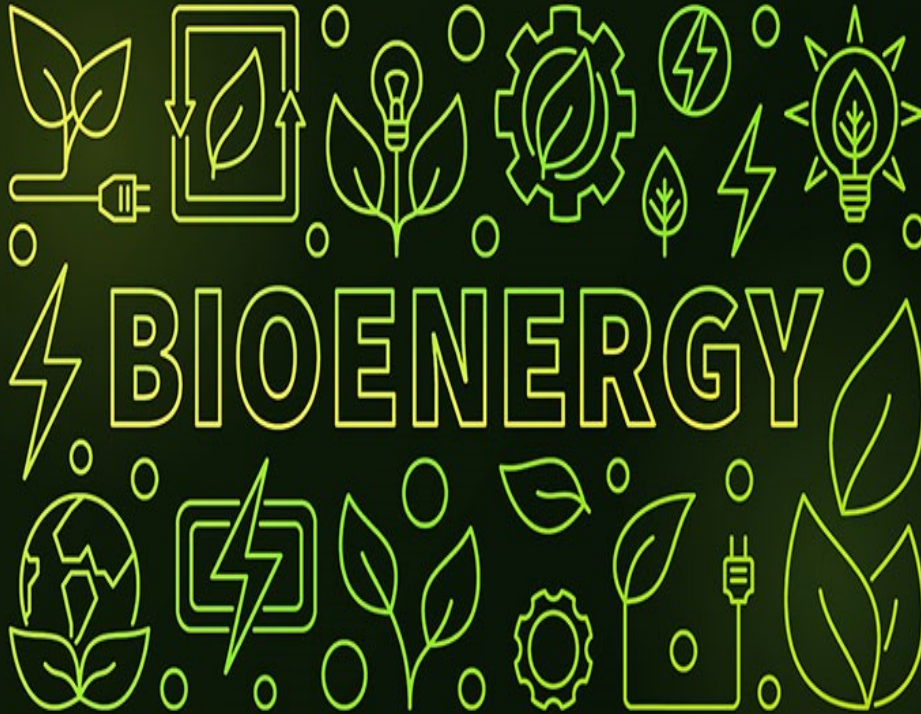


Qualification Pack



Bio-Energy Micro Entrepreneur

Electives: Biomass Pellet Manufacturing / Ensure installation and operation of small biogas plant

QP Code: SGJ/Q4102

Version: 1.0

NSQF Level: 4

Skill Council for Green Jobs || 3rd Floor, CBIP Building, Malcha Marg, Chanakyapuri
New Delhi - 110021 || email:prem@sscgj.in



Qualification Pack

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Qualification Pack

SGJ/Q4102: Bio-Energy Micro Entrepreneur

Brief Job Description

Bio-Energy Micro Entrepreneur (Biomass Pellet/Small Biogas) is responsible for setting up a production unit for manufacturing biomass pellets from agriculture waste or setting up small biogas unit at site. He/She would be responsible for developing a business plan, hiring the human resources, acquiring financial and material resources, providing leadership, and their vision drives the company's strategy.

Personal Attributes

The individual is required to have good interpersonal and problem solving skills. The individual must be self-driven and organized with their work and act with integrity while performing multiple task for the customers with quality deliverables.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [SGJ/N4102: Introduce to Entrepreneurship and describes the basics of biomass energy](#)
2. [SGJ/N4103: Manage financial budget and developing business plans](#)
3. [SGJ/N4104: Utilize government schemes and perform financial management of the business](#)
4. [SGJ/N4050: Maintain Personal Health & Safety in Bioenergy manufacturing facility](#)
5. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Electives(mandatory to select at least one):

Elective 1: Biomass Pellet Manufacturing

Ensure Manufacturing of Biomass pellet

1. [SGJ/N4105: Ensure Manufacturing of Biomass pellet](#)

Elective 2: Ensure installation and operation of small biogas plant

Ensure installation and operation of small biogas plant

1. [SGJ/N4106: Ensure installation and operation of small biogas plant](#)

Qualification Pack

Qualification Pack (QP) Parameters

Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
Country	India
NSQF Level	4
Credits	18
Aligned to NCO/ISCO/ISIC Code	NCO2015 2433.0601
Minimum Educational Qualification & Experience	<p>10th grade pass and pursuing continuous schooling OR 12th grade Pass ((all streams)) with NA of experience OR Completed 2nd year of the 3-year diploma after 10 with NA of experience OR 10th grade pass (with two years of any combination of NTC/NAC/CITS or equivalent.) with NA of experience OR 8th Class (plus 2-year NTC plus 1-Year NAC plus 1-Year CITS) with NA of experience OR 10th grade pass with 2 Years of experience relevant experience OR Previous relevant Qualification of NSQF Level (Level 3) with 3 Years of experience relevant experience</p>
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NA
Minimum Job Entry Age	16 Years
Last Reviewed On	NA
Next Review Date	31/08/2026
NSQC Approval Date	31/08/2023



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Version	1.0
Reference code on NQR	QG-04-ES-00912-2023-V1-SCGJ
NQR Version	1.0

Remarks:

