to maximise revenue.
- KU7.** Projected return on Investment (ROI) for the storage hub.
- KU8.** Storage equipment and technology.
- KU9.** Petroleum and Explosives Safety Organization (PESO), ISO 14687, ISO/TS 19880-1, and other relevant standards.
- KU10.** Standards like ISO 9001:2015 for Quality Management Systems.
- KU11.** Principles of supply chain and logistics.
- KU12.** Team dynamics and management techniques.
- KU13.** Financial management principles.
- KU14.** How to calculate training efficacy.
- KU15.** Effective feedback techniques.
- KU16.** Budgeting processes.
- KU17.** Techniques for monitoring and controlling costs.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read manuals, work orders, health and safety instructions, etc.
- GS2.** Communicate effectively with stakeholders both verbally and in writing.
- GS3.** Actively listen to and understand the needs of stakeholders.
- GS4.** Handle complaints and difficult situations professionally.
- GS5.** Work effectively as part of a team to achieve common goals.
- GS6.** Communicate policies and updates clearly to stakeholders.
- GS7.** Plan and organise daily tasks to ensure efficient completion of work.
- GS8.** Use basic numeracy skills for data recording and analysis.
- GS9.** Make small calculations using basic mathematics.
- GS10.** Foster positive relationships within the workplace.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Administer Regulatory Compliance in green hydrogen storage</i>	4	8	-	2
PC1. Ensure all operations comply with Indian standards and regulations, including PESO guidelines and the Environmental Protection Act 1986.	1	2	-	0.5
PC2. Coordinate with regulatory bodies like the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCB) to obtain approvals permits and conduct inspections for environmental and safety clearances.	1	2	-	0.5
PC3. Prepare and submit regulatory compliance reports, including Environmental Impact Assessments (EIAs) and Safety Audit Reports, ensuring all regulatory requirements are met.	1	2	-	0.5
PC4. Monitor updates to regulatory requirements and revise compliance practices as needed, staying informed about amendments to regulations and standards related to green hydrogen storage.	1	2	-	0.5
<i>Oversee operational efficiency in hydrogen storage facilities</i>	3	6	-	1
PC5. Oversee the day-to-day operations of hydrogen storage facilities, ensuring efficient and safe management of storage tanks, pipelines, and related infrastructure.	1	2	-	0.5
PC6. Implement best practices for operational efficiency by following standards like ISO 9001:2015 for Quality Management Systems.	1	2	-	0.5
PC7. Manage facility operation budgets by estimating costs, planning finances, and monitoring expenses to ensure effective use of resources within budget constraints.	1	2	-	-
<i>Organise GH2 storage hub operations</i>	7	14	-	2
PC8. Set objectives and key performance indicators (KPIs) to enhance operational efficiency.	1	2	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC9. Calculate hydrogen throughput to evaluate the volume of hydrogen entering and exiting the storage facility over a specific period.	1	2	-	0.5
PC10. Calculate the Hydrogen Storage Capacity Utilization Rate.	1	2	-	-
PC11. Identify any losses during the storage cycle.	1	2	-	-
PC12. Set SMART objectives (Specific, Measurable, Achievable, Relevant, and Time-bound) for each area of the storage hub.	1	2	-	0.5
PC13. Utilise project management tools such as Gantt charts, Kanban boards, and similar tools., to visualise the action plan, track progress, and manage dependencies.	1	2	-	-
PC14. Conduct regular assessments of storage capacity and usage patterns.	1	2	-	0.5
<i>Manage infrastructure and resource</i>	5	10	-	1.5
PC15. Monitor and analyse hydrogen production, storage levels, and distribution data.	1	2	-	0.5
PC16. Manage hydrogen inventory levels to ensure sufficient stock.	1	2	-	0.5
PC17. Schedule and coordinate routine maintenance activities for all equipment to ensure smooth operation and prevent unexpected downtime.	1	2	-	-
PC18. Identify and troubleshoot any technical issues related to the infrastructure and work with engineers.	1	2	-	0.5
PC19. Collaborate with transportation companies to ensure the safe and efficient distribution of hydrogen to customers.	1	2	-	-
<i>Manage finance for GH2 storage hub operations</i>	4	8	-	1
PC20. Track the energy consumption used for compressing, storing, and releasing hydrogen, identifying areas for energy efficiency to achieve significant cost savings.	1	2	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. Manage and understand the budget allocated for the maintenance of storage facilities and equipment, ensuring its efficient use.	1	2	-	0.5
PC22. Collaborate with the finance team to prioritise and budget for necessary capital expenditures, such as upgrades to storage facilities or equipment.	1	2	-	-
PC23. Consider preventative maintenance strategies and potential financial buffers to address the costs associated with unexpected downtime due to equipment failures.	1	2	-	-
<i>Coordinate with the Logistics team for inbound/outbound operations</i>	7	14	-	2.5
PC24. Collaborate on scheduling and planning with the logistics team to optimise hydrogen delivery schedules, considering production cycles, storage capacity, and transportation availability.	1	2	-	0.5
PC25. Communicate inventory levels effectively to ensure transparent updates on current hydrogen stocks, facilitating accurate delivery planning.	1	2	-	-
PC26. Coordinate transportation needs by specifying the type and quantity of hydrogen for inbound and outbound shipments, including gaseous and liquefied forms.	1	2	-	0.5
PC27. Track and monitor shipments proactively to identify potential delays or disruptions and ensure safe and timely delivery.	1	2	-	0.5
PC28. Resolve logistical challenges collaboratively with the logistics team, addressing issues such as transportation alternatives and adjusting schedules as needed.	1	2	-	0.5
PC29. Maintain documentation accurately for all inbound and outbound hydrogen shipments, including quantities, destinations, safety certificates, and other relevant details.	2	4	-	0.5
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N3927
NOS Name	Plan green hydrogen storage hub operations
Sector	Logistics
Sub-Sector	
Occupation	Green Hydrogen Operations/ Handling, Hub Operations
NSQF Level	6
Credits	3
Version	1.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

Qualification Pack

LSC/N3928: Manage storage systems and equipment performance

Description

This OS unit is about managing technology for green hydrogen projects.

