



Food Waste Measurement Policy

1. Introduction

Manipal university Jaipur is steadfast in its commitment to fostering a campus community that champions responsible resource management and ecological stewardship. As part of this unwavering dedication to sustainability, we recognize the pivotal role food waste reduction plays in minimizing our environmental footprint and advancing the principles of social responsibility.

This policy outlines the guidelines and procedures for measuring and managing food waste generated within Manipal University Jaipur. Recognizing the importance of sustainability and responsible resource management, the university is committed to reducing its environmental footprint, including food waste. This policy serves as a framework for monitoring and reducing food waste across campus.

2. Objectives

- 2.1. To quantify and assess the amount of food waste generated on campus.
- 2.2. To identify areas and operations within the university where food waste is most prevalent.
- 2.3. To develop strategies and initiatives for reducing food waste.
- 2.4. To promote awareness and education about food waste reduction among students, faculty, and staff.
- 2.5. To foster collaboration with local organizations to address food waste at the community level.

3. Responsibility and Accountability

- 3.1. The Directorate of General Services & Administration is responsible for implementing and overseeing this policy.
- 3.2. Each university department and dining facility is responsible for measuring, reporting, and actively working to reduce food waste within its respective area.





- 3.3. The Directorate of General Services & Administration shall provide guidance and support in implementing food waste reduction initiatives.

4. Food Waste Measurement

4.1. Regular Food Waste Audits:

4.1.1. Each dining facility and food service operation shall conduct regular food waste audits.

4.1.2. Audits shall include tracking the types and quantities of food waste generated.

4.1.3. Data from audits shall be recorded using standardized forms and reported to the Directorate of General Services & Administration.

4.2. Data Analysis:

4.2.1. The Directorate of General Services & Administration shall analyse the collected data to identify trends and areas for improvement.

4.2.2. Data shall be used to establish benchmarks and set food waste reduction targets.

5. Food Waste Reduction Strategies

5.1. Prevention:

5.1.1. Implement portion control measures.

5.1.2. Enhance menu planning and forecasting to reduce overproduction.

5.1.3. Educate food service staff on food waste reduction techniques.

5.2. Diversion:

5.2.1. Promote composting of food waste.

5.2.2. Explore partnerships with local organizations for food donation programs.

5.3. Education and Outreach:





5.3.1. Conduct awareness campaigns for students, faculty, and staff.

5.3.2. Offer workshops and seminars on food waste reduction.

6. Reporting and Monitoring

6.1. The Directorate of General Services & Administration shall maintain records of food waste data and reduction initiatives.

6.2. Progress reports shall be provided annually to the university community and shared with relevant stakeholders.

7. Effective Date Review and Evaluation

7.1. Food Waste Measurement Policy of Manipal University Jaipur shall be effective from 24th August 2020.

7.2. This policy shall be reviewed biennially to assess its effectiveness and make necessary updates.

7.3. The Directorate of General Services & Administration shall conduct periodic assessments to ensure compliance with the policy.

8. Conclusion

Manipal University Jaipur is committed to reducing food waste as part of its broader sustainability efforts. This policy outlines the responsibilities, procedures, and strategies for measuring and reducing food waste on campus. By working together, we can contribute to a more sustainable and environmentally responsible university community. This policy document serves as both an emblem of our commitment and a blueprint for action. Within its pages, we articulate our vision for comprehensively measuring and proactively mitigating food waste throughout the university. This commitment is grounded in our understanding of food waste as a multifaceted challenge that demands a holistic approach.

Number	Year	Major Revision
Version 3.0	2022	Modification as per vendor agreement
Version 2.0	2021	COVID 19 Regulations
Version 1.0	2020	Initial policy

Approval -





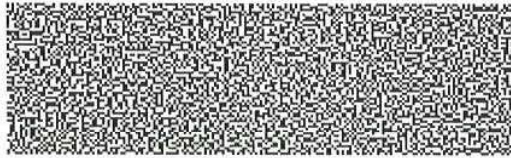
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INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

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Certificate Issued Date : 04-Jul-2023 12:49 PM
Account Reference : NONACC (FI)/ kacrsfl08/ KORAMANGALA5/ KA-JY
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Description : AGREEMENT
Consideration Price (Rs.) : 0
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First Party : QUESS CORP LIMITED
Second Party : AJAY KUMAR GARBAGE CLEANING SERVICE
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This Stamp Paper forms an integral part of
the Agreement executed between Quess Corp Limited
and Ajay Kumar Garbage Cleaning Service

For: Ajay Kumar
Ajay Kumar
Proprietor



Statutory Alert:

1. The authenticity of this Stamp certificate should be verified at www.stockstamp.com or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
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3. In case of any discrepancy please inform the Competent Authority.