Notional hours 450 Hours i.e., 15 Credits (70 hours Theory+110 hours Practical+120 hours of OJT+60 hours Employability module+ 90 hours any Elective Total: 540 Hours (70 hours Theory+110 hours Practical+120 hours of On-the-Job Training (OJT) +60 hours Employability module+ 90 hours Elective 1+ 90 hours Elective 2



Qualification Pack

SGJ/N4102: Introduce to Entrepreneurship and describes the basics of biomass energy

Description

This unit is about introduce to Entrepreneurship and describes the basics of biomass energy

Scope

The scope covers the following :

- Introduce to Entrepreneurship and describes the basics of biomass energy

Elements and Performance Criteria

Introduction of Entrepreneurship and describes the basics of biomass energy sector

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

- PC1.** discuss bio-fuel as a source of energy
- PC2.** describe solid, liquid and gaseous bio-fuel
- PC3.** discuss the concept of entrepreneurship development
- PC4.** describe the steps of the entrepreneurial process (from idea generation to harvesting of the investment)
- PC5.** discuss gain knowledge on management challenges (financial, human resources, product/service development, operations) in managing an emerging business or MSMEs
- PC6.** discuss the difference between a business model and a strategy
- PC7.** discuss the importance of agro residue waste as a resource and its management for end use applications
- PC8.** discuss biomass energy conversion technologies and role of biomass pellets and biogas as green fuel
- PC9.** discuss biomass procurement system and its challenges
- PC10.** show how to demonstrate the field survey to meet with farmers, aggregators, and farmer producer organization (FPO) to learn about the various types of agricultural residues and their seasonal availability.
- PC11.** demonstrate biomass resources potential, price, challenges & opportunities, procurement supply-chain and charting of arrangement of logistics and transport facility till plant site
- PC12.** show the cropping pattern, harvesting pattern, storage, and sale
- PC13.**
 - demonstrate the required quantity, consistency, quality, and cost of
 - each option and their availability at selected locations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's customer support policy
- KU2.** Company's installation policy



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- KU3.** Company's documentation policy
- KU4.** Obtain authorization from specified field safety officer and supervisor
- KU5.** Document information using appropriate corporate forms
- KU6.** bio-fuel as a source of energy
- KU7.** concept of entrepreneurship development
- KU8.** steps of the entrepreneurial process (from idea generation to harvesting of the investment)
- KU9.** knowledge on management challenges (financial, human resources, product/service development, operations) in managing an emerging business or MSMEs
- KU10.** difference between a business model and a strategy

Generic Skills (GS)

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

- GS1.** Prepare and maintain documentation.
- GS2.**
 - Read and understand manuals, health and safety instructions, memos,
 - other company documents
- GS3.**
 - Express statements or information clearly so that others can hear and
 - understand
- GS4.** take decisions with systematic course of actions and/or response
- GS5.** work constructively and collaboratively with others
- GS6.** delegate tasks to improve efficiencies
- GS7.** identify cause and effect of greening of jobs
- GS8.** evaluate information obtained from other departments and stakeholders
- GS9.** Participate in and understand the main points of simple discussions
- GS10.** Respond appropriately to any queries
- GS11.** Plan and organize work schedule to meet deadlines.

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction of Entrepreneurship and describes the basics of biomass energy sector</i>	23	27	-	-
PC1. discuss bio-fuel as a source of energy	1	1	-	-
PC2. describe solid, liquid and gaseous bio-fuel	1	1	-	-
PC3. discuss the concept of entrepreneurship development	1	1	-	-
PC4. describe the steps of the entrepreneurial process (from idea generation to harvesting of the investment)	2	2	-	-
PC5. discuss gain knowledge on management challenges (financial, human resources, product/service development, operations) in managing an emerging business or MSMEs	2	2	-	-
PC6. discuss the difference between a business model and a strategy	2	2	-	-
PC7. discuss the importance of agro residue waste as a resource and its management for end use applications	2	2	-	-
PC8. discuss biomass energy conversion technologies and role of biomass pellets and biogas as green fuel	2	3	-	-
PC9. discuss biomass procurement system and its challenges	2	2	-	-
PC10. show how to demonstrate the field survey to meet with farmers, aggregators, and farmer producer organization (FPO) to learn about the various types of agricultural residues and their seasonal availability.	2	3	-	-
PC11. demonstrate biomass resources potential, price, challenges & opportunities, procurement supply-chain and charting of arrangement of logistics and transport facility till plant site	2	3	-	-
PC12. show the cropping pattern, harvesting pattern, storage, and sale	2	2	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. <ul style="list-style-type: none"> demonstrate the required quantity, consistency, quality, and cost of each option and their availability at selected locations 	2	3	-	-
NOS Total	23	27	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4102
NOS Name	Introduce to Entrepreneurship and describes the basics of biomass energy
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

SGJ/N4103: Manage financial budget and developing business plans

Description

This unit is about manage financial budget and developing business plans

Scope

The scope covers the following :

- understanding of financial calculations and different strategies to develop a viable business model
- characteristics of innovation to developing business plans.
- develop a sustainable business model and their financial requirements for new ventures