Scope

The scope covers the following :

- Oversee the installation, maintenance, and operation of storage systems for GH2
- Monitor the performance of the storage systems for GH2
- Identify and implement new technologies

Elements and Performance Criteria

Oversee the installation, maintenance, and operation of storage systems for GH2

To be competent, the user/individual on the job must be able to:

- PC1.** Coordinate with engineers, contractors, and suppliers to ensure hydrogen storage systems are installed correctly according to technical specifications and safety regulations, including reviewing plans, scheduling installations, managing logistics, and adhering to Indian Standards for Hydrogen Infrastructure (IS 16018:2012).
- PC2.** Supervise installation to ensure correct equipment positioning, safety protocols, and adherence to engineering designs (following IS 10496:1983 for Equipment Design), conduct inspections, verify compliance, and perform functional testing.
- PC3.** Ensure all systems are thoroughly tested for safety and efficiency before they are handed over for use, following Commissioning Plans and Testing Protocols, and meeting standards like ASME BPVC for Pressure Vessel Design.
- PC4.** Assess risks in storage systems to find issues that could affect efficiency and safety, use methods like HAZOP, Risk Management Frameworks, and SIL assessments.
- PC5.** Create maintenance schedules for all equipment in the storage system, following daily, weekly, monthly, and annual tasks based on criticality and the manufacturer's guidelines, implementing predictive maintenance strategies and ensuring compliance with ISO 55001:2014 for asset management.
- PC6.** Analyse collected data to identify trends, potential issues, and areas for improvement using data visualisation tools and collaborating with engineers.

Monitor the performance of the storage systems for GH2

To be competent, the user/individual on the job must be able to:

- PC7.** Manage data collection and analysis of system performance metrics such as pressure, temperature, and energy consumption, involving setting up Data Acquisition Systems, defining Key Performance Indicators (KPIs), and utilising tools for real-time monitoring and analysis.
- PC8.** Work with advanced data visualisation and analytics tools such as Looker, Zoho Analytics, or IBM Cognos Analytics to analyse collected data, identify trends, potential issues, and improvement areas, and collaborate with engineers to develop performance reports and enhancement strategies.

Qualification Pack

- PC9.** Implement optimisation strategies by adjusting control parameters, refining maintenance schedules, and identifying upgrade opportunities aligned with best practices and emerging technologies.

Identify and implement new technologies

To be competent, the user/individual on the job must be able to:

- PC10.** Assess emerging technologies for their potential in green hydrogen projects by evaluating readiness feasibility and staying updated through industry research and conferences.
- PC11.** Develop plans to integrate new technologies, including creating Integration Roadmaps, defining Technical Requirements, and ensuring alignment with Project Objectives and Stakeholder Expectations.
- PC12.** Encourage team members to propose innovative solutions, facilitate brainstorming sessions, foster an innovative culture, and recognise contributions to technological advancements.
- PC13.** Monitor the impact of innovations on operations.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Properties of hydrogen in different states (gaseous, liquid, ammonia).
- KU2.** National and international standards for hydrogen storage systems.
- KU3.** Safety protocols for installation, operation, and maintenance of hydrogen storage systems.
- KU4.** Engineering principles related to the design and installation of hydrogen storage systems.
- KU5.** Project management techniques, including scheduling, logistics, resource allocation, and coordination with engineers, contractors, and suppliers.
- KU6.** Methods to analyse the impact of identified risks on operations.
- KU7.** Data visualisation tools like Looker, Zoho Analytics, IBM Cognos Analytics, etc.
- KU8.** Preventive maintenance schedules and practices.
- KU9.** Performance optimisation strategies.
- KU10.** Impact of innovations on operational efficiency and safety.
- KU11.** Legal and contractual requirements related to hydrogen storage systems, including permits, licenses, and compliance documentation.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read manuals, work orders, health and safety instructions, etc.
- GS2.** Communicate effectively with stakeholders, both verbally and in writing.
- GS3.** Actively listen to and understand the needs of stakeholders.
- GS4.** Handle stakeholders and difficult situations professionally.
- GS5.** Make informed decisions in response to customer inquiries and operational challenges.
- GS6.** Work effectively as part of a team to achieve common goals.
- GS7.** Plan and organise daily tasks to ensure efficient completion of work.



Qualification Pack

GS8. Use basic numeracy skills for data recording and analysis.