INDIA NON JUDICIAL GOVERNMENT OF KARNATAKA

VENDOR AGREEMENT

This Vendor Agreement ("Agreement") is made and executed on 4th July-2023 by and between.

QUESS CORP LIMITED, bearing Corporate Identification Number (CIN)- L74140KA2007PLC043909, a company incorporated under the Companies Act 1956 and deemed to be existing under the Companies Act 2013, having its registered office address at 3/3/2 Bellandur Gate, Sarjapur Road, Bengaluru - 560103, Karnataka, India (hereinafter referred to as "**Company**" which term, unless it is repugnant to the context or meaning thereof, shall mean and include its successors-in-interest, and permitted assign)**OF THE FIRST PART;**

AND

M/s AJAY KUMAR GARBAGE CLEANING SERVICE, (PAN No.DIWPK3483E), a Company, incorporated under the Companies Act 1956, and having its registered office at Jhag Bus Stand, Bagru, Jaipur, Rajasthan, represented by **Ajay Kumar, Proprietor** (hereinafter referred to as '**Vendor**' which expression shall, unless repugnant to the context and contrary to the meaning thereof, include its successors-in-interest, legal representatives, administrators and assigns), **OF THE SECOND PART.**

WHEREAS:

- A. The Vendor is engaged in a business of **Garbage Cleaning Services**.
- B. The Company is a leading business service provider, offering a host of services to help organization manage their non-core activities in the areas of workforce management, operating asset management and global technology solutions, across industries & geographies.
- C. Vendor has represented that it has necessary skills, experience and expertise to provide various compliance related services to Company and based on the aforesaid representations from Vendor, Company agrees to avail such services from the Vendor in accordance with their requirement.

NOW, THEREFORE, In consideration of the matters described above, and of the mutual benefit and obligations set forth in this Agreement, the Parties agree as follows:

1. DEFINITIONS

The words/phrases defined in this clause shall bear the same meaning in this Agreement, except as indicated otherwise expressly or by context.

- a) **Agreement**: shall mean this agreement and any Annexures hereto.
- b) **Affiliate** means and includes Company or other person which is either controlled by Company or who controls Company or which is controlled by the same person / entity who controls Company, either by significant shareholding, voting rights or otherwise.

Confidential @ 2021

For: Ajay Kumar

Ajay Kumar
Proprietor




Page 1 of 15



Manipal University Jaipur Water Reuse Policy

Policy Statement:

Manipal University Jaipur recognizes the critical importance of water conservation and sustainable water management to address global water challenges and reduce its environmental impact. This Water Reuse Policy establishes guidelines and procedures for the responsible reuse of water on campus, promoting a culture of water efficiency and environmental stewardship among faculty, staff, and students.

I. Purpose

The purpose of this Water Reuse Policy is to:

1. Promote responsible water management practices within Manipal University Jaipur .
2. Reduce the consumption of potable water for non-potable purposes.
3. Encourage the implementation of water reuse systems and technologies.
4. Establish guidelines for the collection, treatment, and distribution of reclaimed water.
5. Comply with all applicable local, state, and federal regulations related to water reuse.

II. Scope

This policy applies to all university facilities, including academic buildings, residence halls, administrative offices, athletic facilities, and outdoor spaces.

III. Definitions

1. **Reclaimed Water:** Treated wastewater that is safe and suitable for non-potable uses, such as irrigation, cooling, and toilet flushing.
2. **Greywater:** Wastewater generated from sinks, showers, and laundry facilities that can be treated and reused for certain non-potable purposes.
3. **Rainwater Harvesting:** The collection and storage of rainwater for later use, primarily for landscape irrigation.





4. Water Reuse System: Infrastructure and technologies designed to treat and distribute reclaimed water for non-potable purposes.
5. Potable Water: Safe and clean drinking water suitable for human consumption.

IV. Guidelines and Procedures

A. Water Reuse Systems:

Manipal University Jaipur shall assess and implement water reuse systems, where feasible, to reduce potable water usage. Such systems may include but are not limited to greywater recycling, rainwater harvesting, and reclaimed water distribution.