Elements and Performance Criteria

Manage financial budget and developing business plans

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

- PC1.** explain the basic understanding of the financial statement's concepts.
- PC2.** discuss the application and calculation of the break-even point
- PC3.** discuss the different stages of financing
- PC4.** discuss the characteristics of the two basic types of financing: debt and equity
- PC5.** describe the appropriateness of types of financing at various stages of an organization's life
- PC6.** describe the different sources of financing
- PC7.** discuss about the important issues in managing a firm's cash flows
- PC8.** discuss business development tasks and activities
- PC9.** describe how the sustainable growth model is derived and apply it to determine financing requirements for a new venture
- PC10.** explain the characteristics of a good innovation to develop a business plan and demonstrate budgetary cost for setting up a Pellet plant and small biogas production unit.
- PC11.** demonstrate a biomass pellet plant and explain about all operations such as unloading, production, loading and storage
- PC12.** demonstrate various tools, equipment and machinery used in biomass pellet plant and biogas units
- PC13.** show how to identify suitable and proven technology for the manufacturing of biomass pellet and biogas
- PC14.** demonstrate value-chain covering demand & supply of biomass pellet and biogas considering a suitable catchment area to set up unit
- PC15.** show storage options of Biomass pellets and its shelf life
- PC16.** show storage option for biogas

Manage sales, supply, and marketing of product

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

- PC17.** discuss the use of sales promotion tools to increase demand of biomass pellets or Biogas

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- PC18.** describe the 4Ps of product marketing (Product, Price, Promotion, Place) and 4Ps of service marketing (People, Processes, Physical Evidence, Productivity)
- PC19.** describe how to make an estimate of sale of biogas or biomass pellet to the industry or individual
- PC20.** describe sales process and sales steps
- PC21.** discuss about customer satisfaction and service tracking techniques
- PC22.** discuss global marketing and the potential for MSMEs as global enterprises
- PC23.** describe criteria to assess marketing performance
- PC24.** discuss how to use primary and secondary research to profile your target customer like thermal power stations, Industries and households
- PC25.** show how the cost of production conventional production system over organic production system of farming
- PC26.** demonstrate how the profit for organic farming by selling the product directly to the consumers
- PC27.** demonstrate the scope & way of ecommerce in selling the produce to the consumers
- PC28.** show how the cost of production which will get reduced over conventional production system
- PC29.** demonstrate the procedure for selling the organic products to local market/organic hut
- PC30.** demonstrate the scope & way of e-commerce in selling the produce to the consumers

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's documentation policy
- KU2.** Obtain authorization from specified field safety officer and supervisor
- KU3.** Document information using appropriate corporate forms
- KU4.** Company's customer support policy
- KU5.** use of sales promotion tools to increase demand of biomass pellets or Biogas
- KU6.** sales process and sales steps
- KU7.** customer satisfaction and service tracking techniques
- KU8.** global marketing and the potential for MSMEs as global enterprises
- KU9.** criteria to assess marketing performance

Generic Skills (GS)

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

- GS1.** Prepare and maintain documentation.
- GS2.**
- Read and understand manuals, health and safety instructions, memos,
 - other company documents
- GS3.**
- Express statements or information clearly so that others can hear and
 - understand
- GS4.** Participate in and understand the main points of simple discussions



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- GS5.** Respond appropriately to any queries
- GS6.** Communicate with employees
- GS7.** Define organization rule- based decision making process
- GS8.** Take decision with systematic course of actions and/or response
- GS9.** Plan and organize work schedule to meet deadlines.
- GS10.** Work constructively and collaboratively with others
- GS11.** Prepare organization code of conduct
- GS12.** Recognize problems and search for solutions.
- GS13.** Choose best methods to complete assigned tasks.
- GS14.**
 - Critically evaluate information obtained from customers and workers to
 - perform day to day activities.
- GS15.** Ask questions for better understanding.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manage financial budget and developing business plans</i>	28	19	-	-
PC1. explain the basic understanding of the financial statement's concepts.	2	-	-	-
PC2. discuss the application and calculation of the break-even point	2	-	-	-
PC3. discuss the different stages of financing	2	-	-	-
PC4. discuss the characteristics of the two basic types of financing: debt and equity	2	-	-	-
PC5. describe the appropriateness of types of financing at various stages of an organization's life	2	-	-	-
PC6. describe the different sources of financing	2	-	-	-
PC7. discuss about the important issues in managing a firm's cash flows	2	-	-	-
PC8. discuss business development tasks and activities	2	-	-	-
PC9. describe how the sustainable growth model is derived and apply it to determine financing requirements for a new venture	2	-	-	-
PC10. explain the characteristics of a good innovation to develop a business plan and demonstrate budgetary cost for setting up a Pellet plant and small biogas production unit.	2	2	-	-
PC11. demonstrate a biomass pellet plant and explain about all operations such as unloading, production, loading and storage	1	2	-	-
PC12. demonstrate various tools, equipment and machinery used in biomass pellet plant and biogas units	1	3	-	-
PC13. show how to identify suitable and proven technology for the manufacturing of biomass pellet and biogas	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. demonstrate value-chain covering demand & supply of biomass pellet and biogas considering a suitable catchment area to set up unit	1	3	-	-
PC15. show storage options of Biomass pellets and its shelf life	2	3	-	-
PC16. show storage option for biogas	2	3	-	-
<i>Manage sales, supply, and marketing of product</i>	32	21	-	-
PC17. discuss the use of sales promotion tools to increase demand of biomass pellets or Biogas	3	-	-	-
PC18. describe the 4Ps of product marketing (Product, Price, Promotion, Place) and 4Ps of service marketing (People, Processes, Physical Evidence, Productivity)	3	-	-	-
PC19. describe how to make an estimate of sale of biogas or biomass pellet to the industry or individual	3	-	-	-
PC20. describe sales process and sales steps	4	-	-	-
PC21. discuss about customer satisfaction and service tracking techniques	4	-	-	-
PC22. discuss global marketing and the potential for MSMEs as global enterprises	4	-	-	-
PC23. describe criteria to assess marketing performance	4	-	-	-
PC24. discuss how to use primary and secondary research to profile your target customer like thermal power stations, Industries and households	4	-	-	-
PC25. show how the cost of production conventional production system over organic production system of farming	3	4	-	-
PC26. demonstrate how the profit for organic farming by selling the product directly to the consumers	-	4	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. demonstrate the scope & way of e-commerce in selling the produce to the consumers	-	4	-	-
PC28. show how the cost of production which will get reduced over conventional production system	-	3	-	-
PC29. demonstrate the procedure for selling the organic products to local market/organic hut	-	3	-	-
PC30. demonstrate the scope & way of e-commerce in selling the produce to the consumers	-	3	-	-
NOS Total	60	40	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4103
NOS Name	Manage financial budget and developing business plans
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