GS9. Foster positive relationships within the workplace.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Oversee the installation, maintenance, and operation of storage systems for GH2</i>	12	30	-	6
PC1. Coordinate with engineers, contractors, and suppliers to ensure hydrogen storage systems are installed correctly according to technical specifications and safety regulations, including reviewing plans, scheduling installations, managing logistics, and adhering to Indian Standards for Hydrogen Infrastructure (IS 16018:2012).	2	5	-	1
PC2. Supervise installation to ensure correct equipment positioning, safety protocols, and adherence to engineering designs (following IS 10496:1983 for Equipment Design), conduct inspections, verify compliance, and perform functional testing.	2	5	-	1
PC3. Ensure all systems are thoroughly tested for safety and efficiency before they are handed over for use, following Commissioning Plans and Testing Protocols, and meeting standards like ASME BPVC for Pressure Vessel Design.	2	5	-	1
PC4. Assess risks in storage systems to find issues that could affect efficiency and safety, use methods like HAZOP, Risk Management Frameworks, and SIL assessments.	2	5	-	1
PC5. Create maintenance schedules for all equipment in the storage system, following daily, weekly, monthly, and annual tasks based on criticality and the manufacturer's guidelines, implementing predictive maintenance strategies and ensuring compliance with ISO 55001:2014 for asset management.	2	5	-	1
PC6. Analyse collected data to identify trends, potential issues, and areas for improvement using data visualisation tools and collaborating with engineers.	2	5	-	1
<i>Monitor the performance of the storage systems for GH2</i>	6	15	-	2

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC7. Manage data collection and analysis of system performance metrics such as pressure, temperature, and energy consumption, involving setting up Data Acquisition Systems, defining Key Performance Indicators (KPIs), and utilising tools for real-time monitoring and analysis.	2	5	-	1
PC8. Work with advanced data visualisation and analytics tools such as Looker, Zoho Analytics, or IBM Cognos Analytics to analyse collected data, identify trends, potential issues, and improvement areas, and collaborate with engineers to develop performance reports and enhancement strategies.	2	5	-	0.5
PC9. Implement optimisation strategies by adjusting control parameters, refining maintenance schedules, and identifying upgrade opportunities aligned with best practices and emerging technologies.	2	5	-	0.5
<i>Identify and implement new technologies</i>	12	15	-	2
PC10. Assess emerging technologies for their potential in green hydrogen projects by evaluating readiness feasibility and staying updated through industry research and conferences.	2	5	-	0.5
PC11. Develop plans to integrate new technologies, including creating Integration Roadmaps, defining Technical Requirements, and ensuring alignment with Project Objectives and Stakeholder Expectations.	3	3	-	0.5
PC12. Encourage team members to propose innovative solutions, facilitate brainstorming sessions, foster an innovative culture, and recognise contributions to technological advancements.	3	3	-	0.5
PC13. Monitor the impact of innovations on operations.	4	4	-	0.5
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N3928
NOS Name	Manage storage systems and equipment performance
Sector	Logistics
Sub-Sector	
Occupation	Green Hydrogen Operations/ Handling, Hub Operations
NSQF Level	6
Credits	3
Version	1.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

Qualification Pack

LSC/N3930: Maintain relations with stakeholders

Description

This OS unit is about maintaining relations with stakeholders.

Scope

The scope covers the following :

- Manage a good relationship with customers and stakeholders
- Manage legal contracts

Elements and Performance Criteria

Manage a good relationship with customers and stakeholders

To be competent, the user/individual on the job must be able to:

- PC1.** Identify key customers and stakeholders.
- PC2.** Develop and implement strategic Stakeholder Engagement Plans using advanced methodologies such as Stakeholder Engagement Frameworks, Communication Plans, and Engagement Strategies based on international standards like ISO 26000:2010 for Social Responsibility.
- PC3.** Utilising tools such as Salesforce or Zoho CRM and applying techniques for Conflict Resolution, Feedback Analysis, and Issue Management.
- PC4.** Develop actionable Customer Service Improvement Plans and Performance Measurement Frameworks by monitoring customer satisfaction and identifying improvement areas using metrics like Customer Satisfaction Index, Net Promoter Score (NPS), and Customer Experience Management (CEM).
- PC5.** Implement measures to enhance service quality by adhering to SQM standards like ISO 9001:2015, implementing quality assurance practices such as Six Sigma methodologies, TQM principles, and service improvement initiatives.
- PC6.** Use Complaint Management Systems to handle customer complaints promptly, employing techniques like Root Cause Analysis, escalation procedures, and effective resolution strategies in accordance with Customer Service Protocols.

Manage legal contracts

To be competent, the user/individual on the job must be able to:

- PC7.** Draft and negotiate non-procurement agreements with suppliers, vendors, and service providers, utilising contract drafting techniques, negotiation strategies, and knowledge of legal frameworks under the Indian Contract Act, 1872, including creating SLAs, MoUs, and detailed Terms of Service.
- PC8.** Monitor performance, conduct compliance audits, and report exceptions rigorously in contract administration, applying frameworks from the Indian Contract Act, 1872, and relevant industry standards.

