

How to Store & Transport Biomass Safely

Best Practices for Waste-to-Biofuel Materials | India-Compliant Guide by BioTradX

Safe storage and transportation of biomass and industrial waste feedstock is essential for maintaining quality, preventing fires, and meeting Indian environmental regulations. Whether you handle agro-residues, wood chips, UCO, briquettes, RDF, or mixed waste, following proper guidelines ensures smoother trade, lower losses, and regulatory compliance.

This guide simplifies the key steps.

1. Why Safe Storage Matters

Biomass is **combustible**, **moisture-sensitive**, and subject to **quality degradation** if not handled properly.

Proper storage helps you:

- Maintain calorific value
- Reduce contamination & spoilage
- Prevent fires and self-heating
- Stay compliant with CPCB & State PCB norms
- Reduce operational losses

2. Storage Best Practices for Biomass (India-Focused)

✓ Keep Moisture Under Control

Moisture increases weight, reduces energy value, and can lead to fungal growth.

Recommended:

- Store under covered sheds
- Use pallets or tarpaulin to avoid ground contact

- Maintain good ventilation

For UCO & liquid feedstock:

- Keep containers sealed and away from sunlight
- Use food-grade or corrosion-resistant drums

✓ Prevent Fire Hazards

As per **NDMA & Fire Safety Norms**, biomass must be stored with basic fire-prevention steps:

- Keep material away from electrical installations
- Avoid large, compact piles that retain heat
- Maintain fire extinguishers (ABC type or foam) nearby
- Ensure aisles for movement & emergency access
- Do not allow smoking near storage

✓ Maintain Segregation

Under **Solid Waste Management Rules (2016)** and industry best practices:

- Store different waste types separately
- Do not mix wet & dry biomass
- Keep contaminants (plastic, metal, glass) out
- Label areas clearly

✓ Protect Material from Rain & Humidity

Rainwater leads to swelling, decay, and weight changes.

Use:

- Tin roofing
- Waterproof sheets
- Elevated storage floors

✓ Regular Quality Checks

Quality affects pricing and buyer acceptance on BioTradX.

Check periodically for:

- Moisture levels
- Odour changes
- Visible mold
- Foreign materials

3. Safe Transportation Practices (Compliant & Practical)

✓ Use Covered Vehicles

To comply with **CPCB guidelines for transport of solid waste**:

- Use tarpaulin-covered trucks
- Seal loose biomass to prevent spillage
- For liquids like UCO, use leak-proof drums & secure them inside the vehicle

✓ Maintain Proper Documentation

Depending on material type, keep:

- Invoice & transport challan
- E-Way Bill (if applicable under GST rules)
- Declaration of waste type
- Consent/authorization for regulated waste streams (if required)

✓ Avoid Overloading

Overloading can:

- Reduce safety
- Lead to fines under Indian Motor Vehicles Act
- Increase damage and spillage

Maintain weight limits and even distribution.

✓ Follow Basic Safety Standards

- Train loaders and drivers
- Use gloves and masks where dust levels are high

- Secure all material before movement
- Ensure fire extinguishers are available in the vehicle for high-risk biomass

✓ **Ensure Traceability**

To maintain transparency and reduce disputes:

- Record pickup & delivery timestamps
- Capture photos before loading and after unloading
- Maintain weighbridge slips
- Use platform features like BioTradX QC & dispatch uploads

4. Material-Specific Tips

Agro Waste (Husk, Bales, Stalks)

- Keep dry and elevated
- Avoid direct soil contact
- Compress bales for easier transport

Wood Chips / Pellets

- Store in low-humidity areas
- Monitor for self-heating
- Do not compact excessively

Biomass Briquettes

- Keep moisture below 10–12%
- Stack with space for airflow

Used Cooking Oil (UCO)

- Store in sealed drums away from heat
- Prevent mixing with water
- Transport in approved food-safe containers

5. Environmental & Legal Compliance in India

Following these rules ensures safe and legal handling:

- **Solid Waste Management Rules, 2016**
For collection, storage, and transport of industrial waste.
- **Hazardous Waste Management Rules, 2016 (as applicable)**
For specific categories like contaminated UCO or chemical residues.
- **CPCB Guidelines**
For transport, covering, and preventing spillage.
- **State Pollution Control Board (SPCB) Conditions**
For storage, fire safety, and material handling.
- **Motor Vehicles Act**
For weight limits and vehicle safety standards.