SGJ/N4104: Utilize government schemes and perform financial management of the business

Description

This unit is about utilize government schemes and perform financial management of the business

Scope

The scope covers the following :

- Understand the statutory compliances and procedures associated with the operation and management of Biomass pellet manufacturing or biogas unit

Elements and Performance Criteria

Assess various compliance with applicable statutory laws, policies and procedures

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

- PC1.** discuss how local authorities having a bearing on business process
- PC2.** discuss waste management rules associated with the unit
- PC3.** discuss hazardous waste management and trans boundary movement rule 2016
- PC4.** explain how to co-ordinate with government authorities/local authorities, corporations etc. to comply with their regulations and demonstrate methods of completing business registration, associated legal formalities and compliances
- PC5.** describe procedures to obtain clearance of pollution control board
- PC6.** discuss applicable statutory laws, policies, standard, permissions and compliances
- PC7.** discuss different schemes supporting Bio-energy in the country and illustrate key highlights of schemes supporting bioenergy in the country
- PC8.** show how to maintain records

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's documentation policy
- KU2.** Document information using appropriate corporate forms
- KU3.** Company's customer support policy
- KU4.** Obtain authorization from specified field safety officer and supervisor
- KU5.** local authorities having a bearing on business process
- KU6.** waste management rules associated with the unit
- KU7.** hazardous waste management and trans boundary movement rule 2016
- KU8.** how to co-ordinate with government authorities/local authorities, corporations etc. to comply with their regulations
- KU9.** procedures to obtain clearance of pollution control board



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- KU10.** applicable statutory laws, policies, standard, permissions and compliances
- KU11.** different schemes supporting Bio-energy in the country
- KU12.** methods of completing business registration, associated legal formalities and compliances
- KU13.** ability to maintain records
- KU14.** key highlights of schemes supporting bioenergy in the country

Generic Skills (GS)

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

- GS1.** Prepare and maintain documentation.
- GS2.**
 - Read and understand manuals, health and safety instructions, memos,
 - other company documents
- GS3.**
 - Express statements or information clearly so that others can hear and
 - understand
- GS4.** Participate in and understand the main points of simple discussions
- GS5.** Respond appropriately to any queries
- GS6.** Communicate with employees
- GS7.** Define organization rule- based decision making process
- GS8.** Take decision with systematic course of actions and/or response
- GS9.** Plan and organize work schedule to meet deadlines.
- GS10.** Work constructively and collaboratively with others.
- GS11.** Prepare organization code of conduct.
- GS12.**
 - Manage relationships with customers with intent on satisfying its
 - requirements for service delivery.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assess various compliance with applicable statutory laws, policies and procedures</i>	35	15	-	-
PC1. discuss how local authorities having a bearing on business process	5	-	-	-
PC2. discuss waste management rules associated with the unit	5	-	-	-
PC3. discuss hazardous waste management and trans boundary movement rule 2016	5	-	-	-
PC4. explain how to co-ordinate with government authorities/local authorities, corporations etc. to comply with their regulations and demonstrate methods of completing business registration, associated legal formalities and compliances	5	5	-	-
PC5. describe procedures to obtain clearance of pollution control board	5	-	-	-
PC6. discuss applicable statutory laws, policies, standard, permissions and compliances	5	-	-	-
PC7. discuss different schemes supporting Bio-energy in the country and illustrate key highlights of schemes supporting bioenergy in the country	5	5	-	-
PC8. show how to maintain records	-	5	-	-
NOS Total	35	15	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4104
NOS Name	Utilize government schemes and perform financial management of the business
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