Qualification Pack

- PC9.** Handle contract disputes and issues by employing established Dispute Resolution Mechanisms like Arbitration, Mediation, and Legal Consultation, adhering to the provisions of the Arbitration and Conciliation Act, 1996, encompassing planning, legal framework comprehension, and implementation of resolutions .
- PC10.** Implement legal compliance protocols, including frameworks, policies, procedures, programs, risk management protocols, and checklists.
- PC11.** Develop and implement legal compliance protocols.
- PC12.** Perform regular legal audits, prepare audit reports, and implement corrective measures based on findings to ensure adherence to legal and regulatory standards.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** CRM techniques and best practices.
- KU2.** Salesforce and Zoho CRM.
- KU3.** Root Cause Analysis, escalation procedures, and effective resolution strategies.
- KU4.** Stakeholder engagement strategies.
- KU5.** Service Quality Management (SRM).
- KU6.** Techniques for monitoring and improving service quality.
- KU7.** Negotiation techniques.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read manuals, work orders, health and safety instructions, etc.
- GS2.** Communicate effectively with stakeholders, both verbally and in writing.
- GS3.** Actively listen to and understand the needs of stakeholders.
- GS4.** Handle stakeholders and difficult situations professionally.
- GS5.** Make informed decisions in response to customer inquiries and operational challenges.
- GS6.** Work effectively as part of a team to achieve common goals.
- GS7.** Plan and organise daily tasks to ensure efficient completion of work.
- GS8.** Use basic numeracy skills for data recording and analysis.
- GS9.** Foster positive relationships within the workplace.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage a good relationship with customers and stakeholders</i>	12	30	-	6
PC1. Identify key customers and stakeholders.	2	5	-	1
PC2. Develop and implement strategic Stakeholder Engagement Plans using advanced methodologies such as Stakeholder Engagement Frameworks, Communication Plans, and Engagement Strategies based on international standards like ISO 26000:2010 for Social Responsibility.	2	5	-	1
PC3. Utilising tools such as Salesforce or Zoho CRM and applying techniques for Conflict Resolution, Feedback Analysis, and Issue Management.	2	5	-	1
PC4. Develop actionable Customer Service Improvement Plans and Performance Measurement Frameworks by monitoring customer satisfaction and identifying improvement areas using metrics like Customer Satisfaction Index, Net Promoter Score (NPS), and Customer Experience Management (CEM).	2	5	-	1
PC5. Implement measures to enhance service quality by adhering to SQM standards like ISO 9001:2015, implementing quality assurance practices such as Six Sigma methodologies, TQM principles, and service improvement initiatives.	2	5	-	1
PC6. Use Complaint Management Systems to handle customer complaints promptly, employing techniques like Root Cause Analysis, escalation procedures, and effective resolution strategies in accordance with Customer Service Protocols.	2	5	-	1
<i>Manage legal contracts</i>	18	30	-	4
PC7. Draft and negotiate non-procurement agreements with suppliers, vendors, and service providers, utilising contract drafting techniques, negotiation strategies, and knowledge of legal frameworks under the Indian Contract Act, 1872, including creating SLAs, MoUs, and detailed Terms of Service.	3	5	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC8. Monitor performance, conduct compliance audits, and report exceptions rigorously in contract administration, applying frameworks from the Indian Contract Act, 1872, and relevant industry standards.	3	5	-	1
PC9. Handle contract disputes and issues by employing established Dispute Resolution Mechanisms like Arbitration, Mediation, and Legal Consultation, adhering to the provisions of the Arbitration and Conciliation Act, 1996, encompassing planning, legal framework comprehension, and implementation of resolutions .	4	5	-	0.5
PC10. Implement legal compliance protocols, including frameworks, policies, procedures, programs, risk management protocols, and checklists.	4	5	-	0.5
PC11. Develop and implement legal compliance protocols.	2	5	-	0.5
PC12. Perform regular legal audits, prepare audit reports, and implement corrective measures based on findings to ensure adherence to legal and regulatory standards.	2	5	-	0.5
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N3930
NOS Name	Maintain relations with stakeholders
Sector	Logistics
Sub-Sector	
Occupation	Green Hydrogen Operations/ Handling, Hub Operations
NSQF Level	6
Credits	3
Version	1.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

Qualification Pack

LSC/N3929: Manage safety and environmental regulations

Description

This OS unit is about safety management and environmental regulations.

Scope

The scope covers the following :

- Implement safety protocols and emergency response plans
- Manage environmental sustainability

Elements and Performance Criteria

Implement safety protocols and emergency response plans

To be competent, the user/individual on the job must be able to:

- PC1.** Apply advanced methods such as Job Safety Analysis (JSA), Failure Mode and Effects Analysis (FMEA), and Hazard and Operability Study (HAZOP) to thoroughly identify and evaluate hazards and risks in hydrogen storage and distribution systems.
- PC2.** Develop and document safety protocols, emergency response plans, and operating procedures based on industry standards like NFPA 2 and ISO 19884 to ensure compliance with regulatory requirements.
- PC3.** Organise routine safety drills and training sessions for staff to ensure they are well-prepared for emergencies, including designing and executing drills focused on hydrogen leaks, fires, and system failures, using techniques like simulation exercises and incident management training.
- PC4.** Plan and perform regular safety audits and inspections to verify compliance with safety protocols and regulatory standards, following ISO 45001:2018 guidelines, and document findings in audit reports for management review.
- PC5.** Utilise advanced risk assessment tools and techniques, such as Quantitative Risk Analysis (QRA), Risk Matrix Analysis, and Safety Integrity Level (SIL) Determination, to identify and mitigate risks associated with hydrogen technologies, establishing effective control measures.
- PC6.** Maintain accurate records of safety audits, risk assessments, compliance documentation, audit records, compliance logs, incident reports, and safety documentation to ensure adherence to regulatory requirements and internal policies for record-keeping.
- PC7.** Stay informed about updates to relevant regulations, including PESO guidelines, CPCB standards, and Hazardous Waste Management Rules, and conduct regulatory research to ensure organisational compliance with Indian regulations.
- PC8.** Develop compliance checklists, regulatory procedures, and implementation plans to ensure adherence to safety standards and environmental requirements.
- PC9.** Coordinate with regulatory bodies for inspections, certifications, and compliance verification, oversee interactions, manage inspections, and facilitate certification processes for safety and environmental permits.

