

DEFINING METRICS THAT MATTER: A SCORECARD APPROACH TO SUSTAINABILITY IN THE BIOTECH & PHARMA INDUSTRY



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Background and Motivation

- Kasai Consulting is a small consulting firm that specializes in providing industrial hygiene, occupational health, safety, and environmental services to companies around San Diego
- The motivation behind my project was to understand what it means to be a sustainable company in the biotech/pharmaceutical industry and what steps should be taken to reduce the environmental footprint of these companies

Research Objectives

- My main objective was to understand the criteria needed to develop a scorecard used to evaluate the sustainability performance of biotech/pharmaceutical companies
- My main research question is: How can we develop a scorecard to evaluate the sustainability of biotech/pharmaceutical companies?

Methodology

- Collected 2024 data on water, gas, electricity, and waste from two anonymized companies as case studies, using Dexcom's report as an industry baseline.
- Normalized all data on a per-employee basis
- Created a sustainability scorecard rating each metric from 1 (most sustainable) to 5 (least sustainable), with Dexcom's values serving as the baseline score of 3

Results

Company X and Y had much higher electricity usage compared to Dexcom

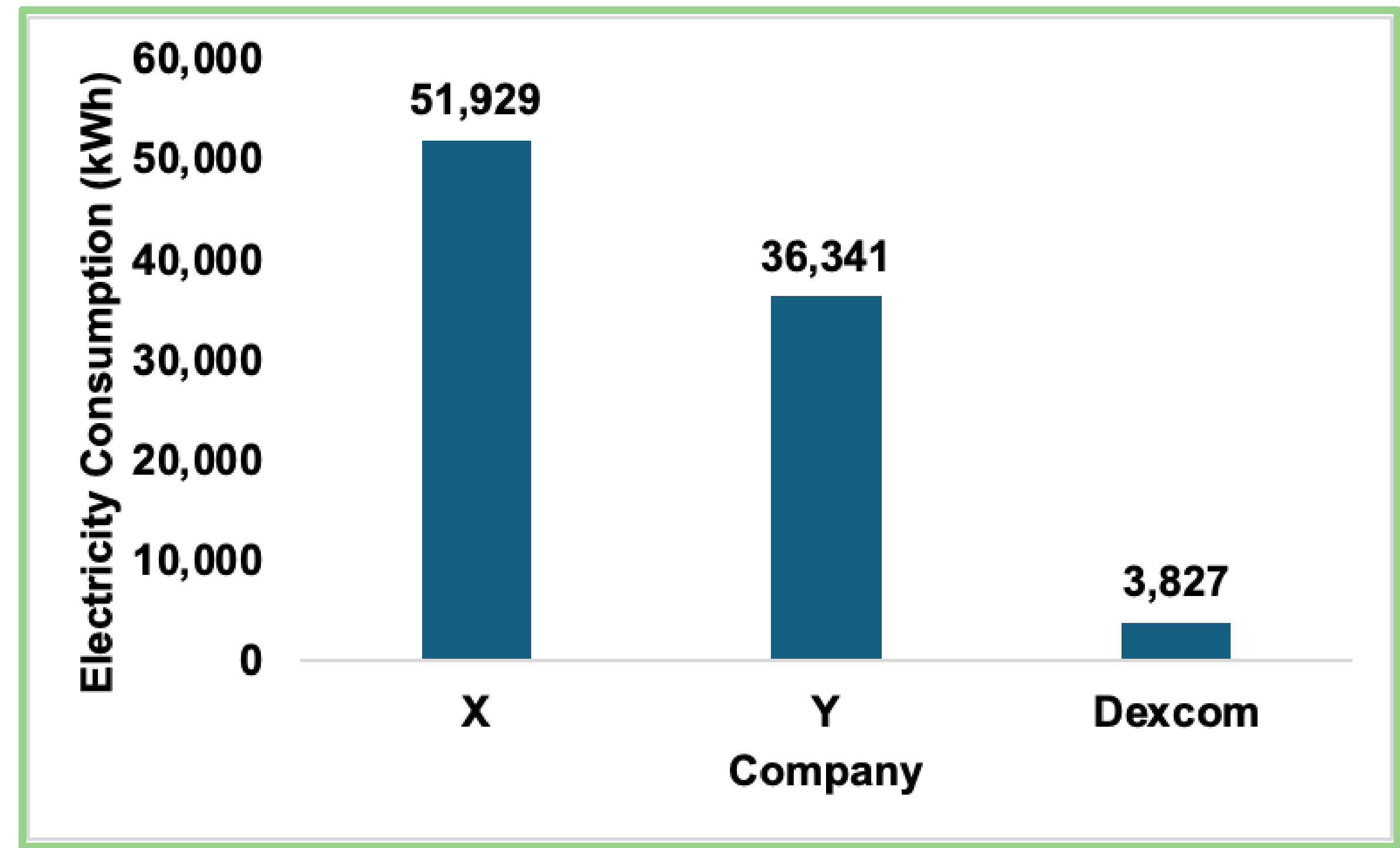


Figure 1. Per-employee electricity use for Company X, Y, and Dexcom

Company X and Y produced much less waste compared to Dexcom

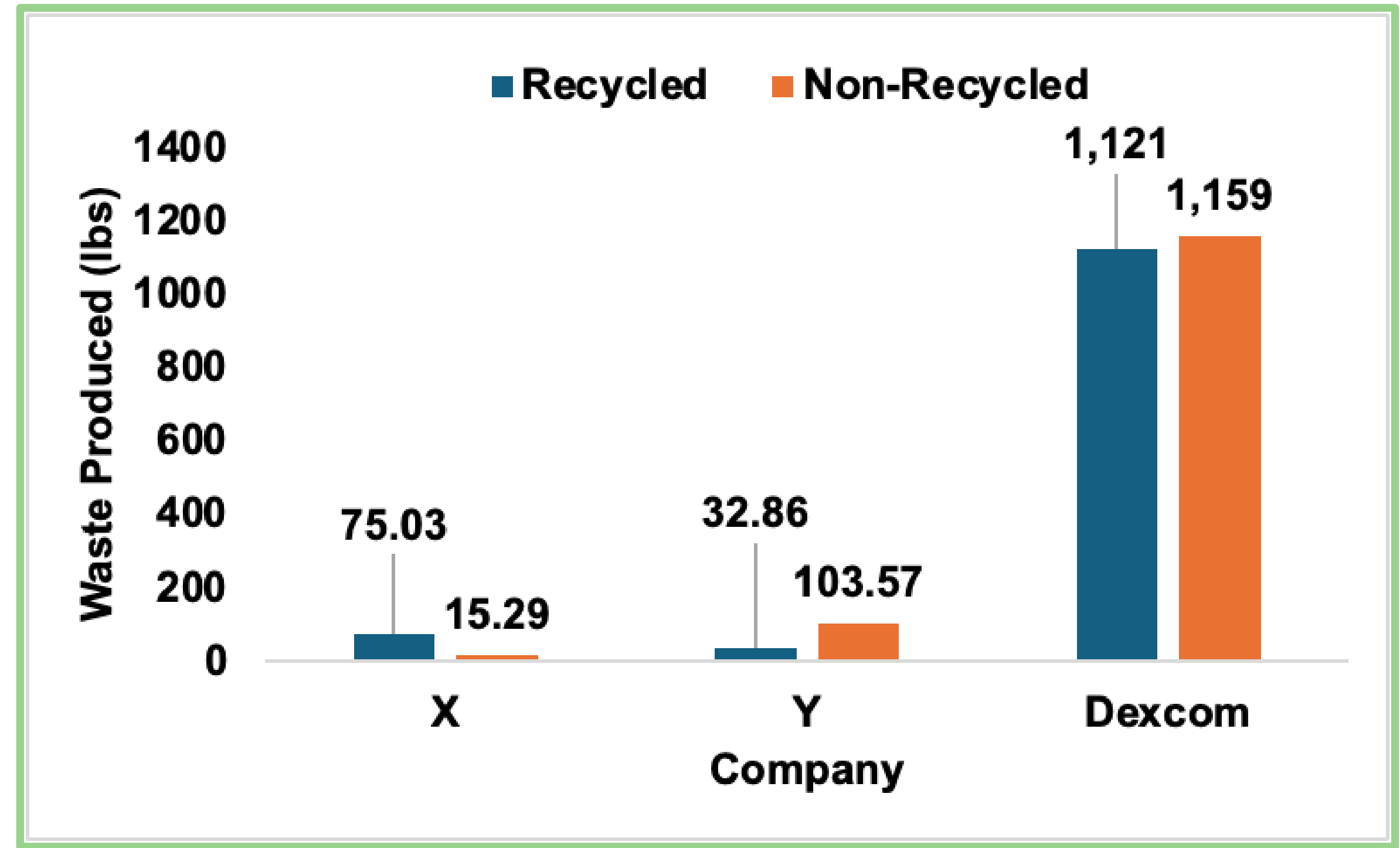


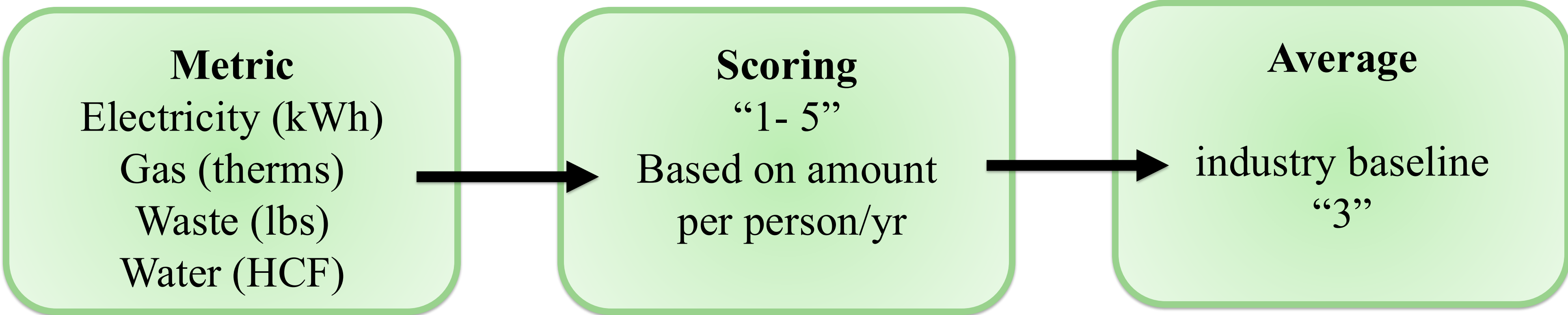
Figure 2. Per-employee waste produced for Company X, Y, and Dexcom

Electricity figure did not account for:

- Differences in facility size and operational square footage
- Variability in the number and type of on-site equipment or machinery
- Presence of energy-intensive research and development activities
- Use of renewable energy sources or on-site generation (e.g., solar panels)

Waste figure did not account for:

- Differences in waste management practices, such as composting, incineration, autoclaving, or reuse
- Absence of data on hazardous versus non-hazardous waste
- No differentiation between types of waste materials (e.g., biological, chemical, plastic, electronic)



Discussion

- This study highlights the need for increased transparency in sustainability reports
- The scorecard offers a scalable framework for identifying strengths and weaknesses, yet results show it may not fully capture environmental impact
- Limitations included small sample size and inconsistent sustainability reporting across companies
- While Dexcom served as a useful baseline for this project, relying on a single company to anchor all scoring may introduce bias.
- Future work should focus on refining scorecard metrics and the development of industry-wide standards

Acknowledgments

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