SGJ/N4050: Maintain Personal Health & Safety in Bioenergy manufacturing facility

Description

This unit is about maintaining basic health and workplace safety in Bioenergy manufacturing facility

Scope

The scope covers the following :

- Maintain standard health and workplace safety
- Organize safety awareness sessions and participate in safety drills
- Use and maintain protective safety gears

Elements and Performance Criteria

Maintain Personal Health & Safety in bioenergy production manufacturing facility

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

- PC1.** identify the requirements for safe work area.
- PC2.** explain how to Administer first aid and demonstrate how to Administer first aid.
- PC3.** identify the personal protective equipment used for the specific purpose
- PC4.** identify the heavy electrical and mechanical equipment's associated with manufacturing and show how to Identify the heavy electrical and mechanical equipment's associated with bioenergy production manufacturing
- PC5.** identify work safety procedures and instructions to operate bioenergy production machines and demonstrate how to Identify and perform work safety procedures and instructions to operate bioenergy production machines
- PC6.** explain occupational health & safety standards and regulations for bioenergy production manufacturing process
- PC7.** demonstrate good housekeeping practices and infection control guidelines
- PC8.** demonstrate how to Dispose- off any waste materials in accordance with safe working practices and procedures

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** company occupational safety and health policy
- KU2.** company's medical policy
- KU3.** personal protective equipments (PPEs) required for safe operation
- KU4.** occupational health and safety (OHS) standards for workplace and machine safety
- KU5.** risk identification and mitigation procedures
- KU6.** workplace safety procedures including emergency evacuation, first aid procedures among others.



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KU7. understand work safety procedures and instructions to operate bioenergy production machines

Generic Skills (GS)

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

- GS1.** how to be able to read safety instructions and warning signage
- GS2.** fill up documentation applicable to ones role
- GS3.** read instruction and safety manuals.
- GS4.** express statements or information clearly so that others can hear and understand
- GS5.** participate in and understand the main points of simple discussions
- GS6.** effectively communicate the danger.
- GS7.** make decisions pertaining to safety procedures at workplace
- GS8.** identify need of first aid and render it accordingly.
- GS9.** report potential sources of danger and wear appropriate safety gear to avoid accidents.
- GS10.** planning of work and using tools in an organized manner to avoid accidents/incidents.
- GS11.** schedule daily activities and drawing up priorities related to workplace safety.
- GS12.** use of safety equipment such as fire extinguisher during fire accidents
- GS13.** • use personal protective equipments (ppes) such as protective gear, goggles, caps, shoes, • etc.
- GS14.** follow code of safety conduct
- GS15.** • manage relationships with co-workers and managers of the who may be stressed, frustrated, • confused or angry.
- GS16.** recognize problems and search for solutions
- GS17.** choose best methods to complete assigned tasks
- GS18.** identify problems immediately and take up solutions quickly to resolve delays.
- GS19.** assess situation & identify appropriate control measures.
- GS20.** • critically evaluate information obtained from customers, supervisor and co-workers to • perform day to day activities.
- GS21.** initiate and take-up own working and learning.

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Maintain Personal Health & Safety in bioenergy production manufacturing facility</i>	25	25	-	-
PC1. identify the requirements for safe work area.	3	-	-	-
PC2. explain how to Administer first aid and demonstrate how to Administer first aid.	4	5	-	-
PC3. identify the personal protective equipment used for the specific purpose	5	-	-	-
PC4. identify the heavy electrical and mechanical equipment's associated with manufacturing and show how to Identify the heavy electrical and mechanical equipment's associated with bioenergy production manufacturing	5	5	-	-
PC5. identify work safety procedures and instructions to operate bioenergy production machines and demonstrate how to Identify and perform work safety procedures and instructions to operate bioenergy production machines	5	5	-	-
PC6. explain occupational health & safety standards and regulations for bioenergy production manufacturing process	3	-	-	-
PC7. demonstrate good housekeeping practices and infection control guidelines	-	5	-	-
PC8. demonstrate how to Dispose- off any waste materials in accordance with safe working practices and procedures	-	5	-	-
NOS Total	25	25	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4050
NOS Name	Maintain Personal Health & Safety in Bioenergy manufacturing facility
Sector	Green Jobs
Sub-Sector	Water Management
Occupation	Entrepreneur
NSQF Level	4
Credits	1
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQF Clearance Date	31/08/2023



Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 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.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

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

- PC3.** 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.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** 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

Basic English Skills

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

Qualification Pack

- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** 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:

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** 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:

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** 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:

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** 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:

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

Qualification Pack

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. 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

KU11. 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 and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. 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

GS2. communicate effectively using appropriate language in formal and informal settings



Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- 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. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. 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.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. 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	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. 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/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	25/07/2024
Next Review Date	25/07/2027
NSQC Clearance Date	25/07/2024