B. Greywater Recycling:

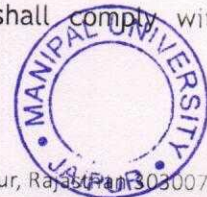
1. Greywater generated within university facilities shall be collected, treated, and reused for approved non-potable purposes.
2. Treatment and storage systems for greywater shall be designed, installed, and maintained in compliance with applicable regulations and industry standards.
3. Campus users shall be educated on the safe and responsible use of greywater.

C. Rainwater Harvesting:

1. Rainwater shall be collected from roofs and other surfaces and stored for landscape irrigation and other non-potable uses.
2. The design and maintenance of rainwater harvesting systems shall conform to applicable guidelines and regulations.

D. Reclaimed Water Distribution:

1. Manipal University Jaipur shall establish a reclaimed water distribution network to provide treated wastewater for non-potable purposes across campus.
2. The treatment and distribution of reclaimed water shall comply with regulatory standards and ensure the safety of users.





E. Monitoring and Reporting

1. Manipal University Jaipur shall establish a monitoring program to track water reuse system performance and water quality.
2. Regular reports on water reuse activities, water savings, and system maintenance shall be submitted to the appropriate university departments and regulatory agencies.

V. Implementation and Compliance

A. Responsibility:

1. The Directorate of General Services & Administration shall be responsible for overseeing the implementation and compliance of this policy.
2. All university departments and users shall cooperate in the implementation and enforcement of this policy.

B. Compliance:

1. Failure to comply with this policy may result in disciplinary action as per university regulations.
2. Manipal University Jaipur shall maintain compliance with all local, state, and federal regulations related to water reuse.

VI. Review and Revision

This policy shall be reviewed annually and updated as necessary to reflect changes in technology, regulations, and best practices related to water reuse.

VII. Conclusion

Manipal University Jaipur is committed to reducing its environmental impact and promoting responsible water management through this Water Reuse Policy. By implementing water reuse systems and fostering a culture of water efficiency, Manipal University Jaipur aims to contribute to a sustainable and water-conscious campus environment and set an example for its community and beyond.





Version History

Number	Year	Major Revision
Version 3.0	2022	Greywater Resue
Version 2.0	2021	Special Clause added due to COVID 19
Version 1.0	2018	Initial policy

Approval

Handwritten signature in blue ink.





Manipal University Jaipur Water Use Policy

1. Introduction

Water is a precious and finite resource vital for sustaining life and the functioning of our society. As a responsible institution, our university recognizes the significance of water conservation and sustainable usage practices. This policy outlines the guidelines, responsibilities, and strategies for efficient water use and conservation within the Manipal University Jaipur premises. It is designed to ensure the responsible management of water resources, promote sustainability, and minimize the Manipal University Jaipur's environmental impact.

2. Objectives

- To reduce water consumption across all Manipal University Jaipur's facilities.
- To promote awareness and education regarding water conservation among the university community.
- To implement best practices for water management, including efficient technologies and infrastructure.
- To comply with local, state, and national water use regulations and standards.

3. Responsibilities

a. Directorate General Services & Administration:

- Develop and enforce water conservation strategies.
- Allocate necessary resources for the implementation of water-saving measures.
- Regularly monitor and assess water usage across campus.

b. Facilities Management:

- Implement efficient plumbing, fixtures, and irrigation systems.
- Conduct regular maintenance and repairs to prevent water wastage.
- Investigate and adopt new technologies for water conservation.





c. Faculty, Staff, and Students:

- Encourage responsible water use practices among the university community.
- Participate in awareness campaigns and initiatives.
- Report any water leaks or inefficiencies promptly.

4. Water Use Guidelines

a. Landscaping and Irrigation:

- Use native and drought-resistant plants in landscaping.
- Schedule irrigation during off-peak hours to minimize water loss due to evaporation.
- Utilize rainwater harvesting and recycled water for irrigation where possible.

b. Infrastructure and Buildings:

- Install low-flow faucets, toilets, and showerheads in all buildings.
- Regularly inspect and repair water leaks promptly.
- Explore the use of greywater systems for non-potable uses.

c. Educational Programs:

- Integrate water conservation topics into the curriculum and awareness campaigns.
- Offer workshops, seminars, and informational materials on water-saving practices.

5. Monitoring and Reporting

- Implement a system to monitor water usage across various university departments and facilities.
- Regularly analyze and report on water consumption and conservation efforts.
- Encourage feedback from the university community to improve water conservation initiatives.

6. Compliance and Review

- Ensure compliance with local, state, and national water use regulations.
- Conduct periodic reviews to assess the effectiveness of the water conservation measures.





- Adjust policies and practices as needed to improve conservation efforts.