Manage environmental sustainability

Qualification Pack

To be competent, the user/individual on the job must be able to:

- PC10.** Conduct comprehensive ecological audits, including EIAs and sustainability reviews, in compliance with ISO 14001:2015, and produce detailed audit reports.
- PC11.** Ensure effective implementation and adherence to environmental laws and regulations, including the Environment Protection Act, 1986, and other Indian ecological mandates, through environmental compliance measures and regulatory checks.
- PC12.** Develop and execute environmental compliance plans, sustainability strategies, and green initiatives aligned with operational needs and regulatory requirements to promote environmental stewardship.
- PC13.** Identify and implement sustainable practices, including energy efficiency measures, waste reduction strategies, and the integration of green technologies, to minimise environmental impact and enhance operational efficiency.
- PC14.** Train staff on sustainability principles.
- PC15.** Monitor and report on sustainability performance.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Quantitative Risk Analysis (QRA), Risk Matrix Analysis, and Safety Integrity Level (SIL) Determination.
- KU2.** NFPA 2, ISO 19884, and other safety standards.
- KU3.** Best practices for handling and storing hydrogen.
- KU4.** PESO guidelines, CPCB regulations, and other Indian standards.
- KU5.** Environmental laws and regulations in India.
- KU6.** Procedures for handling emergencies (fires, leaks, etc.).
- KU7.** Roles and responsibilities in emergencies.
- KU8.** Environment Protection Act, 1986, and other relevant regulations.
- KU9.** Procedures for conducting EIAs.
- KU10.** Environmental benefits of green hydrogen.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Read manuals, work orders, health and safety instructions, etc.
- GS2.** Deliver exceptional customer service with a friendly, professional, and courteous demeanour.
- GS3.** Communicate effectively with customers and supervisors, both verbally and in writing.
- GS4.** Actively listen to and understand the needs of customers and colleagues.
- GS5.** Handle customer complaints and difficult situations professionally.
- GS6.** Make informed decisions in response to customer inquiries and operational challenges.
- GS7.** Work effectively as part of a team to achieve common goals.
- GS8.** Plan and organise daily tasks to ensure efficient completion of work.



Qualification Pack

- GS9.** Use basic numeracy skills for data recording and analysis.
- GS10.** Foster positive relationships within the workplace.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Implement safety protocols and emergency response plans</i>	18	36	-	4.5
PC1. Apply advanced methods such as Job Safety Analysis (JSA), Failure Mode and Effects Analysis (FMEA), and Hazard and Operability Study (HAZOP) to thoroughly identify and evaluate hazards and risks in hydrogen storage and distribution systems.	2	4	-	0.5
PC2. Develop and document safety protocols, emergency response plans, and operating procedures based on industry standards like NFPA 2 and ISO 19884 to ensure compliance with regulatory requirements.	2	4	-	0.5
PC3. Organise routine safety drills and training sessions for staff to ensure they are well-prepared for emergencies, including designing and executing drills focused on hydrogen leaks, fires, and system failures, using techniques like simulation exercises and incident management training.	2	4	-	0.5
PC4. Plan and perform regular safety audits and inspections to verify compliance with safety protocols and regulatory standards, following ISO 45001:2018 guidelines, and document findings in audit reports for management review.	2	4	-	0.5
PC5. Utilise advanced risk assessment tools and techniques, such as Quantitative Risk Analysis (QRA), Risk Matrix Analysis, and Safety Integrity Level (SIL) Determination, to identify and mitigate risks associated with hydrogen technologies, establishing effective control measures.	2	4	-	0.5
PC6. Maintain accurate records of safety audits, risk assessments, compliance documentation, audit records, compliance logs, incident reports, and safety documentation to ensure adherence to regulatory requirements and internal policies for record-keeping.	2	4	-	0.5

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC7. Stay informed about updates to relevant regulations, including PESO guidelines, CPCB standards, and Hazardous Waste Management Rules, and conduct regulatory research to ensure organisational compliance with Indian regulations.	2	4	-	0.5
PC8. Develop compliance checklists, regulatory procedures, and implementation plans to ensure adherence to safety standards and environmental requirements.	2	4	-	0.5
PC9. Coordinate with regulatory bodies for inspections, certifications, and compliance verification, oversee interactions, manage inspections, and facilitate certification processes for safety and environmental permits.	2	4	-	0.5
<i>Manage environmental sustainability</i>	12	24	-	5.5
PC10. Conduct comprehensive ecological audits, including EIAs and sustainability reviews, in compliance with ISO 14001:2015, and produce detailed audit reports.	2	4	-	0.5
PC11. Ensure effective implementation and adherence to environmental laws and regulations, including the Environment Protection Act, 1986, and other Indian ecological mandates, through environmental compliance measures and regulatory checks.	2	4	-	1
PC12. Develop and execute environmental compliance plans, sustainability strategies, and green initiatives aligned with operational needs and regulatory requirements to promote environmental stewardship.	2	4	-	1
PC13. Identify and implement sustainable practices, including energy efficiency measures, waste reduction strategies, and the integration of green technologies, to minimise environmental impact and enhance operational efficiency.	2	4	-	1
PC14. Train staff on sustainability principles.	2	4	-	1
PC15. Monitor and report on sustainability performance.	2	4	-	1



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N3929
NOS Name	Manage safety and environmental regulations
Sector	Logistics
Sub-Sector	
Occupation	Green Hydrogen Operations/ Handling, Hub Operations
NSQF Level	6
Credits	3
Version	1.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQC Clearance Date	22/10/2024

Qualification Pack

LSC/N9604: Perform cost optimization, profit management and strategic business activities

Description

This unit is about performing cost optimization, profit management and strategic business activities.

