NSDA Code

2018/TLW/LSC/2431

NSQF QUALIFICATION FILE
Approved in 23rd NSQC Meeting, 22nd August, 2019

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

Logistics Skill Council

'Temple Towers', Ground Floor, No 476, Anna Salai, Nandanam, Chennai 600 035

Name and contact details of individual dealing with the submission

Name **:** Mr. Dhanasekar B

Position in the Organization **:** Head – HR, Standards & Quality Assurance

Address if different from above : Same as above

Tel number : +91-7200072711

E-mail address **:** dhanab@lsc-india.com

List of documents submitted in support of the Qualifications File

1. Model Curriculum having indicative list of equipment, lesson plan with training duration and trainer qualification
2. NSDC Human Resource & Skills Requirement in Logistics Sector
3. Qualification pack
4. Validations received from industry
5. Occupational mapping

- **SUMMARY**

1	**Qualification Title**		**Cold Chain Engineering Specialist**
2	**Qualification Code, if any**		LSC/Q8702
3	**NCO code and occupation**		• NCO 2015
4	**Nature and purpose of the qualification (Please specify whether qualification is short term or long term)**	-	**Nature:** Certificate course of Cold Chain Engineering Specialist **Purpose:** Learners who attain this qualification are competent in managing cold chain and can get a job in cold storage operations to oversee end to end cold chain operations including refrigerated storage, transportation and data entry operations.
5	**Body/bodies which will award the qualification**		**Logistics Skill Council**
6	**Body which will accredit providers to offer courses leading to the qualification**		**Logistics Skill Council**
7	**Whether accreditation/affiliation norms are already in place or not , if applicable (if yes, attach a copy)**		Yes For non PMKVY, both accreditation and affiliation is done by LSC based on due diligence report For PMKVY centres, accreditation happens via SMART portal and review of centre inspection reports. Upon obtaining accreditation from NSDC, centre will be affiliated by LSC based on due diligence Refer Annexure 1 – Affiliation document
8	**Occupation(s) to which the qualification gives access**		Engineering
9	**Job description of the occupation**		The individual at work manages energy efficiency in cold chain by analysing data related to energy use, identifying inefficiencies and implementing ways to minimize them. The person is also responsible for maintaining equipment for temperature and storage conditions, undertaking water and effluent treatment

			in the plant and managing control systems of the refrigeration system components
10	**Licensing requirements**		Not Applicable
11	**Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided)**		Not applicable
12	**Level of the qualification in the NSQF**		6
13	**Anticipated volume of training/learning required to complete the qualification**		410 hrs
14	**Indicative list of training tools required to deliver this qualification**		**For a class of 30 candidates** Teaching board – 1 Projector – 1 White board - 1 Video player or TV – 1 Printer – 1 Computer – 15 Stationaries – 30 Marker – 2 Compressor - 1 Condenser 1 Evaporator-1 insulation equipment/ system - 1 cold room setup - 1 piping set up - 2 Leak detection system - 1 CO2 tank -1 Oxygen tank - 1 Ethylene tank - 1 Piping system - 1 Monitor and control systems - 1 Pressure gauges -1

15	**Entry requirements and/or recommendations and minimum age**		Graduate in Mechanical / Electrical / Electronical / Refrigeration engineering / food technology/ pharmacy with relevant experience (or) Diploma in engineering/ food technology/ pharmacy with relevant experience 24 years
16	**Progression from the qualification (Please show Professional and academic progression)**		Professional - - After completion of course and after 2-3 years of experience a person can move up the ladder to Cold Chain Lead. S/he can progress horizontally across land transportation/distribution management and supervisor roles. Academic – 1. For a Graduate - Post-Graduation is the next stage of progression 2. For a Diploma – Graduation is the next stage of progression
17	**Arrangements for the Recognition of Prior learning (RPL)**		LSC currently undertakes RPL through the following modes – 1. The companies outreach to LSC regarding their requirement for RPL. LSC arranges for a trainer or a training agency to conduct the short term RPL programme post which, LSC member conducts assessment and provide accreditation/ certification for the same 2. The training centre run RPL courses in coordination with industry and companies and post the course conduct assessment and certification 3. The companies reach out to LSC regarding RPL requirements. They conduct their own training as per the RPL requirements and post training LSC reviews and provides certifications regarding RPL
18	**International comparability where**		ISCO-08/1324

	known (research evidence to be provided)		We could not find any specialised courses with respect to cold chain logistics management by International skill authorities elsewhere. However, qualification in warehouse and supply chain management are available

