

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Name and address of submitting body:

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List of documents submitted in support of the Qualification File

1. Model Curriculum
2. Occupation Map

SUMMARY

1	Qualification Title:	Plant Head – Operations (Compressed Biogas/Waste to Energy)
2	Qualification Code, if any: -	SGJ/Q0607
3	NCO code and occupation: -	NCO-2015/1321.1000 Operations and Maintenance
4	Nature and purpose of the qualification (Please specify whether qualification is short term or long term):	<p>Nature: This Qualification contains National Occupation Standards for evaluating market analysis and operational plans, ensuring all plant operations, managing human resource, financial and administrative aspects of a compressed biogas plant.</p> <p>Purpose of the qualification:</p> <p>Trained Plant Head is required to oversee the successful operation of a compressed biogas plant while ensuring smooth conduct of all supporting administrative, HR and financial aspects.</p>
5	Body/bodies which will award the qualification:	Skill Council for Green Jobs
3	Body which will accredit providers to offer courses leading to the qualification:	Skill Council for Green Jobs
7	Whether accreditation/affiliation norms are already in place or not, if applicable (if yes, attach a copy)	Yes
8	Occupation(s) to which the qualification gives access:	Operation and Maintenance
9	Job description of the occupation:	The individual at work is responsible for proper operations of the plant, including monitoring the daily operations and production processes of the plant, managing the human resource, finance and administrative tasks at the CBG plant.
10	Licensing requirements:	NA

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11	Statutory and Regulatory requirement of the relevant sector (documentary evidence to be provided):	-
12	Level of the qualification in the NSQF:	Level 7
13	Anticipated volume of training/learning required to complete the qualification:	600 hours including 400 hours of compulsory modules and 200 hours of mandatory OJT
14	Indicative list of training tools required to deliver this qualification:	Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures, Sample market analysis report, Sample industry statistics, Sample operational plan, standard CBG Plant SOP, etc., Sample market analysis report, Sample industry statistics, Sample operational plan, standard CBG Plant SOP, etc., Sample CBG supply chain, Feedstock, Slurry, Sample production reports, Sample datasheets, etc., Sample work schedule, Sample resource allocation plan, etc. POSH (Prevention of Sexual Harassment) policy guidelines, Sample budget, Sample sales report, Sample activity report, Sample financial statement, etc., Sample production schedule, Sample government schemes etc., Handouts of the applicable laws, rules and regulations, and guidelines, Personal Protection Equipment: Safety glasses, Head protection, Rubber gloves, Safety footwear, Warning signs and tapes, Fire extinguisher, First aid kit, Relevant Standard Operating Procedures, and Sample reports.
15	Entry requirements and/or recommendations and minimum age:	Entry requirements: B.Tech./B.E (Agriculture/ Environment /Civil/Mechanical/Electrical Engineering or

		<p>Equivalent) with 8 Years of experience in the relevant field</p> <p>OR</p> <p>MTech /Post Graduate (Agriculture/Environment science) or in any relevant discipline with 6 years of experience in the relevant field</p> <p>OR</p> <p>NSQF level 6 certified in relevant job role (e.g. Manager- Waste Management) with 2 years of relevant experience</p> <p>Or</p> <p>Supervisor – Operations and Maintenance Compressed Biogas/Waste to Energy - Level 5 with 5 years of relevant work experience</p> <p>Minimum age: 28 years</p>
16	Progression from the qualification:	<p>Vertical Progression: GM Operations</p> <p>Horizontal Progression: Nil</p>
17	Arrangements for the Recognition of Prior learning (RPL):	<p>SCGJ recognizes that there may be candidates who have prior learning experience in the waste management sector and are desirous of being certified.</p> <ul style="list-style-type: none"> •Propose to carry out RPL for candidates working with municipalities or with other waste management organizations, across the sector •Identify the candidates through training need analysis of the waste management sector •Develop the RPL Training Delivery Plan and bridge course for bridging the skill gap •Training and certification of the candidates
18	International comparability where known (research evidence to be provided):	NA

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Approved in 15th NSQC, dated 27/01/22