7. Conclusion

This Water Use and Conservation Policy aims to create a sustainable and responsible approach to water management within the university. By fostering a culture of consciousness and utilizing efficient technologies, the university endeavors to contribute to a more sustainable environment for current and future generations.

This policy shall be communicated to all staff, students, and stakeholders and be subject to periodic review and amendments to meet evolving water conservation standards and best practices.

Version History

Number	Year	Major Revision
Version 3.0	2022	Enhancement of water-saving measures
Version 2.0	2021	COVID 19 Regulations
Version 1.0	2020	Initial policy

Approval





POLICY FOR DISPOSE OF E-WASTE

Introduction

1. Manipal University Jaipur (MUJ), at its discretion, procured IT equipment's like Laptops, Desktops, Printers /Scanner/screen and storage media etc. for carrying out official work and for day to day functioning of the University. A guideline needs to be formulated to dispose of e-Waste at the regular interval as with each passing year, the e-waste will accumulate in the university

Purpose

2. The purpose of this policy is to define the procedure for dispose of e-waste of the university.

A classification of E-waste

3. All equipment's which are purchased through IT Infrastructure department shall be qualify for declaring e-waste after end of product useful life. The following is the list category of E-waste items.
 - a) all End users Devices- Laptop /Desktop/Printers/scanner/photocopiers /storage media/Phones
 - b) all IT accessories item- Keyboard/ mouse/LAN cables etc.
 - c) all Network devices- Router/firewall/ switch /hub etc.

Procedure

4. All IT equipment's and accessories issued to users and to any department recommended to dispose of centrally through IT Infra department. IT Infra department shall always be in loop for purchasing or dispose of any IT equipment's.
5. The equipment which require to be gifted or sold internally or to product vendor shall be in accordance with another policy on the subject dispose of old workable IT assets by NON-Teaching staff dated **03 JAN 2019** file No: - **MUJ/REGR/1467/IT/2019**.





6. IT Infrastructure department shall prepare the list of IT equipment which need to move in E-waste after going through life of product and end of useful life. A committee chaired by Registrar shall decide and accord approval dispose of E-waste.
7. The E-waste declared to dispose of shall be allowed to store in collection center or scrap office maximum period of **90 days** or as per final approval from Chief officer or Registrar.

Ways to Dispose of E-waste

8. A committee formed by Registrar decide to dispose of the E-waste by following ways.
 - a. Gives back to OEM or vendor in product buy back offer as special case
 - b. Directly dispose off at product companies drop off points.
 - c. Donate to society or for charity
 - d. Sell off

Enforcement

9. This policy become effective from 17 January 2020.

Ref File No : MUJ/REGR/P/1850/2020

Dated : 17 January 2020

Distribution:

All MUJ Users



Dr. H Ravishankar Kamath
Registrar
Manipal University Jaipur



Manipal University Jaipur
Waste Disposal and Recycling Policy

1. Introduction

Manipal University Jaipur recognizes the importance of responsible waste disposal and recycling to minimize environmental impact and promote sustainability. This policy document outlines our commitment to measuring and reducing the amount of waste sent to landfill while increasing recycling efforts within our university community.

2. Objectives

2.1. Sustainability:

To minimize the environmental impact of waste disposal and promote sustainability through responsible practices.

2.2. Measurement and Reporting:

To accurately measure and report the amount of waste sent to landfill and the volume of waste recycled.

2.3. Education:

To educate and engage the university community in waste reduction and recycling efforts.

3. Definitions

3.1. Landfill Waste:

Waste materials are disposed of in landfills for final disposal.

3.2. Recycling:

The process of collecting, processing, and reusing materials to prevent waste and reduce the demand for raw materials.

4. Waste Management and Recycling Principles

4.1. Source Separation:





Manipal University Jaipur promotes source separation of waste, encouraging individuals to separate recyclables from non-recyclables at the point of disposal.

4.2. Recycling Infrastructure:

The university will provide recycling bins and infrastructure to facilitate proper recycling throughout campus.

4.3. Waste Audits:

Regular waste audits will be conducted to assess waste composition, identify opportunities for improvement, and measure progress toward waste reduction goals.

5. Measurement and Reporting

5.1. Waste Metrics:

Manipal University Jaipur will establish metrics to measure the volume of waste sent to landfill and the volume of waste recycled on a regular basis.

5.2. Annual Reporting:

The university will publish annual reports detailing waste disposal and recycling data, progress toward waste reduction goals, and areas for improvement.