19	**Date of planned review of the qualification.**	05/2022		
20	**Formal structure of the qualification**			
		Mandatory/ Optional	**Estimated size (learning hours)**	**Level**
A	**Mandatory components**			
	Introduction	Mandatory	30	6
	LSC/N9201 Manage energy efficiency in the cold chain operations	Mandatory	70	6
	LSC/N9202 Oversee modified atmosphere requirements for the products	Mandatory	70	6
	LSC/N9203 Undertake water and effluent treatment programme	Mandatory	70	6
	LSC/N9204 Manage engineering system for the cold chain	Mandatory	70	6
	LSC/N9901 Maintain food and personnel safety, health and hygiene in cold storage plant	Mandatory	50	6
	LSC/N9902 Communicate effectively with colleagues and clients	Mandatory	50	6
	Sub Total (A)		**410 Hrs**	
B	**Optional/ elective component**			
	Cold Chain Engineering Specialist	**Mandatory/ Optional**	**Estimated size (learning hours)**	**Level**
	Nil			
	Sub total B			
	Total (A+B)		**410 Hrs**	

SECTION 1
ASSESSMENT

21 **Body/Bodies which will carry out assessment:**

Sl.No.	Assessment Agency
1	Hemsen EXIM LLP
2	Mettl
3	I-Vintage solutions Pvt. Ltd.
4	CoCubes
5	Samhit Assessments & research foundation
6	Formac Software Services

7	Lead
8	C & K Management Limited
9	Krish Networks
10	Green Arrows
11	Anagha Solutions
12	Logistics Sector Skill Council (LSSC Agency)
13	Eminence Solutions

22 **How will RPL assessment be managed and who will carry it out?**

RPL courses would be conducted based on the demand and requirement of industry as and when they approach LSC. There are three ways of conducting RPL assessments -

1. The companies outreach to LSC regarding their requirement for RPL. LSC arranges for a trainer or a training agency to conduct the short term RPL programme post which, LSC member conducts assessment and provide accreditation/ certification for the same

2. The training centre run RPL courses in coordination with industry and companies and post the course conduct assessment and certification

3. The companies reach out to LSC regarding RPL requirements. They conduct their own training as per the RPL requirements and post training LSC reviews and provides certifications regarding RPL

The assessment would be done by either LSC or the affiliated assessment agencies listed in the previous point

23 **Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.**

1. ASSESSMENT Guideline

Assessment of the Candidates on completion of the Training is a very important activity that is monitored by Logistics Sector Skill Council (LSC). It ensures sustained quality of training delivery. It also indicates to the LSC the need for any changes in training content. LSC has developed policies related to affiliation of assessment agencies and assessment process to enhance the quality of assessments and they are outlined in succeeding paragraphs.

1) Policy on affiliation of assessment agencies:

LSC has created a policy for affiliation of assessment agencies as under mentioned.

1) Affiliating Industry as assessment agencies

2) Affiliation of assessment agencies set up by individuals with relevant and extensive industry experience

3) Affiliation of assessment agencies set up by individuals retired from Defence academies

4) Affiliation of academic assessment agencies with strong industry connect and ability to place candidates in logistics sector.

2) Assessment process:

1) The assessment process would begin by developing the correct qualitative questions for theory/practical and viva. Questions papers are submitted by Assessment Bodies (AB) to LSC for approval.

2) AB submits Assessor's details, their experience and credentials to LSC for approval.