19	Date of planned review of the qualification: 26 th January 2025		
20	Formal structure of the qualification		
	Mandatory/Optional components		
	Title of component and identification code/NOSs/Learning outcomes	Estimated size (learning hours)	Level
(I)	Bridge Module: Introduction to Green Job and Plant Head - Operations CBG/WTE	08	
(II)	SGJ/N0621: Assess the Market Research and Enhance the Business	80	7
(III)	SGJ/N0615: Develop and Implement Organizational Strategies and Policies	40	7
(IV)	SGJ/N0615: Monitor Operation and Maintenance of the Production Unit	40	7
(V)	SGJ/N0615: Ensure Resource Optimization, Waste Management and Appropriate Documentation	40	7
(VI)	SGJ/N0616: Manage Human Resources in the CBG Plant	20	7
(VII)	SGJ/N0616: Promote Gender & PwD Sensitivity at the Work Place	20	7
(VIII)	SGJ/N0616: Perform Cost Optimization Activities	40	7
(IX)	SGJ/N0616: Manage Administrative Activities	28	7

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Approved in 15th NSQC, dated 27/01/22

(X)	SGJ/N6503: Ensure compliance with applicable statutory laws, policies and procedures	28	6
(XI)	SGJ/N6504: Ensure health and safety at workplace	56	6
	Mandatory OJT	200	
	Total	600 hours including 400 hours + 200 hours of Mandatory OJT	

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SECTION 1
ASSESSMENT

21	<p>Body/Bodies which will carry out assessment: Skill Council for Green Jobs through its affiliated and accredited Assessment Agency.</p>
22	<p>How will RPL assessment be managed and who will carry it out? The RPL assessment will be carried out through pre-assessment, identifying the skills gaps, provide bridge training to cover the competency gap, where required, and then conduct final assessment of the candidates.</p> <p>Final assessment will be carried out by affiliated Assessment Agency of SCGJ, as per RPL Policy and Guidelines</p>
23	<p>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.</p> <p>1. Assessment System Overview:</p> <ul style="list-style-type: none"> • Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email • Assessment agencies send the assessment confirmation to VTP/TC looping SSC • Assessment agency deploys the ToA certified Assessor for executing the assessment • SSC monitors the assessment process & records • If the batch size is more than 30, then there should be 2 Assessors. <p>2. Testing Environment: Assessor must:</p> <ul style="list-style-type: none"> • Confirm that the centre is available at the same address as mentioned on SDMS or SIP <ul style="list-style-type: none"> • Check the duration of the training. • Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.

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

3. Assessment Quality Assurance levels / Framework:

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

4. Types of evidence or evidence-gathering protocol:

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

5. Method of verification or validation:

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

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

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	<ul style="list-style-type: none">• Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage and are stored in the Hard Drives
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24. Assessment evidences

CRITERIA FOR ASSESSMENT OF TRAINEES

Title of Component: Plant Head - Operations Compressed Biogas/ Waste to Energy

Qualification Pack: SGJ/Q0607-v1.0

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

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

SECTION 2

25. EVIDENCE OF LEVEL

OPTION A

Title/Name of qualification/component: Plant Head – Operations (Compressed Biogas/Waste to Energy) Level:7			
NSQF Domain	Key requirements of the job role	How the job role relates to the NSQF level descriptors	NSQF Level
Process	<p>Requires a command of wide-ranging specialised theoretical and practical skills, involving variable routine and nonroutine contexts.</p> <ul style="list-style-type: none"> • Evaluate market analysis and operational plans. • Manage plant operations. • Manage human resource, financial and administrative aspects. • Ensure compliance with applicable statutory laws, policies and procedures. • Ensure health and safety at workplace. 	<ul style="list-style-type: none"> • A Plant Head - Operations CBG/WTE is responsible for evaluating market analysis and operational plans, managing plant operations and human resource, financial and administrative aspects, etc. The person requires full command of wide-ranging specialised theoretical and practical skills for managing the plant operations. • Hence Level 7 	7
Professional knowledge	<p>Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or study.</p>	<ul style="list-style-type: none"> • A Plant Head - Operations CBG/WTE would require wide-ranging factual and theoretical knowledge in broad contexts within a field such culture and setup, policies and regulations, data collections 	7