Qualification Pack

SGJ/N4105: Ensure Manufacturing of Biomass pellet

Description

This unit is about ensure Manufacturing of Biomass pellet

Scope

The scope covers the following :

- process involved in manufacturing of biomass pellets
- standard protocol for testing of pellets

Elements and Performance Criteria

Ensure Manufacturing of Biomass pellet

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

- PC1.** explain placing of biomass on dyes and demonstrate placing of biomass on dyes
- PC2.** discuss extrusion process
- PC3.** discuss Operation of various machines in plant such as dryer, hammer mill, pellet mill, bomb calorimeter, etc. and demonstrate use of die, dryer, chipper, hammer mill, pellet mill, bomb calorimeter, etc.
- PC4.** discuss about speed, temperature and moisture control in pelleting process and show how to Adjust pellet producing machineries at dye of 3mm, specific speed, temperature and moisture control
- PC5.** discuss the process of cooling of biomass pellet and Express what is backpressure
- PC6.** discuss about standard protocol for testing of pellets and important parameters are Gross Calorific Value, Ash and Moisture
- PC7.** discuss all Do's and Don't
- PC8.** show how to control parameters during manufacturing
- PC9.** demonstrate use of moisture meter to measure water content in different agriculture waste
- PC10.** demonstrate the post-production cleaning and maintenance process followed in the industry

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's documentation policy
- KU2.** Obtain authorization from specified field safety officer and supervisor
- KU3.** Document information using appropriate corporate forms
- KU4.** Company's customer support policy
- KU5.** extrusion process
- KU6.** operate various machines in plant such as dryer, hammer mill, pellet mill, bomb calorimeter, etc



Qualification Pack

- KU7.** about speed, temperature and moisture control in pelleting process
- KU8.** all do's and don'ts in plant
- KU9.** placing of biomass on dyes
- KU10.** use of die, dryer, chipper, hammer mill, pellet mill, bomb calorimeter, etc

Generic Skills (GS)

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

- GS1.** Obtain authorization from specified field safety officer and supervisor
- GS2.**
 - Read and understand manuals, health and safety instructions, memos,
 - other company documents
- GS3.** Read from different sources- books, screens in machines and signage
- GS4.**
 - Express statements or information clearly so that others can hear and
 - understand
- GS5.** Participate in and understand the main points of simple discussions
- GS6.** Respond appropriately to any queries
- GS7.** Communicate with employees
- GS8.** Define organization rule- based decision making process
- GS9.** Plan and organize work schedule to meet deadlines.
- GS10.** Work constructively and collaboratively with others
- GS11.** Prepare organization code of conduct.
- GS12.** Recognize problems and search for solutions

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure Manufacturing of Biomass pellet</i>	25	25	-	-
PC1. explain placing of biomass on dyes and demonstrate placing of biomass on dyes	3	5	-	-
PC2. discuss extrusion process	4	-	-	-
PC3. discuss Operation of various machines in plant such as dryer, hammer mill, pellet mill, bomb calorimeter, etc. and demonstrate use of die, dryer, chipper, hammer mill, pellet mill, bomb calorimeter, etc.	3	5	-	-
PC4. discuss about speed, temperature and moisture control in pelleting process and show how to Adjust pellet producing machineries at dye of 3mm, specific speed, temperature and moisture control	3	5	-	-
PC5. discuss the process of cooling of biomass pellet and Express what is backpressure	3	-	-	-
PC6. discuss about standard protocol for testing of pellets and important parameters are Gross Calorific Value, Ash and Moisture	3	-	-	-
PC7. discuss all Do's and Don't	3	-	-	-
PC8. show how to control parameters during manufacturing	3	-	-	-
PC9. demonstrate use of moisture meter to measure water content in different agriculture waste	-	5	-	-
PC10. demonstrate the post-production cleaning and maintenance process followed in the industry	-	5	-	-
NOS Total	25	25	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4105
NOS Name	Ensure Manufacturing of Biomass pellet
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

Qualification Pack

SGJ/N4106: Ensure installation and operation of small biogas plant

Description

This unit is about ensure installation and operation of small biogas plant

Scope

The scope covers the following :

- understand the process involved in installation and operations of small biogas plant
- About the size of Bio Gas plant as per availability of raw materials

Elements and Performance Criteria

Ensure installation and operation of small biogas plant

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

- PC1.** discuss about bio gas and Difference between Biogas and LPG/CNG
- PC2.** discuss about the components required for the construction of BGP
- PC3.** discuss about the size of Bio Gas plant as per availability of raw materials. and show how to Select suitable location based on factors such as avoidance of water inundation/marshy land/tall tree.
- PC4.** discuss and select the types of Indian digester as per the design
- PC5.** discuss about the availability of raw materials for the construction at constructions and illustrate about the Construction materials which include bricks, sand, stone chips, cement, pipe, iron rod, biogas oven, etc.
- PC6.** discuss the use of Bio slurry and use of methane as a green substitute of LPG, wood, cattle dung and kerosene etc. are to be worked out for each sub zone, using BGP & community participation in doing so
- PC7.** explain uses of bio slurry for fishery as a source of feed.
- PC8.** discuss about the site for suitability of terrain and distance from kitchen
- PC9.** discuss about the space available for setting up of biogas plant
- PC10.** discuss availability of water as per the plant requirement
- PC11.** discuss availability of number of cattle and feedstock at site and demonstrate feeding of cattle dung slurry/pulverized food waste
- PC12.** identify cooking habit and number of family members
- PC13.** describe appropriate size of biogas plant
- PC14.** discuss the quantity of materials required. In case of pre-fabricated and modular type, select model and material from appropriate source
- PC15.** identify the source(s) from where materials would be collected.
- PC16.** discuss about arrangement and check appropriateness of tools required for excavation, levelling, fabrication and installation
- PC17.** discuss about layout marking at site
- PC18.** discuss about preparing the site as per requirement