3) Third step in the process would be allocation of batches by LSC to AB for which LSC has shifted from a manual allocation system to automated allocation on the basis of grading system on the below mentioned parameters.

i. Quality of the assessors submitted by the assessment agency

ii. Certification of the assessor by LSC basis the training of assessor's program conducted by LSC

iii. Adherence to schedule of assessments by the assessment agencies

iv. Integrity of the assessor in conducting quality assessments

v. Quality of the question papers submitted by the assessment agencies to LSC

vi. Submission of quality documents of the assessments conducted as insisted by LSC

vii. Time of submission of the required assessment related documents to LSC for approval

viii. Time of submission of results in SDMS system post approval by LSC

Basis the above grading metrics the system would allocate the batches to the assessment agencies, which has brought transparency in the system of who are allocated how many batches and it is made very clear to the ecosystem that performance matters a lot.

This has in turn also helped to improve the quality of the trainings as the check list of documents advised by LSC to be submitted by the assessment agencies speaks on the quality of trainings happening.

2. **ASSESSORS**

Sl.No.	Assessment Agency
1	Hemsen EXIM LLP
2	Mettl
3	I-Vintage solutions Pvt. Ltd.
4	CoCubes
5	Samhit Assessments & research foundation

6	Formac Software Services
7	Lead
8	C & K Management Limited
9	Krish Networks
10	Green Arrows
11	Anagha Solutions
12	Logistics Sector Skill Council (LSSC Agency)
13	Eminence Solutions

3. ELIGIBILITY TO APPEAR IN THE EXAM:

Minimum Educational Qualification: Graduate in Mechanical / Electrical / Electronical / Refrigeration engineering / food technology/ pharmacy with relevant experience (or)
Diploma in engineering/ food technology/ pharmacy with relevant experience
Work experience: Graduate with 3 years of experience in cold storage operations (or)
Diploma with 5 years of experience in cold storage operations

4. MARKING SCHEME:

Sr. No.	Method of Assessments	Weightage (Max. marks)
1	Theory	30%
2	Practical	70%
Total		**100**

5. PASSING MARKS: Every trainee should score minimum 70% in every technical NOS. and 60% in every non-technical NOS

6. RESULTS AND CERTIFICATION: Logistics Skill Council

Please attach most relevant and recent documents giving further information about assessment and/or RPL.
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in "Formal structure of the qualification" in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.

24. Assessment evidences

Guidelines for Assessment 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC 3. 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 these criteria 5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS 6. In case of unsuccessful completion, the trainee make seek re-assessment on the Qualification Pack

Title of Component:

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
1	Manage energy efficiency in the cold chain	To be competent, the user/individual on the job must be able to 1.1. identify parameters impacting energy usage 1.2. perform correlation between energy consumption and the parameters identified to impact energy usage 1.3. monitor electrical energy consumption, temperature, relative humidity (RH) and air pressure 1.4. define threshold for parameters in energy consumption 1.5. check all thermostat set points 1.6. evaluate costs and benefits of re-piping the facilities 1.7. perform thermographic inspection to analyse

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		cold areas where there is poor insulation 1.8. separate energy consumption of refrigeration system from the energy used by the whole plant 1.9. identify the quantum of undercooling and overcooling during the analysis period 1.10. identify the impact of weather conditions on the energy consumed 1.11. explore ways to control lighting by daylight sensors and occupancy sensors 1.12. identify ways to adjust chiller or refrigeration equipment to achieve better performance 1.13. look for ways to promote renewable energy by utilizing bio-waste to generate bio-gas, wherever possible 1.14. improve evaporator performance by looking for ways to reduce fan motor horsepower 1.15. use eco-friendly refrigerants with minimal global warming potential of ozone depleting substances 1.16. ensure to pick air cooled condenser or evaporative condenser based on the refrigerant used, size of the system and availability of water 1.17. achieve optimal energy usage conditions for the chiller 1.18. improve part-load performance for evaporators, condensers and compressors 1.19. reduce refrigeration load by checking under-floor heating, insulation levels, warehouse doors usage 1.20. reduce load in lighting of the warehouse, by using high efficiency lighting (sodium lights or high frequency fluorescents) 1.21. employ automatic refrigerant leak detection systems 1.22. reduce heat load by improving insulation and reducing air leakage 1.23. select low power consumed per ton of refrigeration, while upgrading evaporator units