	<ul style="list-style-type: none"> • Organizational culture and setup, policies and regulations • Methods and procedures to collect data • Methods to evaluate market study in order to identify customer requirements from current and future products • Trend forecasting techniques • Competitor analysis tools • Statistical tools to analyze the data • Methods to analyze the growth projections • Resource requirements for efficient functioning of the plant as well as business • Methods to evaluate operational plans • Factual and theoretical knowledge of the sector • Laws and policies regarding the CBG.WTE sector • Project management techniques • Requirements of CBG plant construction • Strategic Planning procedures • Procedure to develop and implement operational, maintenance, emergency and quality plans and policies 	<p>methods and procedures, methods to evaluate market study, etc.</p> <ul style="list-style-type: none"> • Hence Level 7 	
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	<ul style="list-style-type: none">• Environmental Management and sustainability Methods• Process of CBG production, namely anaerobic digestion, fermentation, purification, storage, upgrading and bottling systems etc.• Optimization procedures for biological processes• Types of tools and equipment required for CBG production• Procedure of resource mobilization• Supply chain management process• Methods of inspection of various departments of a CBG plant• Inventory Management procedures• Procedures to be followed in emergency situations• Site auditing process• Types of reports, records and log sheets to be maintained in a CBG plant• Human resource management process• Procedure to prepare work schedules• Conflict management procedures• Resource Management process• Team Management procedures		
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	<ul style="list-style-type: none">• Organization's policies on gender and PwD sensitive service practices at workplace• POSH (Prevention of Sexual Harassment) policy guidelines• Budget preparation and management process• Procedure to analyze various data like financial statements, sales reports, performance data etc.• Cost control procedures and techniques• Customer demand forecasting techniques• Quality control and assurance methods• Local corporations / authorities that have a bearing on the particular business process.• Policies and procedures that impact the business process.• Legal formalities applicable for the particular business.• Benefits to the company due to practice of these procedures.• The importance of having an ethical and value based approach to governance.		
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	<ul style="list-style-type: none">• Knowledge of processes involved in the business.• Country specific regulations for the waste management sector and its importance.• Reporting procedure in case of deviations.• Organizational health and safety related practices applicable at the workplace• SOP to demonstrate safe and accepted practices for personal protection to the team, ensure compliance to emergency, rescue and first-aid procedures, organize and attend fire drills and workplace safety workshops, clean and disinfect of all material, tools and supplies• Safety signs, labels and charts are displayed at appropriate places• PPE and how to use them• Organizational procedures for safe handling of equipment and machine operations• Proper disposal system for waste and by-products• Basic first aid procedures• Methods to minimize accidental risks		
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	<ul style="list-style-type: none"> • Emergency procedures to be followed in case of a mishappening 		
Professional skill	<p>Wide range of cognitive and practical skills required to generate solutions to specific problems in a field of work of study.</p> <ul style="list-style-type: none"> • Prepare and write detailed reports of the studies performed • Read and understand organizational and regulatory guidelines, manuals, memos, and other company documents • Communicate with industries and managers to understand and analyze various strategies, demands, and limitations in the market • Critically evaluate the information obtained from other departments and stakeholders • Assess and estimate resource requirement of the plant • Take decisions in a time bound manner • Improve and modify own work practices • Analyze organizational reports and record • Read statutory documents relevant to health and safety 	<ul style="list-style-type: none"> • Plant Head - Operations CBG/WTE will apply professional skills to manage plant operations and resolve work related day-to-day problems, etc. as per the organizational standards. • Hence Level 7 	7

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	<ul style="list-style-type: none"> • communicate effectively with team regarding the significance of health and safety at the workplace • Fill in relevant forms, formats and checklist accurately • Analyze the impact of not adhering to the health and safety procedures • Analyze, review and decide on approval / rejection based on quality standards of the organization 		
Core skill	<p>Good logical and mathematical skill understanding of social political and natural environment and organising information, communication and presentation skill.</p> <ul style="list-style-type: none"> • Fill up relevant documents • take decision with systematic course of actions and/or response • Work constructively and collaboratively with others • Coordinate with multidisciplinary stakeholders • Follow code of conduct • Recognize problems and search for solutions 	<ul style="list-style-type: none"> • Plant Head Operations CBG/WTE will applies understanding of social, and communication along with organization skills to deal with plant staff. • Hence Level 7 	7

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	<ul style="list-style-type: none"> • Communicate effectively suppliers/ vendors, government officials and stakeholders • 		
Responsibility	<p>Full responsibility for output of group and development.</p> <ul style="list-style-type: none"> • Evaluate the market analysis • Analyze the operational plans • Develop and implement organizational strategies and policies • Monitor operations & maintenance of the production unit • Ensure resource optimization and waste management • Maintain and analyze reports and records • Manage the human resource • Ensure gender and PwD sensitivity • Ensure cost optimization • Manage administrative activities • Liaise with government authorities/local authorities, corporations etc. for smooth conduct of business operations. • Monitor safe work practices at the workplace • Ensure compliance to emergency, 	<ul style="list-style-type: none"> • Plant Head Operations CBG/WTE is responsible for managing operations like evaluating the market analysis, analyze the operational plans, etc. The person has fully responsibility for output of group work and output. • Hence Level 7 	7

