



WASTE MANAGEMENT AND RECYCLING STRATEGIES AT FIRMENICH

CLARE LUMKONG

DIRECTOR, SUSTAINABILITY, GWS ORGANIZATION



PERFUMERY
*Fine Fragrance
Consumer Fragrances*

WHAT WE DO

POWERED BY WORLD-CLASS
SCIENCE & INNOVATION



INGREDIENTS
*Naturals
Molecules*



**TASTE &
BEYOND**
*Beverages
Sweet Goods
Savory*

GLOBAL ESG LEADERSHIP

Tackling Climate Change & Embracing Nature



1 of 2 companies WW to be triple A 5 consecutive years



1 of 27 companies WW determined to restore biodiversity



100% Renewable Electricity in all operations WW



Member of UEBT; 100% verified biodiversity strategy



Business Ambition for 1.5°C 1 of 570 companies



ESG Risk Rating Score: 8,9 128th of 15,359 companies rated 2nd in our industry



1st in our industry to complete B Corp SDG Action manager assessment with result of 84.3/100



UN Global Compact LEAD 1/40+ WW #1 in Industry

Advancing Social Impact



1st in the industry to achieve Global certification



Recognized by Ethisphere® as one of the World's Most Ethical Companies® for the second time (2023)



Disability inclusion: 2% WW today, 10% by 2030



Innovation Momentum 2023: Global Top 100 2nd year in a row



Companies impacting employability – 5'000 opps for youth by 2030



2nd in the world & 1st in our industry to achieve Living Wage certification



Top 1% of 85,000+ companies WW Score: 88/100



104 Global Reporting Initiative (GRI) indicators + 47 ESG goals + 100% independently audited

Main 2025 Corporate Targets

SUSTAINABLE BUSINESS

#1

in Conscious Perfumery
in Diet Transformation
in Renewable Ingredients

STRATEGIC PILLARS



Acting on
Climate
Change



Embracing
Nature



Caring
about
People

TARGETS

Carbon Neutral
IN OUR DIRECT OPERATIONS

-8%
GHG EMISSIONS SCOPE 3 VS. 2021

100%
UEBT¹ VALIDATED BIODIVERSITY STRATEGY

100%
ABS² DUE DILIGENCE SYSTEM EXTERNALLY VERIFIED

100%
OF EMPLOYEES TRAINED ON BIAS AND BELONGING PRINCIPLES

55%
OF SENIOR LEADERS ARE DIVERSE³

100%
PLASTIC PACKAGING FULLY RECYCLABLE OR REUSABLE

Zero
WASTE TO LANDFILL

High vitality of R&D Pipeline
DECREASING PRESSURE ON THREATENED NATURAL RESOURCES

OPERATE WITH **Green Chemistry Principles**

Safety
ACHIEVING A TOTAL RECORDABLE CASE RATE BELOW 0.20

NO
ETHNIC PAY GAP AND ENGAGEMENT GAP

DRIVERS



IMPACTFUL SCIENCE



RESPONSIBLE SOURCING



BUSINESS ETHICS

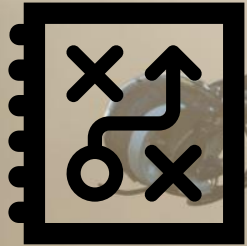


DIGITAL ACCELERATION

1. Union for Ethical BioTrade.
2. Access and Benefit Sharing.
3. Members identifying as female and/or ethnically diverse. Senior Leaders are Executives, Senior Presidents, selected Vice Presidents, Senior Directors and Creators that are members of the Senior Leadership Team.



Corporate Goals



Policies and Metrics

Waste Vendors

Cross Functional Focus Team

Employee Engagement

Leadership support

Procurement

Celebrate successes then focus on the next target

FOCUS ON BIG IMPACT - MANUFACTURING

RECYCLING ETHANOL

- Our site in **Plainsboro, New Jersey**, reduce its hazardous waste by sending an ethanol containing waste stream for reclamation
- <10 years and on average 20,000 and 30,000 gallons are sent for reclaim each year
- Ethanol sold to refineries for use as a gasoline additive
- Collaboration with hazardous waste hauler – evaluating waste streams and alternative waste options