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		1.24. upgrade to high efficiency condenser units 1.25. use sliding doors instead of traditional freezer doors, which are better insulated, require low maintenance, reduce frost build up, thereby reducing overall energy consumption 1.26. use energy efficient PVC strip curtains for the cold storage doors or air curtains, to reduce air exchange during door openings 1.27. ensure that the floor heaters are working properly and well protected for the deep freezers
2	Oversee modified atmosphere requirements for the products	To be competent, the user/individual on the job must be able to 1.1. maintain temperature ranges ideal for the products stored or transported 1.2. maintain concentration of oxygen, carbon dioxide, nitrogen and ethylene as per the commodities stored 1.3. consider product heat and set ventilation to control cooling and carbon dioxide level 1.4. monitor composition of gases regularly and accurately 1.5. monitor for chilling injury symptoms on the products 1.6. ensure to keep the room or container sealed 1.7. ensure proper sanitation to avoid conditions which favours thriving of pathogenic microorganisms 1.8. assign a resource to maintain records of refrigeration equipment 1.9. operate nitrogen generator with its controls and fan blowers 1.10. regularly sample air parameters in the cold chamber to check the conditions 1.11. understand how to stop the system and replenish the cold chamber with fresh air when required 1.12. ensure to retrofit container with purge port assembly, when they contain perishable

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		products and transported, to make it suitable for modified atmosphere use 1.13. prepare absorbers and adsorbers of oxygen, carbon dioxide, ethylene and water 1.14. ensure that legal requirements are followed while collecting, moving or 1.15. prepare documentation regarding modified atmospheric conditions maintained for different products 1.16. ensure that maintenance records of relevant equipment and cleaning records in the modified atmosphere storage area are made 1.17. report any faults in the readings of required modified atmosphere requirements 1.18. quantify extended storability of the products dealt with
3	Undertake water and effluent treatment programme	To be competent, the user/individual on the job must be able to 1.1. ensure that the water treatment programme consists of controlling water circulation, chemical feed and routine monitoring 1.2. ensure that treated water is used on the product, to avoid the threat of external pathogens spoiling them 1.3. find cost effective ways for treatment and recycle of COD (chemical oxygen demand) waste water 1.4. verify water treatment system compatibility with the plant operations 1.5. explore options to collect water from evaporator units, if they have defrost unit, and provide them to condenser or cooling tower 1.6. ensure to maintain condenser tubes clean after water treatment 1.7. identify treated effluent and tweak its treatment, if it is not as per the specification 1.8. record information and document necessary details for generating programme efficacy

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		report 1.9. monitor remedial engineering works 1.10. explore possibility of rain water harvesting in case there is large roof surfaces for the cold storage plant 1.11. confirm that the treatment areas are hygienic and safe 1.12. investigate faults and errors and take corrective actions 1.13. train operators for water and effluent treatment procedures employed 1.14. monitor overfeed or underfeed of water treatment chemicals 1.15. inspect chemical feed system to check for leaks
4	Manage engineering system for the cold chain	To be competent, the user/individual on the job must be able to 1.1. automate the operation of evaporators, condensers and compressors as much as possible 1.2. minimize the power consumption for evaporators, condensers and compressors combined 1.3. control evaporators when the cold room has attained desired temperature 1.4. ensure that hydraulic oil is adapted to the temperatures operated at the cold storeidentify different components of engineering system employed which needs to be checked at regular intervals 1.5. plan and schedule the frequency with which each component in the facility needs to be examined 1.6. analyse pressure drop between condenser and evaporator, to check if it crosses two pounds 1.7. examine insulated pipes which show signs of corrosion or frost appearances 1.8. examine corroded parts to analyse and