6. Education and Engagement

6.1. Education Programs:

Manipal University Jaipur will conduct educational programs, workshops, and campaigns to educate employees, students, and visitors about responsible waste disposal and recycling.

6.2. Community Engagement:

The university will engage the campus community in waste reduction efforts, encouraging participation and behavior change.





7. Waste Reduction Initiatives

7.1. Waste Reduction Goals:

The university will establish waste reduction targets to reduce the volume of waste sent to landfill over time.

7.2. Recycling Programs:

Manipal University Jaipur will expand recycling programs to increase the volume of materials recycled.

8. Evaluation and Improvement

8.1. Regular Assessment:

- a. This policy will be periodically reviewed to assess its effectiveness in measuring waste disposal and promoting recycling.
- b. Feedback from the university community and regulatory agencies will be considered for policy enhancements.

9. Conclusion

Manipal University Jaipur is dedicated to responsible waste disposal and recycling practices, promoting sustainability and reducing environmental impact. This policy document reflects our commitment to measuring and reducing the amount of waste sent to landfill while increasing recycling efforts within our academic community.

Version History

Number	Year	Major Revision
Version 3.0	2022	Establish waste reduction targets
Version 2.0	2021	Special Clauses due to COVID 19
Version 1.0	2018	Initial policy

Approval





Manipal University Jaipur

Water Quality Standards and Guidelines for Water Discharges

1. Introduction

Manipal University Jaipur is committed to safeguarding the environment, ecosystems, wildlife, and the health and welfare of our campus community. These Water Quality Standards and Guidelines for Water Discharges outline our commitment to responsible water management practices to maintain high water quality standards. All members of our university community are expected to adhere to these standards to protect our environment and ensure the well-being of all.

2. General Water Quality Standards

- a. All water discharges from university operations must comply with local, state, and federal regulations regarding water quality.
- b. Water discharges should not pose a threat to ecosystems, wildlife, or human health and welfare.
- c. The discharge of pollutants into natural water bodies, stormwater drains, or wastewater treatment systems is strictly prohibited without proper authorization.

3. Pollutant Control Measures

- a. All university departments and units must implement measures to minimize the release of pollutants into water discharges. This includes, but is not limited to, controlling chemical, biological, and physical contaminants.
- b. Hazardous materials, including chemicals, oils, and toxic substances, must be securely stored, handled, and disposed of in accordance with relevant regulations.
- c. The university promotes the use of non-toxic, environmentally friendly alternatives whenever possible to minimize pollutant release.





4. Stormwater Management

- a. All campus facilities, construction sites, and open areas must have effective stormwater management systems in place to prevent contamination of natural water bodies.
- b. Stormwater runoff should be directed away from potential pollutant sources and properly managed to reduce sedimentation and pollution.
- c. Any construction or development projects must follow erosion and sediment control practices to prevent soil erosion into stormwater systems.

5. Wastewater Treatment

- a. All wastewater generated on campus must be treated in accordance with local wastewater treatment regulations before discharge.
- b. The university will invest in and maintain efficient wastewater treatment systems to ensure the removal of contaminants and pollutants.
- c. Regular inspections and maintenance of wastewater treatment facilities are essential to ensure their proper functioning.

6. Reporting and Record Keeping

- a. Any incidents of water pollution or non-compliance with these standards must be promptly reported to the university's Directorate of Genral Services & Administration.
- b. Comprehensive records of water quality monitoring, pollutant control measures, and wastewater treatment activities must be maintained and made available for regulatory inspection.

7. Training and Education

- a. All personnel responsible for handling or managing water discharges must undergo training in water quality management and compliance with these guidelines.





- b. Regular educational programs will be provided to raise awareness among the university community about the importance of water quality protection and responsible water management.

8. Review and Revision

- a. These Water Quality Standards and Guidelines for Water Discharges will be reviewed annually to ensure they remain in alignment with evolving local, state, and federal regulations and best practices.
- b. Necessary revisions will be made to further enhance water quality protection efforts on campus.

Version History

Number	Year	Major Revision
Version 2.0	2022	Construction or development projects must follow erosion and sediment control practices to prevent soil erosion into stormwater systems
Version 1.0	2020	Initial Guidelines

Approval



Overview:

This manual enables the operator of the Bio-Urja to emphasize on the systematic methodology to operate the system. The manual is common for all the plants unless specified by the technical team of GPS.