Scope

The scope covers the following :

- Cost optimization and profit management
- Perform the strategic business activities
- Design and participate in the business strategy at senior level

Elements and Performance Criteria

Cost optimization and profit management

To be competent, the user/individual on the job must be able to:

- PC1.** oversee overall resource deployment trends with respect to suitability of equipment/ skilled workforce, capacity utilization
- PC2.** identify unprofitable ventures and accordingly allocate resource and make work plan to achieve profitability
- PC3.** identify cost heads to see over-expenditure, poor utilization and curb those to optimise cost
- PC4.** look for and implement bundling options to minimise cost

Perform the strategic business activities

To be competent, the user/individual on the job must be able to:

- PC5.** oversee fleet purchasing, leasing and branding of vehicles to support the companys business activities
- PC6.** develop and maintain client relations at a senior level and work closely with existing and future customers to meet their requirements
- PC7.** prepare sales plan and sale strategies to attract institutional as well as retail clients
- PC8.** be up to date with service offerings and developments in both the organization and the industry
- PC9.** lead and direct all commercial activities in the country and participate in bids and contract negotiations to acquire significant new business
- PC10.** analyse pin code expansion model and take action for setting up service centre in new area/city
- PC11.** create performance objectives and financial sustainability parameters for service centre or hub
- PC12.** check compliance with the Service level agreements (SLA)
- PC13.** check service centre performance and customer experience

Design and participate in the business strategy at senior level

To be competent, the user/individual on the job must be able to:

Qualification Pack

- PC14.** develop and maintain the budgeting sheet for the unit by discussing with subordinates and upper management
- PC15.** lead multiple large cross-functional teams facilitate projects and achieving targeted goals
- PC16.** identify the bottlenecks and lead process innovation initiatives
- PC17.** enhance the performance based on by process improvement projects and quality certification
- PC18.** devise strategies or process improvements to minimise errors and delays

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** vision, mission and values of the company
- KU2.** company's reporting structure to support and expedite project activities
- KU3.** company's policy and work instructions on quality standards as well as documentation policy
- KU4.** importance of the individual's role in the workflow
- KU5.** company's policy on business ethics and code of conduct
- KU6.** business and performance of the company
- KU7.** knowledge repository and various projects done by the company
- KU8.** occupational health and safety standards, handling of special and dangerous goods, etc.
- KU9.** procedures for dealing with loss or damage to goods
- KU10.** value of items handled and implications of damage/loss of the same
- KU11.** risk and impact of not following defined work, safety and security procedures
- KU12.** company policy defined Turnaround Time (TATs) and output metrics for daily operations
- KU13.** coding system followed to label items
- KU14.** the Information Technology (IT) system and ERP system of the organization
- KU15.** organizational goal for the year as well as branch/ territory targets
- KU16.** process flow of service operation and understanding of basic supply chain value chain
- KU17.** state/country taxes and routing
- KU18.** local and global geographies
- KU19.** use of ERP software including Warehouse Management System (WMS), Material Management System (MMS) and Transport Management System (TMS)
- KU20.** use of tools for documentation: MS excel and MS Word, etc.
- KU21.** basics of statistical and quantitative analysis tools
- KU22.** use of spreadsheets to tabulate and analyze the data
- KU23.** structure and implications of fees and charges involved in transportation, warehousing, processing clearances, etc.
- KU24.** transit rules and regulations
- KU25.** different Material Handling Equipment (MHEs) and other equipment used for handling the shipment
- KU26.** procurement related concepts like Purchase order (PO), Invoices, procedures etc.

Qualification Pack

- KU27.** significance of team coordination to achieve revenue and productivity targets of the organisation
- KU28.** various techniques for performance improvement and cost accounting

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** written instructions, standard operating procedures
- GS2.** inferences drawn from the system reports
- GS3.** financial statements
- GS4.** write letters, reports and communications
- GS5.** prepare reports and presentations based on data analytics and ERP reports
- GS6.** communicate with internal and external stakeholders
- GS7.** communicate with client, external coordinators, internal staff effectively
- GS8.** motivate employees
- GS9.** share experiences and provide guidance to juniors and peers
- GS10.** assess business performance to identify need for interventions
- GS11.** identify areas for improvement and suggest remedial action
- GS12.** identify areas for budget modifications and budget cuts
- GS13.** decide on ways to improve performance
- GS14.** plan and organise performance review sessions
- GS15.** make action plan for performance improvement
- GS16.** organise projects/ training plans for performance improvement
- GS17.** monitor the activities of the performance improvement plan
- GS18.** address the customer requirement and sensitive employees towards it
- GS19.** focus on customer satisfaction
- GS20.** identify key reasons for variances and resolve them in discussion with team and management
- GS21.** suggest new technologies, capital purchases, operational strategies to enhance operational and financial performance
- GS22.** analyze reasons for variances across departments
- GS23.** compare analysis with past trends to see if it is seasonal or cyclical in nature
- GS24.** identify areas that are crucial for improvement and budget revisions
- GS25.** assess the financial performance and make strategic decisions regarding budgets, focus areas
- GS26.** motivate and ensure output so as to achieve financial goals