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	rescue and first-aid procedures <ul style="list-style-type: none">• Ensure good housekeeping practices and infection control guidelines		
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SECTION 3
EVIDENCE OF NEED

26	<p>What evidence is there that the qualification is needed? What is the estimated uptake of this qualification and what is the basis of this estimate?</p> <table border="1"> <thead> <tr> <th data-bbox="368 488 603 618">Basis</th> <th data-bbox="603 488 1374 618">In case of other Awarding Bodies (Institutes under Central Ministries and states departments)</th> </tr> </thead> <tbody> <tr> <td data-bbox="368 618 603 748">Need of the qualification</td> <td data-bbox="603 618 1374 748">As per the Labour Market Clarity Report there is a huge demand for skilled professionals in Operation & Maintenance sector.</td> </tr> <tr> <td data-bbox="368 748 603 837">Industry Relevance</td> <td data-bbox="603 748 1374 837">The industry validation is submitted along with its summary sheet for reference.</td> </tr> <tr> <td data-bbox="368 837 603 1205">Usage of the qualification</td> <td data-bbox="603 837 1374 1205"> <ul style="list-style-type: none"> • This Qualification Pack will be used across industry which is organised. • It would be used by the training institute for new trainings/For employers to conduct RPL and for annual Appraisal • The SSC would submit details of the employment generated (wherever applicable) and realised. </td> </tr> <tr> <td data-bbox="368 1205 603 1290">Estimated uptake</td> <td data-bbox="603 1205 1374 1290">Initially 4 - 5 batches are expected under new training</td> </tr> </tbody> </table>	Basis	In case of other Awarding Bodies (Institutes under Central Ministries and states departments)	Need of the qualification	As per the Labour Market Clarity Report there is a huge demand for skilled professionals in Operation & Maintenance sector.	Industry Relevance	The industry validation is submitted along with its summary sheet for reference.	Usage of the qualification	<ul style="list-style-type: none"> • This Qualification Pack will be used across industry which is organised. • It would be used by the training institute for new trainings/For employers to conduct RPL and for annual Appraisal • The SSC would submit details of the employment generated (wherever applicable) and realised. 	Estimated uptake	Initially 4 - 5 batches are expected under new training
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27	<p>Recommendation from the concerned Line Ministry of the Government/Regulatory Body. To be supported by documentary evidences</p> <p>Request for recommendation sent to Ministry of New and Renewable Energy and they concurred in meeting</p>										
28	<p>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</p> <p>SCGJ has explored the growth trajectory within each occupation after studying organisational charts of various industry players across small, medium and large-scale organizations. Various lateral career opportunities for the concerned qualification have also been explored. With this it was ensured that there is a clear role in terms of performance criteria, academic qualification, experience and skill requirement from</p>										

	<p>lower NSQF Level to higher levels in the hierarchy. Please refer to attached career path/Occupational map which clearly defines the career path in the concerned sector.</p> <p>National Qualifications Register was searched to assess if there was any similar qualification and no overlap was found with the existing qualifications.</p>
29	<p>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</p> <ul style="list-style-type: none"> • Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation. • Monitoring of results of assessments and training delivery • Employer feedback will be sought post-placement • A formal review is scheduled in a 3 years' time

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?

Occupational Map

The Occupational Map illustrates three career paths in the waste management sector, structured by NSQF/Occupation levels (Level 2 to Level 8):

- Waste Management - Operation and Maintenance:**
 - Level 2: Helper- WTE
 - Level 4: Technician- O&M CBG/WTE
 - Level 5: Supervisor-O&M CBG/WTE
 - Level 7: Plant Head - Operations CBG/WTE
 - Level 8: GM-Operation
- Waste Management - Supply Chain Management:**
 - Level 3: Baler
 - Level 4: Agri-Residue Aggregator
 - Level 5: Supervisor- Biomass Depot
 - Level 6: Feedstock Manager(Procurement and Composition)
 - Level 7: Plant Head - Operations CBG/WTE
 - Level 8: GM-Operation
- Waste Management - Management and Support:**
 - Level 2: Helper
 - Level 3: Recyclable Waste Collector & Segregator
 - Level 4: Supervisor-Waste Collection
 - Level 5: Manager-Waste Management

Progression is indicated by upward arrows between levels. Cross-path connections are shown with blue arrows: from 'Baler' to 'Supervisor- Biomass Depot', from 'Agri-Residue Aggregator' to 'Supervisor- Biomass Depot', from 'Supervisor- Biomass Depot' to 'Plant Head - Operations CBG/WTE', and from 'Manager-Waste Management' to 'Plant Head - Operations CBG/WTE'.