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- PC19.** explain how to undertake proper casting of bed concrete.
- PC20.** explain about Fabricate/Assemble the Digester tank and fix the components of the modular biogas plant.
- PC21.** discuss about Fabricate outlet chamber for fixed dome type plant/Fixation of Guide frame in case of floating drum model
- PC22.** discuss about placing the inlet pipe and plaster the outside of partly fabricated digester.
- PC23.** discuss how to fabricate the inlet tank and displacement chamber
- PC24.** discuss how to undertake fabrication and fixation of gas holder/place the assembled modular biogas plant on the selected site
- PC25.** ensure Curing of civil works/ Ensure fixing of the modular plant with civil works
- PC26.** discuss about undertake Laying out gas distribution pipe for fabricated plant/excavate pit, install pre-fabricated plant and laying out its piping. and outline the piping layout area required for installation of gas pipelines between source and Kitchen
- PC27.** ensure proper fixation of accessories
- PC28.** explain how to check and test for any gas leakage
- PC29.** ensure proper charging of biogas plant with adequate amount of cattle dung and water.
- PC30.** explain Do's and Don't and illustrate the user with dos & don'ts of the gas usage
- PC31.** demonstration of Biogas generation process with the chart/video
- PC32.** demonstrating about the construction materials are required as per technical specification for a particular type of BGP for different agro-climatic condition
- PC33.** show how to find the man days required to complete the construction, after construction, Demonstrate appropriate preparation of feedstock
- PC34.** demonstrate appropriate preparation of feedstock
- PC35.** demonstrate the user for regular input of material to inlet chamber to avoid drying
- PC36.** demonstrate slurry collection from the plant
- PC37.** demonstrate utilization of slurry directly in fields
- PC38.** demonstrate appropriate drying of slurry
- PC39.** show how to pack dry slurry for use as compost
- PC40.** demonstrate user for regular maintenance of the gas pipeline and other apparatus
- PC41.** install gas regulator and gas stove etc.
- PC42.** demonstrate proper lighting up of biogas stove
- PC43.** prepare the site as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company's documentation policy
- KU2.** Document information using appropriate corporate forms
- KU3.** Obtain authorization from specified field safety officer and supervisor
- KU4.** Company's customer support policy
- KU5.** introduction to bio gas and difference between Biogas and LPG/CNG

Qualification Pack

- KU6.** the components required for the construction of BGP
- KU7.** the size of Bio Gas plant as per availability of raw materials
- KU8.** the types of Indian digester as per the design
- KU9.** the availability of raw materials for the construction at constructions
- KU10.** uses of bio slurry for fishery as a source of feed
- KU11.** the site for suitability of terrain and distance from kitchen
- KU12.** appropriate size of biogas plant
- KU13.** the source(s) from where materials would be collected
- KU14.** layout marking at site
- KU15.** feeding of cattle dung slurry/pulverized food waste
- KU16.** input of material to inlet chamber to avoid drying
- KU17.** slurry collection from the plant
- KU18.** appropriate drying of slurry
- KU19.** pack dry slurry for use as compost

Generic Skills (GS)

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

- GS1.** Prepare and maintain documentation.
- GS2.**
 - Read and understand manuals, health and safety instructions, memos,
 - other company documents
- GS3.**
 - Read various colour codes, as per standard electrical, mechanical and civil
 - nomenclature.
- GS4.**
 - Express statements or information clearly so that others can hear and
 - understand
- GS5.** Participate in and understand the main points of simple discussions
- GS6.** Respond appropriately to any queries
- GS7.** Communicate with employees
- GS8.** Define organization rule- based decision making process
- GS9.** Take decision with systematic course of actions and/or response
- GS10.** Plan and organize work schedule to meet deadlines
- GS11.** Work constructively and collaboratively with others.