Contents:

- 1) Introduction to the system.
- 2) Major Components in the system.
- 3) Daily Requisite Checks.
- 4) Slurry Circulation.
- 5) Waste Addition.
- 6) Cleaning & Maintenance

Introduction

This document defines the standard operating procedure for the Bio-Urja system, a bio-methanation system installed by GPS Renewables Pvt Ltd.

The bio-methanation system is a high throughput digestion system operating on the food waste feedstock. The gas produced is used daily for the cooking needs in the kitchen where GPS burners have been installed.

Digestion Process

Input of the system consists mainly of food waste and vegetables. This input is fed into the shredder and is mixed uniformly with the slurry (from the reactor) and is pumped into the reactor by using a mixing tank cutter pump.

A temperature of 39 degree Celsius is maintained by using a temperature controller, geyser, little pump and coil (coil is fixed inside the reactor). Once the food waste is fed into the reactor, the anaerobic digestion takes place and it gets bio-methanised as a result of which biogas is formed.

This biogas contains water content, H₂S, CO₂ and Methane. To separate the impurities (Water, H₂S, and CO₂) this gas is passed through a water scrubber, H₂S scrubber and air filter.

From here the biogas is stored in a temporary storage balloon and when the balloon is full; this biogas is compressed and stored in a pressure vessel by using a compressor. Biogas is supplied from the pressure vessel to the kitchen. Through specialized burner biogas are used for cooking.

Major Components in the system:

- 1) The Digester
- 2) Hydrolyzer with Screw Pump
- 3) The Input System
- 4) Scrubbing Unit
- 5) Automation & Flaring System
- 6) Balloon Cage
- 7) Compressor
- 8) Pressure vessel
- 9) Heating system

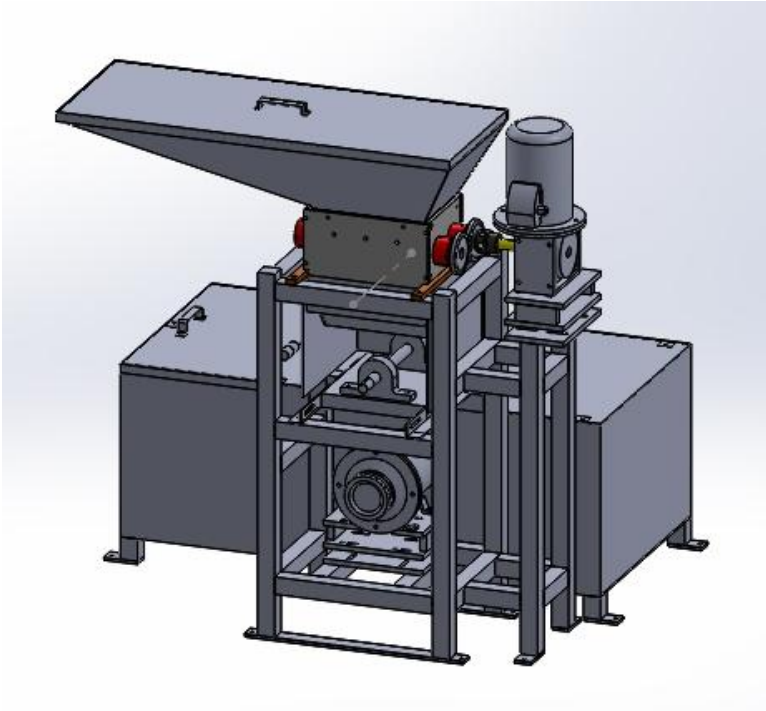
Daily Requisite Checks:

- ❖ Remove the water accumulation in the scrubber-1 & scrubber-2.
- ❖ Remove the water accumulation in the Compressor tank.
- ❖ Check water level in the SS Tank, fill if it is < 75%.
- ❖ Check all the valves whether in appropriate position.
- ❖ Check all the pipe lines (Slurry & Gas lines) for any break/leak.
- ❖ Check whether manual overflow happens by opening the manual overflow valve-1 and inform the same to GPS operation team.
- ❖ Note down the pressure value in the pressure vessel pressure gauge and inform the GPS operation team if it is >5bar.
- ❖ Clean the SS over flow line once in every 3 days.
- ❖ Check & fill the oil level in the compressor once in a week.
- ❖ Check and ensure the proper cleaning of Shredder, pulveriser and mixing tank after use on daily basis.
- ❖ Maintain the cleanness in the site.