FOCUS ON BIG IMPACT - MANUFACTURING

HYDRO BLEND PROJECT

Launched in 2019 at our manufacturing site in **Newark, New Jersey**

- Most of this site's waste streams come from Hedione® and Habanolide® processes, two of the largest volume molecules we produce at this facility
- Reduced the organic waste by 24% (225,000 gallons of waste/year)
 - Future options to expand for up to 40% of the site's waste
- Project developed in collaboration with hazardous waste hauler – evaluating waste streams and alternative waste options

FOCUS ON GOALS

ZERO-WASTE TO LANDFILL all locations by 2025*

Recycle streams:

- Wooden Pallets
- Empty Drums & Containers from production (all sizes, plastic & steel)
- Solvents (ethanol) for reclaim
- Paper and Cardboard
- Electronics & Batteries (most types)
- Florescent Light Bulbs
- Glass Bottles & Aluminum Cans
- Some construction and maintenance debris

TRANSLATING GOALS INTO ACTIONS

A toolkit for achieving the
T-25 GWS Sustainability Goals
and supporting the
Firmenich ESG 2030 Ambitions

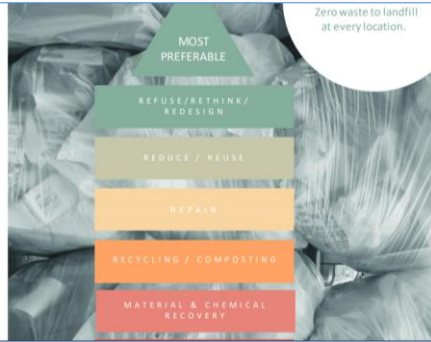
**GWS
GREEN
GUIDE**

Implementation strategies and
checklists include a focus on waste
reduction, recycling and reuse

WASTE MANAGEMENT

Waste Management includes any activity from production to final treatment of all type of waste (the collection, sorting, recycling, transport, and disposal).
The key to good waste management begins with evaluating processes that generate waste. Analysis of the daily decisions that contribute to waste generation is critical to achieving zero waste.

Less waste cuts risk, cost, and contributes to the zero-waste mentality. GWS invites each workplace manager to shift the waste management mindset to a reusable or raw material commodity to determine the best management option. Incorporate Reuse, and Recycle.



RECYCLING

Each affiliate, should have a recycling program to reduce the amount of waste for treatment and disposal. Where avoiding waste generation is not possible, reuse or recycling is the next management option. Focus on reuse opportunities and move toward considering waste as a resource.

WASTE MANAGEMENT CONSIDERATIONS:

- Biodegradable and organic waste can be composted to produce soil fertilizers that enhance soil quality
- Electronics can be re-allocated or donated. End of life electronics contain many precious metals that are easily recycled
- Centralized waste employee awareness
- Reusable packaging waste



Single-use plastics

Single-use plastics are used once, or for a short period of time, before being thrown away, and have a growing impact on the environment and our health. GWS has eliminated single use plastics at our sites to reduce the volume and impact of plastic products on the environment.

GWS approach

The GWS approach is to reduce, reuse, recycle all plastics and eliminate all single use plastics. Replacement options include reusable, compostable and recyclable alternatives.

SINGLE USE PLASTICS

GWS T25 GOAL:

Eliminate single-use plastics in all canteens / cafeterias, receptions spaces, and labs

OFFICE SUPPLIES

Office supplies should be made from recycled content wherever possible, with a focus on paper, writing and printing. GWS suggests:

- ✓ **Certified paper**
Purchase 100% of office paper from certified sources
- ✓ **Recycled & Refillable Supplies**
Choose supplies that are designed to last, are refillable and made from recycled content
- ✓ **Centralized Procurement**
Centrally located to avoid inventory

A sustainable workspace that aims to reduce the carbon footprint in the environment incorporates eco-friendly office supplies.

GWS T25 GOAL:

Purchase 100% of office paper and office consumables from certified sources or recycled material

- ✓ **Printer Ink**
Purchase remanufactured ink and toner cartridge
- ✓ **Strategic Ordering**
Consolidate orders to minimize shipping costs and support the use of reusable packaging

MATERIALS & RESOURCES CONSTRUCTION PROJECTS

The choice of building materials, can have significant contribution to the overall impact of projects and building design. Concrete, steel and Aluminum are responsible for 23% of total global emissions. *

Many construction and demolition materials are highly reusable. Investigate the use of products that have environmentally, economically, and socially preferable life-cycle impacts.