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Cost optimization and profit management</i>	8	12	-	2
PC1. oversee overall resource deployment trends with respect to suitability of equipment/ skilled workforce, capacity utilization	2	3	-	1
PC2. identify unprofitable ventures and accordingly allocate resource and make work plan to achieve profitability	2	3	-	-
PC3. identify cost heads to see over-expenditure, poor utilization and curb those to optimise cost	2	3	-	1
PC4. look for and implement bundling options to minimise cost	2	3	-	-
<i>Perform the strategic business activities</i>	12	33	-	5
PC5. oversee fleet purchasing, leasing and branding of vehicles to support the companys business activities	2	4	-	1
PC6. develop and maintain client relations at a senior level and work closely with existing and future customers to meet their requirements	2	4	-	-
PC7. prepare sales plan and sale strategies to attract institutional as well as retail clients	2	4	-	1
PC8. be up to date with service offerings and developments in both the organization and the industry	1	3	-	-
PC9. lead and direct all commercial activities in the country and participate in bids and contract negotiations to acquire significant new business	1	4	-	-
PC10. analyse pin code expansion model and take action for setting up service centre in new area/city	1	4	-	1
PC11. create performance objectives and financial sustainability parameters for service centre or hub	1	4	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. check compliance with the Service level agreements (SLA)	1	3	-	-
PC13. check service centre performance and customer experience	1	3	-	1
<i>Design and participate in the business strategy at senior level</i>	10	15	-	3
PC14. develop and maintain the budgeting sheet for the unit by discussing with subordinates and upper management	2	3	-	-
PC15. lead multiple large cross-functional teams facilitate projects and achieving targeted goals	2	3	-	1
PC16. identify the bottlenecks and lead process innovation initiatives	2	3	-	-
PC17. enhance the performance based on by process improvement projects and quality certification	2	3	-	1
PC18. devise strategies or process improvements to minimise errors and delays	2	3	-	1
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N9604
NOS Name	Perform cost optimization, profit management and strategic business activities
Sector	Logistics
Sub-Sector	Generic
Occupation	Customer relationship management, Institutional sales, Branch sales, Hub/branch Operations, Documentation and Reporting
NSQF Level	6
Credits	2
Version	3.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQF Clearance Date	22/10/2024

Qualification Pack

LSC/N3926: Follow Safety and Security Guidelines for Green Hydrogen

Description

This unit is about adhering to regulation and safety standards at the Green Hydrogen facility.

Scope

The scope covers the following :

- Compliance with GH2 regulations and standards
- Safety procedure and First aid

Elements and Performance Criteria

Compliance with GH2 Regulations and Standards

To be competent, the user/individual on the job must be able to:

- PC1.** Stay informed about the latest hydrogen production, storage, and distribution regulations.
- PC2.** Keep away any ignition sources from hydrogen storage areas and maintain a strict no-smoking policy within this zone.
- PC3.** Follow signage and warnings for usage of hazardous areas and equipment.
- PC4.** Always wear appropriate cryogenic protective clothing, gloves and equipment when handling liquid hydrogen.
- PC5.** Report any non-compliance issues promptly to relevant personnel.
- PC6.** Adhere to safety protocols when using materials, tools, and equipment for handling GH2.
- PC7.** Follow established safety procedures for working with hydrogen, including permit systems, lockout/tagout procedures, and access controls.

Safety Procedures and First Aid

To be competent, the user/individual on the job must be able to:

- PC8.** Activate alarms and evacuate personnel according to emergency plans, ensuring everyone's safety.
- PC9.** Provide clear and concise information about the incident to the emergency responders and rescue personnel.
- PC10.** Participate in regular emergency response drills and training, demonstrating competence and composure in simulated scenarios.
- PC11.** Use appropriate fire extinguishers compatible with hydrogen and fire hoses to isolate the fire at the source.
- PC12.** Respond promptly and effectively to emergencies and potential hydrogen leaks, including evacuation procedures, communication with emergency services, and implementation of emergency response plans.
- PC13.** Follow first aid instructions according to the type of injury/ incident.
- PC14.** Move yourself or the injured person away from the source of the cryogenic liquid or gas to stop further exposure.

Knowledge and Understanding (KU)

Qualification Pack

The individual on the job needs to know and understand:

- KU1.** Principles of hydrogen storage, and dispensing equipment.
- KU2.** Safety protocols and regulations governing the operation and storage of hydrogen.
- KU3.** Hydrogen fire, cryogenic temperatures and high-pressure systems.
- KU4.** Wearing cryogenic protective clothing.
- KU5.** Common signs of equipment malfunction, leaks, or pressure irregularities.
- KU6.** Interpretation of monitoring tools and indicators.
- KU7.** Electric equipment in hazardous areas/zones.
- KU8.** PASS technique of using a fire extinguisher.
- KU9.** Common safety hazards associated with green hydrogen.
- KU10.** Emergency shut-off systems and alarms.
- KU11.** Apply basic knowledge of MSDS used for KOH, H₂, O₂.

