



UAE ALLIANCE FOR CLIMATE ACTION  
MEMBER SPOTLIGHT

# JOHNSON CONTROLS INTERNATIONAL

Zero Waste to  
Landfill Initiative



# ABOUT JOHNSON CONTROLS INTERNATIONAL (JCI)

JCI is a world leader in smart buildings, creating safe, healthy and sustainable spaces.

For nearly 140 years, JCI has made buildings better and is transforming them again with their award-winning digital technologies and services.

Supported by a team of more than 100,000 dedicated employees working across 150 countries, JCI is helping customers achieve their sustainability goals and power their mission.<sup>1</sup>

**Smart**  
Creating buildings that think and respond

**Healthy**  
Nurturing wellness with healthy buildings

**Sustainable**  
Accelerating the journey to net zero

## SUSTAINABILITY AT JCI

In 2021, JCI announced a new set of ambitious sustainability commitments including

- Set science-based targets consistent with the most ambitious 1.5°C IPCC scenario
- Reduce JCI's operational emissions by 55% and reduce customers' emissions by 16% before 2030
- Achieve net zero Scope 1 & 2 carbon emissions before 2040, in line with the UNFCCC Race to Zero and Business Ambition for 1.5°C criteria.<sup>2</sup>

## JCI'S VOLUNTARY COMMITMENTS ON SUSTAINABILITY<sup>3</sup>



Designed using information from source: JCI 2023 Sustainability Report

## PROGRESS TOWARDS JCI'S COMMITMENTS ON CLIMATE<sup>3, 4</sup>

| Goals (2017 baseline)                                                         | Progress by the end of 2023                                                                                                                       | 0 | 52.5 | 100 |
|-------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---|------|-----|
| 25 percent reduction in GHG Intensity, Scope 1 & 2 by 2025                    | 52.5 percent reduction in emissions intensity                                                                                                     | 0 | 52.5 | 100 |
| Reduce water use by 10 percent at water-stressed locations by 2025            | 18.4 percent reduction                                                                                                                            | 0 | 18.4 | 100 |
| 25 percent of manufacturing locations landfill free by 2025                   | Achieved this metric two years early: 23 manufacturing locations or 25 percent of their total manufacturing locations recognized as zero landfill | 0 | 25   | 100 |
| Scope 1 and 2 emissions: 55 percent absolute reduction by 2030                | 43.8 percent absolute reduction                                                                                                                   | 0 | 43.8 | 100 |
| Scope 3 emissions: 16 percent reduction from the use of sold products by 2030 | 27.1 percent absolute reduction                                                                                                                   | 0 | 27.1 | 100 |
| 100 percent renewable electricity usage globally by 2040                      | 42.1 percent electricity met or matched by renewables                                                                                             | 0 | 42.1 | 100 |

Designed using information from source: JCI 2023 Sustainability Report and JCI 2024 Sustainability Report

# MAKING THE BUSINESS CASE

## ZERO WASTE TO LANDFILL INITIATIVE

### GLOBAL APPROACH:

The primary driver of waste for JCI is waste generated during the manufacturing of building technology equipment.

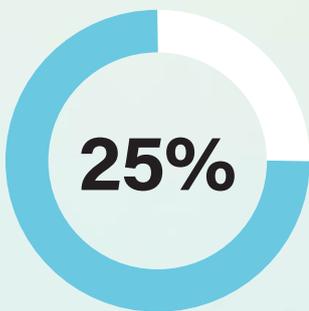
To be recognized as zero landfill, a site must participate in an independent review and demonstrate to the senior Environmental Health and Safety (EHS) Leadership team that 100% of the waste generated is either recycled, reused or converted to energy.

Other non-manufacturing sites have also taken on the ambitious objective of becoming landfill-free, with a total of 29 locations that are landfill-free throughout the company and every location is encouraged to eliminate the disposal of waste sent to landfill.<sup>3</sup>

### TAKING GLOBAL APPROACH TO LOCAL LEVEL-BUSINESS CASE:

"Zero Waste to Landfill" initiative has been established in the JCI manufacturing facility, contributing towards sustainability goals by lowering Net Carbon emissions.

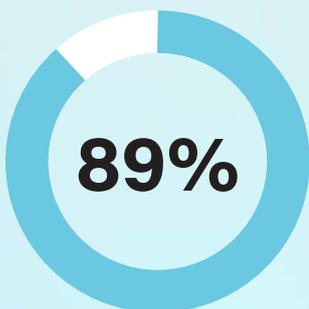
This case study aims to show their journey from 2021 to date towards this goal. JCI has achieved positive progress towards their goal but there are a few barriers to their progress that JCI is yet trying to overcome.