Valve Position Diagram



Shredder



VALVE NOTATIONS					
Sl no	Type of Valve	Valve Location	Valve No	Purpose	Color Code
1	Ball Valve	Digester	Valve 1	Overflow Check valve	Yellow
2	Ball Valve	Digester	Valve 2	Maintenance Valve	Red
3	Ball Valve	Digester	Valve 3	Overflow Line	Yellow
4	Ball Valve	Digester	Valve 4	Overflow Line	Yellow
5	Ball Valve	Digester	Valve 5	Slurry Removal from Digester	Dark Green
6	Ball Valve	Digester	Valve 6	Slurry Removal from Digester	Dark Green
7	Ball Valve	Inlet Line of Digester	Valve 7	Control valve for cutter pump and Digester Input	Dark Green
8	Ball Valve	Mixing tank	Valve 8	Valve for re-circulation	Dark Green
9	Ball Valve	Inlet line of Hydrolyzer	Valve 9	Control valve b/w Hydrolyzer Input and Cutter Pump	Dark Green
10	Ball Valve	Hydrolyser drain	Valve 10	Drain for hydrolyser	Red
11	Ball Valve	Inlet line of Screw pump	Valve 11	Valve b/w Hydrolyzer output and Screw pump Input	Dark Green
12	Ball Valve	Outlet line of Screw pump	Valve 12	Slurry circulation valve for Hydrolyser	Dark Green
13	Ball Valve	Outlet line of Screw pump	Valve 13	Control valve b/w Screw pump output and Mixing tank	Dark Green
14	Ball Valve	Drainage	Valve 14	Drainage line connector	Yellow
15	Ball Valve	Hydrolyser	Valve 15	Sample collection from Hydrolyser	Yellow
Color Code for valves					
1	Yellow	Valves operated upon Instruction			
2	Dark Green	Daily Operational Valves			
3	Red	Fixed Position Valves			

Over flow & slurry level check:

- ❖ Open valve 1 and check over flow of slurry and inform the GPS operation team about the overflow.
- ❖ Close valve 1 and remove the appropriate quantity of slurry through the mixing tank as informed by the GPS Operation team.

Procedure to clean the SS Overflow Line:

- ❖ First close valve 3 and open valve 4, drain the slurry completely from the pipe later close valve 4 and open valve 3.

Procedure for Slurry Circulation:

For digester:

Step 1: Please ensure valve 8, valve 9, valve 13, valve 14, are in closed condition.

Step 2: Now open valve 5, valve 6. Allow the slurry to fill in the Mixing tank.

Step 3: Make sure that the slurry does not over flow from the mixing tank.

Step 4: Now open valve 7.

Step 5: Switch ON the Mixing tank cutter Pump and feed the collected slurry in the mixing tank into the digester.

Step 6: Repeat the above process for 60minutes.

Step 7: switch OFF the cutter pump.

For hydrolyzer:

Step 1: Ensure the valve 13 is closed and open the Valve 11 which is output from hydrolyzer.

Step 2: Ensure valve 12 is opened.

Step 3: Switch ON the Screw pump to start circulation.

Step 6: Do circulation for 60 minutes after, switch OFF the screw pump and close the valves

11 and then valve 12.

Procedure for taking slurry samples:

From digester:

Step 1: After slurry circulation activity collect the sample in the mixing tank by opening Valve 5, valve 6.

Step 2: Filter the sample thrice and measure exactly 20ml for titration using strainer and syringe.

Step 3: Put back the extra Digester slurry from the mixing tank back into digester.

From hydrolyzer:

Step 1: Open the small 1 inch valve 15 in the hydrolyzer which is given to take the slurry sample. Take half a beaker of the hydrolyzer slurry sample to check the PH.

Procedure for Waste Addition:

To Digester:

Step 1: As per titration result obtained, get information from the GPS operation team about the quantity of waste to be added to the Digester from Hydrolyzer.

Step 2: Ensure Proper circulation of Hydrolyzer slurry before addition.

Step 3: Ensure the drainage valve 14 is closed.

Step 4: Open valve 13, and valve 11 then switch on the Screw pump.

Step 5: Allow little amount of slurry ($1/8^{\text{th}}$ of mixing tank) to fill in the mixing tank. Switch OFF the Screw pump and close the valve 13, valve 11.

Step 6: By opening valve 6, allow the digester Slurry to fill in the mixing tank and mix both slurry in the mixing tank by opening circulation valve 8, and ensure valve 9 is closed. Run the cutter pump.

Step 7: Then close the valve 8 and send the slurry to the digester by open the valve 7 & close Valve 6 and run the cutter pump.

Step 8: Repeat the process from Step 4 to Step 7 till it reaches required quantity of hydrolyzer slurry as recommended by the GPS operation team to fill in the Digester from hydrolyser.