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure installation and operation of small biogas plant</i>	60	40	-	-
PC1. discuss about bio gas and Difference between Biogas and LPG/CNG	2	-	-	-
PC2. discuss about the components required for the construction of BGP	2	-	-	-
PC3. discuss about the size of Bio Gas plant as per availability of raw materials. and show how to Select suitable location based on factors such as avoidance of water inundation/marshy land/tall tree.	2	3	-	-
PC4. discuss and select the types of Indian digester as per the design	2	-	-	-
PC5. discuss about the availability of raw materials for the construction at constructions and illustrate about the Construction materials which include bricks, sand, stone chips, cement, pipe, iron rod, biogas oven, etc.	2	3	-	-
PC6. discuss the use of Bio slurry and use of methane as a green substitute of LPG, wood, cattle dung and kerosene etc. are to be worked out for each sub zone, using BGP & community participation in doing so	2	-	-	-
PC7. explain uses of bio slurry for fishery as a source of feed.	2	-	-	-
PC8. discuss about the site for suitability of terrain and distance from kitchen	2	-	-	-
PC9. discuss about the space available for setting up of biogas plant	2	-	-	-
PC10. discuss availability of water as per the plant requirement	2	-	-	-
PC11. discuss availability of number of cattle and feedstock at site and demonstrate feeding of cattle dung slurry/pulverized food waste	2	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. identify cooking habit and number of family members	2	-	-	-
PC13. describe appropriate size of biogas plant	2	-	-	-
PC14. discuss the quantity of materials required. In case of pre-fabricated and modular type, select model and material from appropriate source	2	-	-	-
PC15. identify the source(s) from where materials would be collected.	2	-	-	-
PC16. discuss about arrangement and check appropriateness of tools required for excavation, levelling, fabrication and installation	2	-	-	-
PC17. discuss about layout marking at site	2	-	-	-
PC18. discuss about preparing the site as per requirement	2	-	-	-
PC19. explain how to undertake proper casting of bed concrete.	2	-	-	-
PC20. explain about Fabricate/Assemble the Digester tank and fix the components of the modular biogas plant.	2	-	-	-
PC21. discuss about Fabricate outlet chamber for fixed dome type plant/Fixation of Guide frame in case of floating drum model	2	-	-	-
PC22. discuss about placing the inlet pipe and plaster the outside of partly fabricated digester.	2	-	-	-
PC23. discuss how to fabricate the inlet tank and displacement chamber	2	-	-	-
PC24. discuss how to undertake fabrication and fixation of gas holder/place the assembled modular biogas plant on the selected site	2	-	-	-
PC25. ensure Curing of civil works/ Ensure fixing of the modular plant with civil works	2	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. discuss about undertake Laying out gas distribution pipe for fabricated plant/excavate pit, install pre-fabricated plant and laying out its piping. and outline the piping layout area required for installation of gas pipelines between source and Kitchen	2	2	-	-
PC27. ensure proper fixation of accessories	2	-	-	-
PC28. explain how to check and test for any gas leakage	2	-	-	-
PC29. ensure proper charging of biogas plant with adequate amount of cattle dung and water.	2	-	-	-
PC30. explain Do's and Don't and illustrate the user with dos & don'ts of the gas usage	2	3	-	-
PC31. demonstration of Biogas generation process with the chart/video	-	2	-	-
PC32. demonstrating about the construction materials are required as per technical specification for a particular type of BGP for different agro-climatic condition	-	2	-	-
PC33. show how to find the man days required to complete the construction, after construction, Demonstrate appropriate preparation of feedstock	-	2	-	-
PC34. demonstrate appropriate preparation of feedstock	-	2	-	-
PC35. demonstrate the user for regular input of material to inlet chamber to avoid drying	-	2	-	-
PC36. demonstrate slurry collection from the plant	-	2	-	-
PC37. demonstrate utilization of slurry directly in fields	-	2	-	-
PC38. demonstrate appropriate drying of slurry	-	2	-	-
PC39. show how to pack dry slurry for use as compost	-	2	-	-
PC40. demonstrate user for regular maintenance of the gas pipeline and other apparatus	-	2	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC41. install gas regulator and gas stove etc.	-	2	-	-
PC42. demonstrate proper lighting up of biogas stove	-	2	-	-
PC43. prepare the site as per requirement	-	2	-	-
NOS Total	60	40	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	SGJ/N4106
NOS Name	Ensure installation and operation of small biogas plant
Sector	Green Jobs
Sub-Sector	Renewable Energy
Occupation	Entrepreneur
NSQF Level	4
Credits	3
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification will be created by the Sector Skill Council. Each Element/ 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 Element/ 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 these criteria.
6. To pass the Qualification assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification.

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Minimum Aggregate Passing % at QP Level : 70

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

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N4102.Introduce to Entrepreneurship and describes the basics of biomass energy	23	27	0	0	50	14
SGJ/N4103.Manage financial budget and developing business plans	60	40	0	0	100	28
SGJ/N4104.Utilize government schemes and perform financial management of the business	35	15	0	0	50	14
SGJ/N4050.Maintain Personal Health & Safety in Bioenergy manufacturing facility	25	25	0	0	50	14
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	-	-	50	14
Total	163	137	-	-	300	84

Elective: 1 Biomass Pellet Manufacturing

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N4105.Ensure Manufacturing of Biomass pellet	25	25	0	0	50	16
Total	25	25	-	-	50	16



Qualification Pack

Elective: 2 Ensure installation and operation of small biogas plant

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
SGJ/N4106.Ensure installation and operation of small biogas plant	60	40	0	0	100	16
Total	60	40	-	-	100	16



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.