Their goal is that 25% of their manufacturing locations will be landfill-free by 2025.



In 2023, 23 manufacturing locations, representing 25% of their total manufacturing locations, had a 100% diversion rate and were recognized as zero landfill.



Their manufacturing facilities globally have an overall diversion rate of 89%.<sup>3, 4</sup>

# THE DECARBONIZATION CHALLENGE

## REDUCING, DIVERTING AND SEGREGATING WASTE

### TOP 3 CHALLENGES

1

#### WASTE REDUCTION AND EMPLOYEE ENGAGEMENT

Reducing waste generated and ensuring buy-in of employees into the "Zero Waste to Landfill" goal.

2

#### DIVERTING WASTE FROM LANDFILLS AND SEGREGATION

Diverting waste from landfills to recycling, reuse or repurposing; increasing segregation at source practices.

3

#### CONTRACTING RECYCLING SERVICE PROVIDERS

Establishing contracts with additional service providers for recycling of more types of material.

Achieving the "Zero Waste to Landfill" goal would help JCI to:

- Eliminate landfill-bound waste generation at their facility thus enhancing their contribution towards sustainability & reduce cost
- Achieve increased waste diversion rate, reduction in the associated CO<sub>2</sub>e emissions
- Align with JCI Zero Harm initiative to champion zero waste to landfill strategies.

At the Manufacturing Facility, the most amount of waste generated in order of magnitude are:

- **Wood** – Pallets and Packaging
- **Metal** – Fabrication Material and Waste Metal
- **Paper & Cardboard**
- **General Waste** – Food, Packaging, Sweep Waste.

# SOLUTIONS

## DETAILED WASTE ANALYSIS FOR GENERATION/SEGREGATION/RECYCLING AND CREATING AWARENESS ON THE REDUCE, REUSE, RECYCLE (3R) PRINCIPLES

Till 2021, JCI had provided separate skips for

- Metal Waste
- Packing/Cardboard Waste
- Paint Waste
- Landfill Waste.

After adopting the Zero Waste to Landfill goal, JCI worked with their waste suppliers and provided 5 more skips for further segregation, namely

- Plastic
- Glass
- Aluminum
- Paper
- Wood.

- **Enhanced fabrication testing methods were adopted and the frequency of tests also increased** to reduce metal scrap generated by rejected pieces during quality testing.

- **Color-coded waste skips for segregation** of waste were provided.

- **E-waste handling providers were brought on board** and the IT team dispose all e-waste generated through them only.

- **Wooden pallets that were received from suppliers began to be extensively reused.** Damaged pallets were repaired/refurbished internally and reused within their operations to reduce allocation of pallets and related material to waste.

- **Campaigns on waste segregation and sustainable waste disposal** requirements were conducted.

- **More awareness sessions** conducted by the Environmental Health and Safety (EHS) Team with involvement of senior management at the facility. This further cemented **the importance of the Zero Waste to Landfill goal and the roles the facility workers played to achieve it.**



# OVERVIEW OF GENERATED WASTE AND RECYCLING



**66%**

Reduction in total waste generated.

| Year            | 2021        | 2022       | 2023 (till date) |
|-----------------|-------------|------------|------------------|
| Waste Generated | 227.66 tons | 114.5 tons | 77.16 tons       |



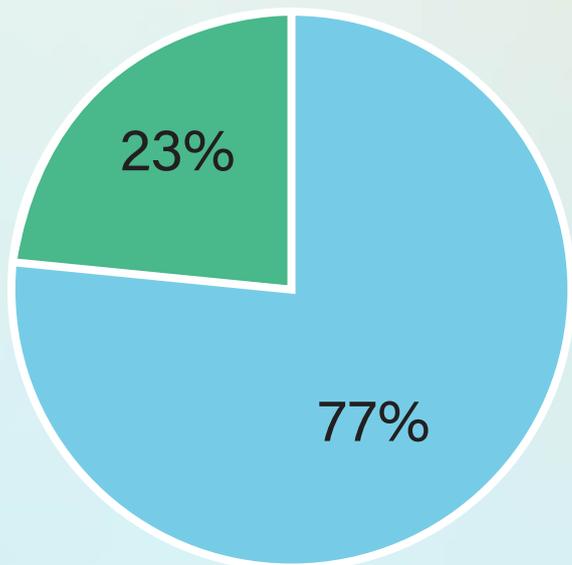
**100%**

of recyclable waste were diverted away from landfills.