To Hydrolyzer Unit:

Step 1: Collect the waste from the canteen/kitchen.

Step 2: Ensure all valves of the mixing tank are in closed position.

Step 3: Weigh up to 25kg of waste and feed the waste into the shredding hopper manually and shred it.

Step 4: Open valve 13, valve 11 then Ensure valve 7, 8, 12 are closed and Switch ON the screw pump.

Step 5: Allow the slurry to fill 50 percent of the total volume of mixing tank.

Step 6: Switch OFF the screw pump and Close valve 13 of Screw pump.

Step 7: Mix the shredded waste with collected slurry in the mixing tank by Switching ON the mixing tank cutter pump. Ensure valve 8, are in open condition and valve 9 is closed for the circulation.

Step 8: Ensure proper mixing and switch OFF the cutter pump.

Step 9: Open Valve 9, and close valve 8.

Step 10: Turn ON the mixing tank cutter pump and allow the mixture to pump into the Hydrolyzer.

Step 11: Repeat Step 3 to 10 until the total amount of waste is being added.

Step 12: Open valve 11 and valve 12 and ensure valve 13 is closed, switch on the Screw pump and allow circulation for 10-15 minutes.

Step 13: Clean the Shredding & Mixing unit thoroughly.

Step 14: If waste is left out, Please ensure that it is properly closed and stored in appropriate place.

Cleaning & Maintenance:

- ❖ Ensure all components of the plant are kept in the appropriate position and properly seated.
- ❖ Clean the Mixing & shredding unit immediately after use.
- ❖ Place the food waste collection bins in the provided space and properly closed.
- ❖ All Tools & Tackles used during operations should be removed from plant premises after use and store properly.

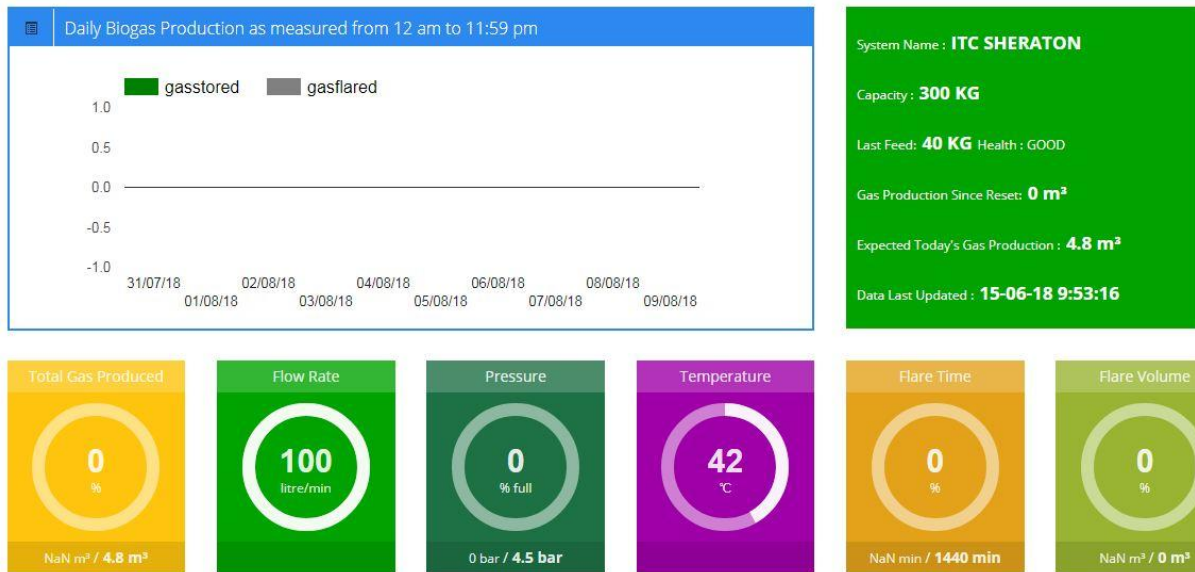
IMEI number:

IMEI NO (GSM Modem- RMS) : **866104025429310**

IMEI NO (GSM Modem- Titrator): **862631037463550**

Dash Board Details:

Dash Board Link: <http://installations.greenpowersystems.co.in/dashboard/bootstrap/dashboard.php>



Recommended Web browser: [Google Chrome](#) or [Mozilla Firefox](#) .

Dash Board username: **itcsheraton**

Dash Board password: **pass12345**