- Align projects with green building certifications
- Opt for Low-Carbon or recycled content building materials
- Develop a waste management plan that incorporates repurposing resources within the project
- Maximize recovery of resources by segregating waste materials for beneficial reuse
- Look for opportunities to harvest energy and water from other systems

Incorporate Recycling concepts through all aspects of construction activities

OFFICE & LAB FURNITURE

Cradle to cradle (C2C) design approach creates products in which all the materials used are safe, beneficial, and designed to biodegrade naturally or be fully recycled.

When purchasing office furniture or refurbishing spaces, consider the following options:

- Reuse surplus office furniture from within Firmenich
- Purchase quality used office furniture
- Purchase furniture that contains recycled content materials
- Purchase furniture that is designed for disassembly and can be recycled or reused through the manufacturer
- Purchase certified C2C furniture

Consideration to the full life cycle of the products purchased affects the long-term impact of our operations.

GWS T25 GOAL:

Incorporate Cradle-to-Cradle recycling furniture concepts for three (3) new workplace projects

CHECKLIST EXAMPLE

Firmenich Facilities Management Operational Best Practices Checklist

Purpose: Ensure that site-level waste is managed in line with Firmenich's 100% landfill diversion goal

Building Address: FIRINC - Plainsboro
Facilities Manager:

Waste Reduction Checklist							
ID	Category	Sub-Category	Priority	Applicability	Description	Implemented	Comments
FM - WST 01	Material streams	Compost	High	Yes	Organics and/or biodegradable waste is separated and composted.	Fully Implemented	Discussions are ongoing - looking at onsite composting at Firmenich and also considering offsite biodigestation at Trenton XX collaboration with Princeton Medical center
FM - WST 02	Material streams	Recycling	High	Yes	Paper, cardboard, aluminum and plastics are separated and recycled.	Fully Implemented	Additional segregation of plastics would improve the overall performance
FM - WST 03	Material streams	E-Waste	High	Yes	Electronic waste is separated and recycled.	Fully Implemented	Program managed by IS
FM - WST 04	Material streams	Hazardous Waste	High	Yes	Hazardous waste is collected and disposed of separately in compliance with all applicable regulations.	Fully Implemented	
FM - WST 05	Material streams	Trash	Low	Yes	The waste hauler contract prioritizes waste-to-energy facilities over incinerators. Disposal of waste at landfills for the final destination is avoided. (those materials which are not recyclable, compostable or hazardous).	Fully Implemented	
FM - WST 07	Material streams	Construction and Demolition	High	No	100% of construction and demolition waste, by weight, is recycled in the following waste streams: metals, wood, gypsum drywall (unpainted), cardboard and paper, hazardous waste, and landscaping debris & soil.	Partially Implemented	
FM - WST 08	Tracking	Waste Tickets	High	Yes	Office diversion rate is requested and tracked by the waste hauler in the form of monthly reports and tickets.		
FM - WST 09	Tracking	Waste Audit	High		A third party is contracted to conduct a waste audit of all material streams on an annual basis.		
FM - WST 10	Policy	Planning	High		Facility management team meets internally or with building occupants to establish a plan for improving year over year diversion rate.		

DRAFT

EMPLOYEE ENGAGEMENT

United Nations – Global Recycling Day

- Household e-waste collection events at sites around the globe
- NJ – 2 locations – collaborated with e-waste hauler
- Minimal cost (collection bins and transportation)



12 | for good, naturally



PARTNERING INTERNALLY & EXTERNALLY

- Focus on Lab waste
 - Single Use Plastics / Lab consumables
 - Product packaging reduction
- Focus on municipal waste reduction - IFM
 - Composting
 - Refocus on single use plastic elimination
- Collaboration with waste haulers – evaluating waste streams and alternative waste options
- Collaboration with Suppliers – especially lab consumables
- Collaboration with community – finding solutions to common waste streams

QUESTIONS?

Clare Lumkong

Director, Sustainability, GWS Organization

Clare.Lumkong@Firmenich.com



THANK YOU!



INNOVATIVE CRAFTSMANSHIP IN FRAGRANCES, TASTE AND BEYOND

FAMILY OWNED, FOUNDED IN GENEVA, 1895