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		decide regarding the need for re-insulation or maintenance 1.9. record information and document regarding operations of evaporators, condensers and compressors 1.10. document power consumption of refrigeration system at regular intervals 1.11. record observations made in the analysis of existing facilities and the needs identified for its revamp
6	Maintain food and personnel safety, health and hygiene in cold storage	To be competent, the user/ individual must be able to: 1.1. assess the various health, safety and environmental hazards in the cold storage 1.2. take necessary steps to eliminate or minimize the hazards 1.3. analyze the causes of accidents at the workplace 1.4. take preventive measures to avoid risk of cold burns and other injury due to contact with hot surfaces, gas, fire, hot fluids/ liquids, etc. 1.5. ensure the employees have access to first aid kit when needed 1.6. ensure to use personal protective equipment and safety gear such as gloves, jacket, footwear etc. for loading and unloading material in cold rooms to protect themselves from hypothermia, frostbite etc 1.7. ensure to display safety signs at places where necessary for people to be cautious 1.8. use rubber mats in the places where floors are constantly wet 1.9. ensure electrical precautions such as insulated clothing, adequate equipment insulation, dry work area, switch off the power supply when not required, etc 1.10. display emergency exit plan at prominent places and have emergency assembly area

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		earmarked as a grid for easy counting of on duty associates and workers. 1.11. unplug the control panel, compressor, condensor etc before performing maintenance 1.12. report to the superior on any problems and hazards identified 1.13. install fire alarms (electrical/manual) in cold store/deep freeze and keep other safety devices like hammer/mallet in the storage area 1.14. maintain appropriate ventilation in the cold rooms to avoid unacceptable accumulation of heat, condensation or odours 1.15. check and review the cold storage areas frequently 1.16. stack items in an organized way and use safe lifting techniques to reduce risk of injuries from handling procedures at the storage areas 1.17. ensure no sign of pest infestation and install rodent traps, fly glues and insectocutors wherever needed 1.18. follow hygiene & sanitation standards of Government bodies like FSSAI, APEDA and /or EIA or importing countries like FAO, EU standards after PC 20 1.19. use effective loading and unloading systems 1.20. proper stock rotation (First in First out) to be practised 1.21. segregate damaged/ non-conforming products from other products to designate area for appropriate disposition 1.22. fumigate containers depending upon product and contamination or as per customers' requirement 1.23. avoid smoking, spitting, eating etc near food storage area 1.24. ensure reefers are covered, clean, free from pest infestation & other contaminants 1.25. dispose cold storage plant waste in the

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		designated areas safely as per company's policies and rules 1.26. ensure to be safe while handling machines(generator, compressor, condensor etc), gas (ammonia) and chemicals(ethylene, refrigerants etc) 1.27. keep the floors free from oil, water and grease to avoid slippery surface 1.28. cut nails regularly and avoid applying nail paint. Avoid wearing bangles, rings, and chains in cold storage 1.29. wash hands with soap solution and dry under a dryer as they enter for duty or after using wash room 1.30. periodic examination of protective devices, pressure vessels and pipelines, and parts of pipework by a competent person to prevent defect that may give rise to danger 1.31. ensure workers suffering from abscess, boils etc should be relieved from food handling 1.32. develop personal hygiene habits like brushing teeth, taking shower everybody, wearing clean and tidy clothes after ironing etc
7	Communicate effectively with colleagues and clients	To be competent, the user/ individual must be able to: 1.1. understand the work output requirements, targets, performance indicators and incentives 1.2. deliver quality work on time and report any anticipated reasons for delays 1.3. escalate unresolved problems or complaints to the relevant superior 1.4. communicate project progress proactively to the superior 1.5. receive feedback on work standards 1.6. document the completed work schedule and handover to the superior 1.7. exhibit trust, support and respect to all the

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		colleagues in the workplace 1.8. aim to achieve hassle free cold chain operation 1.9. help and assist colleagues with information and knowledge 1.10. seek assistance from the colleagues when required 1.11. identify the potential and existing conflicts with the colleagues and resolve 1.12. pass on essential information to other colleagues on timely basis 1.13. maintain the etiquette, use polite language, demonstrate responsible and disciplined behaviors to the colleagues 1.14. interact with colleagues from different departments: ripening chamber, cold storage, transport, packhouse etc to effectively carry out the work among the team and understand the nature of their work 1.15. put team over individual goals and multi task or share work where necessary supporting the colleagues 1.16. highlight any errors of colleagues, help to rectify and ensure quality output 1.17. work with cooperation, coordination, communication and collaboration, with shared goals and supporting each others performance 1.18. ask relevant questions to the client and identify their needs 1.19. possess strong knowledge on market and cold chain operation 1.20. brief the client clearly on potential costs and challenges involved in the cold chain industry 1.21. communicate with the client in a polite, professional and friendly manner 1.22. build effective but impersonal relationship with the client 1.23. ensure the appropriate language and tone