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** Communicate clearly and concisely with colleagues, supervisors, and emergency services.
- GS2.** Collaborate effectively with maintenance personnel to diagnose and address equipment issues.
- GS3.** Actively listen to and consider feedback from colleagues and supervisors.
- GS4.** Make quick and informed decisions during emergencies.
- GS5.** Adapt to changing circumstances and unforeseen situations.
- GS6.** Remain up-to-date on the latest regulations and standards.
- GS7.** Maintain composure and clear thinking under pressure.
- GS8.** Evaluate risks and benefits before taking any action.
- GS9.** Utilize the principles of time management and organizational skills to prioritize tasks, manage workload, and meet deadlines effectively.
- GS10.** Engage in ongoing professional development for enhanced job performance.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Compliance with GH2 Regulations and Standards</i>	14	31	-	4
PC1. Stay informed about the latest hydrogen production, storage, and distribution regulations.	2	4	-	-
PC2. Keep away any ignition sources from hydrogen storage areas and maintain a strict no-smoking policy within this zone.	2	4	-	-
PC3. Follow signage and warnings for usage of hazardous areas and equipment.	2	5	-	1
PC4. Always wear appropriate cryogenic protective clothing, gloves and equipment when handling liquid hydrogen.	2	5	-	1
PC5. Report any non-compliance issues promptly to relevant personnel.	2	5	-	-
PC6. Adhere to safety protocols when using materials, tools, and equipment for handling GH2.	2	4	-	1
PC7. Follow established safety procedures for working with hydrogen, including permit systems, lockout/tagout procedures, and access controls.	2	4	-	1
<i>Safety Procedures and First Aid</i>	16	29	-	6
PC8. Activate alarms and evacuate personnel according to emergency plans, ensuring everyone's safety.	3	4	-	1
PC9. Provide clear and concise information about the incident to the emergency responders and rescue personnel.	3	4	-	1
PC10. Participate in regular emergency response drills and training, demonstrating competence and composure in simulated scenarios.	2	5	-	1
PC11. Use appropriate fire extinguishers compatible with hydrogen and fire hoses to isolate the fire at the source.	2	5	-	1

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. Respond promptly and effectively to emergencies and potential hydrogen leaks, including evacuation procedures, communication with emergency services, and implementation of emergency response plans.	2	4	-	1
PC13. Follow first aid instructions according to the type of injury/ incident.	2	3	-	1
PC14. Move yourself or the injured person away from the source of the cryogenic liquid or gas to stop further exposure.	2	4	-	-
NOS Total	30	60	-	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	LSC/N3926
NOS Name	Follow Safety and Security Guidelines for Green Hydrogen
Sector	Logistics
Sub-Sector	Port Terminals, ICD and CFS, Liquid Logistics
Occupation	Green Hydrogen Operations/ Handling
NSQF Level	5.5
Credits	2
Version	1.0
Last Reviewed Date	22/10/2024
Next Review Date	22/10/2027
NSQF Clearance Date	22/10/2024

Qualification Pack

DGT/VSQ/N0103: Employability Skills (90 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- PC6.** recognize the significance of 21st Century Skills for employment

Qualification Pack

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

Qualification Pack

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** need for employability skills and different learning and employability related portals
- KU2.** various constitutional and personal values
- KU3.** different environmentally sustainable practices and their importance
- KU4.** Twenty first (21st) century skills and their importance
- KU5.** how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up
- KU6.** importance of career development and setting long- and short-term goals
- KU7.** about effective communication
- KU8.** POSH Act
- KU9.** Gender sensitivity and inclusivity
- KU10.** different types of financial institutes, products, and services

Qualification Pack

- KU11.** components of salary and how to compute income and expenditure
- KU12.** importance of maintaining safety and security in offline and online financial transactions
- KU13.** different legal rights and laws
- KU14.** different types of digital devices and the procedure to operate them safely and securely
- KU15.** how to create and operate an e- mail account
- KU16.** use applications such as word processors, spreadsheets etc.
- KU17.** how to identify business opportunities
- KU18.** types and needs of customers
- KU19.** how to apply for a job and prepare for an interview
- KU20.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read and write different types of documents/instructions/correspondence in English and other languages
- GS2.** communicate effectively using appropriate language in formal and informal settings
- GS3.** behave politely and appropriately with all to maintain effective work relationship
- GS4.** how to work in a virtual mode, using various technological platforms
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	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	-	-	-	-
<i>Constitutional values - Citizenship</i>	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	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	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	-	-	-	-
<i>Basic English Skills</i>	3	4	-	-
PC9. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-	-	-
<i>Career Development & Goal Setting</i>	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	-	-	-	-
<i>Communication Skills</i>	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	-	-	-	-
<i>Diversity & Inclusion</i>	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	-	-	-	-
<i>Financial and Legal Literacy</i>	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	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-	-	-
<i>Essential Digital Skills</i>	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	-	-	-	-
<i>Entrepreneurship</i>	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	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC33. identify different types of customers and ways to communicate with them	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	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	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0103
NOS Name	Employability Skills (90 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	5
Credits	3
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	08/05/2028
NSQC Clearance Date	08/05/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion
5. To pass the Qualification Pack, every trainee should score a minimum of 70% for NSQF level 4 & above job roles and 50% for NSQF level 1 to 3 job roles
6. In case of unsuccessful completion, the trainee may seek re-assessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

Qualification Pack

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Minimum Passing % at NOS Level: 50

(Please note: A Trainee must score the minimum percentage for each NOS separately as well as on the QP as a whole.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
LSC/N3927.Plan green hydrogen storage hub operations	30	60	0	10	100	20
LSC/N3928.Manage storage systems and equipment performance	30	60	0	10	100	20
LSC/N3930.Maintain relations with stakeholders	30	60	0	10	100	20
LSC/N3929.Manage safety and environmental regulations	30	60	0	10	100	15
LSC/N9604.Perform cost optimization, profit management and strategic business activities	30	60	-	10	100	10
LSC/N3926.Follow Safety and Security Guidelines for Green Hydrogen	30	60	0	10	100	10
DGT/VSQ/N0103.Employability Skills (90 Hours)	20	30	-	-	50	5
Total	200	390	-	60	650	100



Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.