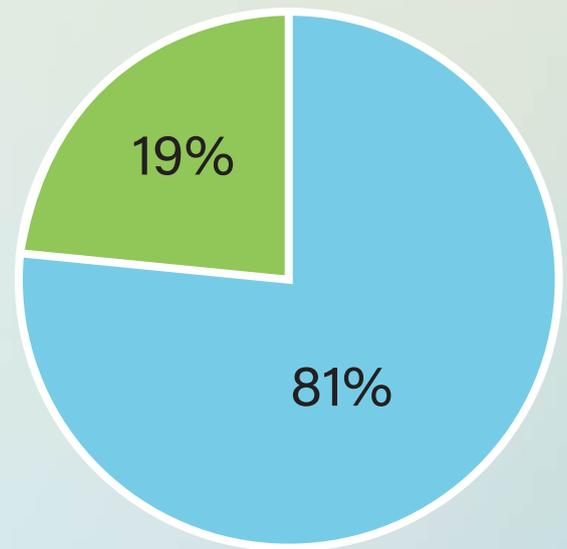


**81%**

In 2023, 81% of waste generated has been recycled till date compared to 67% in 2021.



Landfill vs Recycle in 2022



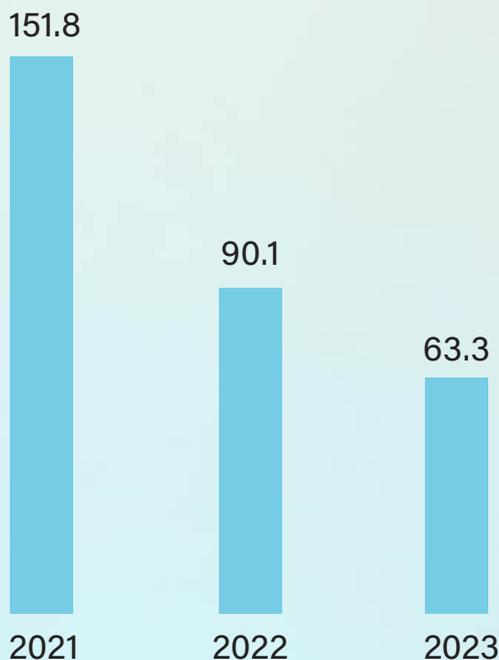
Landfill vs Recycle in 2023 (till date)

# IMPACT OF ZERO WASTE TO LANDFILL INITIATIVE ON EMISSIONS

## LESSONS LEARNED

- While aligning with the Zero Waste to Landfill goal, JCI was apprehensive of how much improvement could actually be made, but after two years of focussed discussions, awareness sessions and close monitoring, JCI has now managed to achieve 100% direction of all recyclable waste away from landfills.
- With an organization wide focus on waste prevention and extensive implementation of recycling practices, a significant potential for reducing greenhouse gas emissions has been offered. It reflects on the waste generation statistics showing a steadily decreasing trend in the actual waste generated from 2021 to 2023.
- The increase in waste recycling has cut the cost of waste disposal and improved the bottom line. Parallels between waste generated and CO2e emissions from recycling can be seen from 2021 through 2023 and the increased recycling rates would aid in further reducing the associated CO2e emissions.

**Total Recyclable Waste in Tons**



**CO2e Savings in Tons**



# NEXT STEPS FOR THE FUTURE

## LOOKING AHEAD TO THE FUTURE

- The waste that JCI send to landfill now mainly consists of food waste and sweep waste.
- JCI is looking to explore further options offered by waste disposal/recycling facility providers and options on waste diversion facilities like digesters, incinerators, etc. for food waste/inert waste.
- Implementation of these better practices have helped JCI get as close as possible, with the currently available facilities in the region, to their goal of achieving Zero Waste Diverted to Landfill.
- JCI will strive to maintain this achievement till there is a chance to divert the inert waste to other facilities like digesters or incinerators.
- JCI teams are keenly keeping a watch on improvements with regards to waste diversion in the region and once further options are available, JCI will ensure that it is adopted, and JCI may then achieve their goal.

## Raising ambition



**100%**

Recycling of all generated waste including food waste.



**5%**

Reduction in general waste generated.



**100%**

Maintaining 100% recycling of all recyclable material that JCI has achieved now.

## REFERENCES

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