Sr. No.	Outcomes to be assessed	Assessment criteria for the outcome
		are used with clients 1.24. listen actively and have a two-way communication 1.25. be sensitive to the gender, cultural and social differences such as modes of greeting, formality, etc. 1.26. understand the client expectations correctly and provide the appropriate products and services 1.27. understand the client dissatisfaction and address or escalate their complaints effectively 1.28. maintain a positive, sensible and cooperative manner all time 1.29. ensure to maintain a proper body language, dress code, gestures and etiquettes towards the client 1.30. avoid interrupting the client while they talk 1.31. ensure to avoid negative questions and statements to the client 1.32. inform the client on any issues or problems before hand and also on the developments involving them 1.33. ensure to respond back to the client immediately for their voice messages, e-mails, apps, etc. 1.34. develop good rapport with the client and promote other products and services 1.35. seek feedback from the client on their understanding to what was discussed 1.36. explain the terms and conditions clearly

SECTION 2

25. EVIDENCE OF LEVEL

Option B – Cold Chain Engineering Specialist – This QP does not have any options or electives

Title/Name of qualification/component: Cold Chain Engineering Specialist (NSQF – 6)			
NSQF Domain	**Outcomes of the Qualification/Component**	**How the job role relates to the NSQF level descriptors**	**NSQF Level**
Process	• Manage energy efficiency in the cold chain • Oversee modified atmosphere requirements for the products • Undertake water and effluent treatment programme • Manage engineering system for the cold chain	The process involves analysing data related to energy usage, identify and implement ways to fix energy inefficiencies, prepare and monitor cold room or container for modified atmosphere storage, prepare and maintain equipment for modified atmosphere conditions and document reports for prevailing modified atmospheric conditions. It includes undertaking water and effluent treatment programme in the plant and monitoring performance for the same. It also includes designing and developing managing engineering system for the cold chain, consisting of control system for the main components of refrigeration system - evaporators, condensers and compressors, identify and revamp existing facilities as required and preparing documentation for the same.	**6**
Professional knowledge	• Measure electrical energy consumed, temperature, relative humidity and air pressure • Analyze proportion of energy used for chiller/refrigeration, warehouse lighting, dock and freezer doors,	The job holder knows and understands factual theoretical knowledge related to electrical consumptions; output input measures, temperature, relative humidity and air pressure, relation between carbon emissions and refrigerant leaks, energy saving techniques and their applications and energy utilization across different equipment. He/she also understands importance of having modified atmosphere to	**6**

	battery charging, freezer floor heating, maintenance activities, storage and reefer vehicles • Temperature and humidity conditions, KB18. under-floor heating system, refrigeration compressors, ethylene, different gases, etc.	control shelf life of various products, different types of processes used to attain modified atmosphere requirements, effective water treatment for efficient and reliable refrigeration system operation, different types of treatment systems, etc. In addition to the technical aspects, he should also know about the broad sector and subsector, demand drivers and key services and their technical requirements as well as the linkage to other sub sectors and requirement for refrigerated transports	
Professional skill	• Decide and prioritize activities relating to choose from multiple energy saving alternatives in the plant functioning • Critical thinking to identify energy inefficiencies in the process • Plan and organize the targets for energy efficiency activity • Spot disruptions and analyze recurring issues	The job holder has to demonstrate practical and cognitive skills by identifying the right solutions for the meeting the energy saving requirement, scheduling priorities, identifying the need for extent of water and effluent treatment and handle team for managing cooling systems during emergencies. He should have the required technical skills for handling cold chain equipment, cater to engineering requirements related to designing and inspection of new commissioning, and manage the team and their performance. He/she should also be able to think critically where required, use acquired knowledge to trace issues in the process, interpret outputs and prioritize tasks based on the implications of the energy inefficiencies.	**6**
Core skill	• Read safety instructions and manual for the related activities • Write the various observations and process parameters in the related activity	The job holder has to communicate clearly to the workers on the precautions to be taken regarding energy inefficiencies in the cold chain, collect data and organize the information for water treatment, listen to the queries, clarify doubts and communicate all the activities required to be done to the subordinates. S/he should also possess	**6**

	• Communicate with supervisors and coordinates	reading and writing skills to read about energy consumption patterns by different processes in cold chain, safety instructions, equipment manual to handle its operation, understand documents regarding modified atmosphere concepts and document observations related to all the processes and engineering systems used	
Responsibility	• Responsible for all electrical and mechanical systems required to run cold chain and the team running it's upkeep and maintenance	. The job holder is responsible for managing energy efficiency in cold chain and accountable for the activities, tasks and learning of the team working to achieve it. Hence, the person is responsible for his own work as well as other's work and learning	**6**

SECTION 3 EVIDENCE OF NEED

26	**Estimated uptake of Qualification?** **Basis**		**What evidence is there that the qualification is is needed?** **What is the this qualification and what is the basis of this ?** **(Applicable for SSCs)**
	Need for the qualification		While collecting data from the companies for the occupational map, we also took feedback from industry players regarding the skill gap that they foresee and select areas where the requirement is immediate and or expected to come in near future for which qualification packs development, was to be prioritized. This was largely based on volume of people required, quantitative and qualitative shortfall which the Industry feels they face. Governing council of LSC gave final approval and endorsement for the same.

			The same are also indicated in various skill studies conducted for the logistic sector – 1. Skill requirement in logistics sector https://drive.google.com/file/d/0B5rqF9xqytDIUlF4WEtyWXJBblE/view
	Industry Relevance		As part of the exercise for development of qualification pack and Q-file, LSC interacted with industry bodies, select companies and collected validation from over 30 different organisations working in the said sub-sector and employing people having the identified job role spanning across the country for the said Qualification pack. The details of the validation collected have been shared as a separate folder along with the Q file. This was largely based on volume of people required, quantitative and qualitative shortfall which the Industry feels they face. Governing Council of LSC gave final approval and endorsement for the same.
	Usage of the qualification		Previously for cold chain no qualification files were developed, this would be the first time formal training would be conducted in cold chain sub-sector through LSC via NSDC and NSDA. Hence, realisation from past data of training conducted is currently not available
	Estimated uptake		Skills Gap Analysis Reports for industry demand and secondary research data, though these do not lead to accurate demand projection. The link to NSDC Human Resource & Skills Requirement in Logistics Sector is https://drive.google.com/file/d/0B5rqF9xqytDIUlF4WEtyWXJBblE/view?usp=sharing And http://www.nccd.gov.in/PDF/CCSG_Final%20Report_Web.pdf • Feedback from industry players • Training duration, and current and potential training capacity envisaged

27	**Recommendation from the concerned Line Ministry of the Government/Regulatory body. To be supported by documentary evidence** Line Ministry Validation was conducted by Ministry of Commerce in the presence of industry representatives on 29th April 2019 at Delhi. Following the incorporation of feedback, in-principle approval has been provided by the Line Ministry.
28	**What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF? Give justification for presenting a duplicate qualification** NSDC list of Approved and Under-Development QPs along with the Qualifications listed on NQR was checked prior to commissioning the work
29	**What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated? Specify the review process here** • Qualification that has been developed would be valid for 3 years from the date of upload in NQR. However, the internal review will happen with NOS sub-committee members who are all representatives from the industry • Periodical interaction with the training partners to gather feedback in implementation. • Employer feedback will be sought post-placement on performance and training standards.

Please attach most relevant and recent documents giving further information about any of the topics above.
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 4
EVIDENCE OF PROGRESSION

30	**What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?** ***Show the career map here to reflect the clear progression*** Horizontal and vertical progression has been highlighted in the Occupational map. The same is attached in the following page for reference

Please attach most relevant and recent documents giving further information about any of the topics above.
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.