





The Role of Material Recovery Facilities (MRFs) in the Circular Economy

Illinois Circularity Conference
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Today's
Agenda



Introduction

1. Circularity

2. Technologies

3. MRF Data

4. Possibilities

5. Challenges


Questions/Contact Info

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Our
Story
○○○

GBB is an international solid waste management consulting firm that helps public- and private-sector organizations craft practical, customized and technically sound solutions for complex solid waste management challenges.

Since 1980, GBB has been a trusted resource at the forefront of the industry, creating success stories that integrate smart planning with effective management of solid waste services. Our staff enables our clients to do more with less.



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Our Vision

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We believe in a world where discarded materials are used as resources rather than wasted – for the benefit of communities and the environment.

Communities

We are guided by our principles of quality, value, ethics, and results to help communities of all shapes and sizes.

Environment

We believe effective management of solid waste is an imperative that directly affects our planet- both today and far into the future.

Circular Economy

We see solid waste as a valuable resource that can be creatively managed while protecting our planet and society.

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Our Comprehensive Services

Solid Waste Management Planning

Technical Evaluation & Planning

Curbside Collection & Route Optimization

System Administration & Receivership

Expert Witness

Sustainability, Circular Economy & Disaster Debris Planning

Business & Financial Planning

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Circularity and MRFs

“Like all major transitions in human history, the shift from a linear to a circular economy will be a tumultuous one. It will feature heroes and pioneers, naysayers and obstacles, and moments of victory and doubt. If we persevere, however, we will put our economy back on a path of growth and sustainability. Many years from now, people will look back on it as a revolution.”

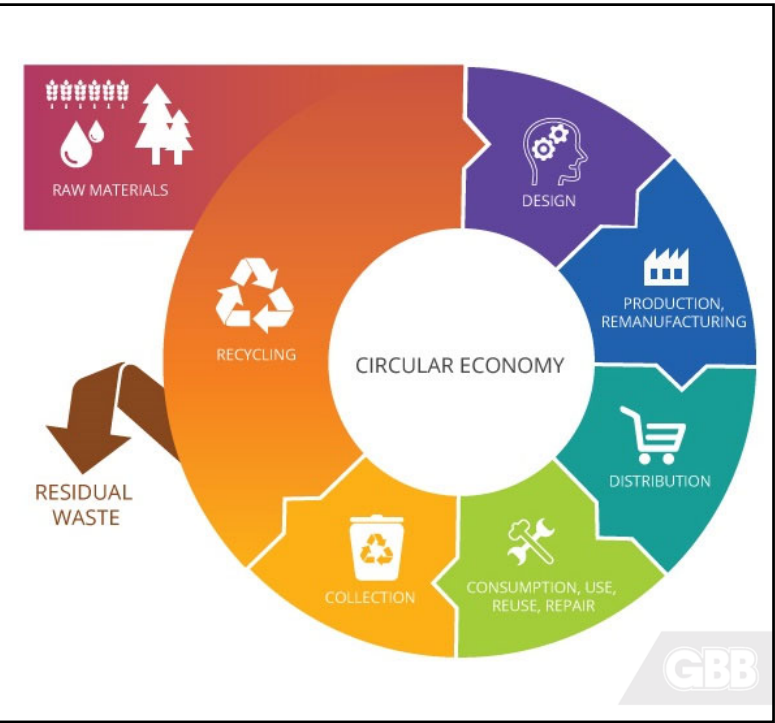
– Frans van Houten (CEO of Philips Healthcare)



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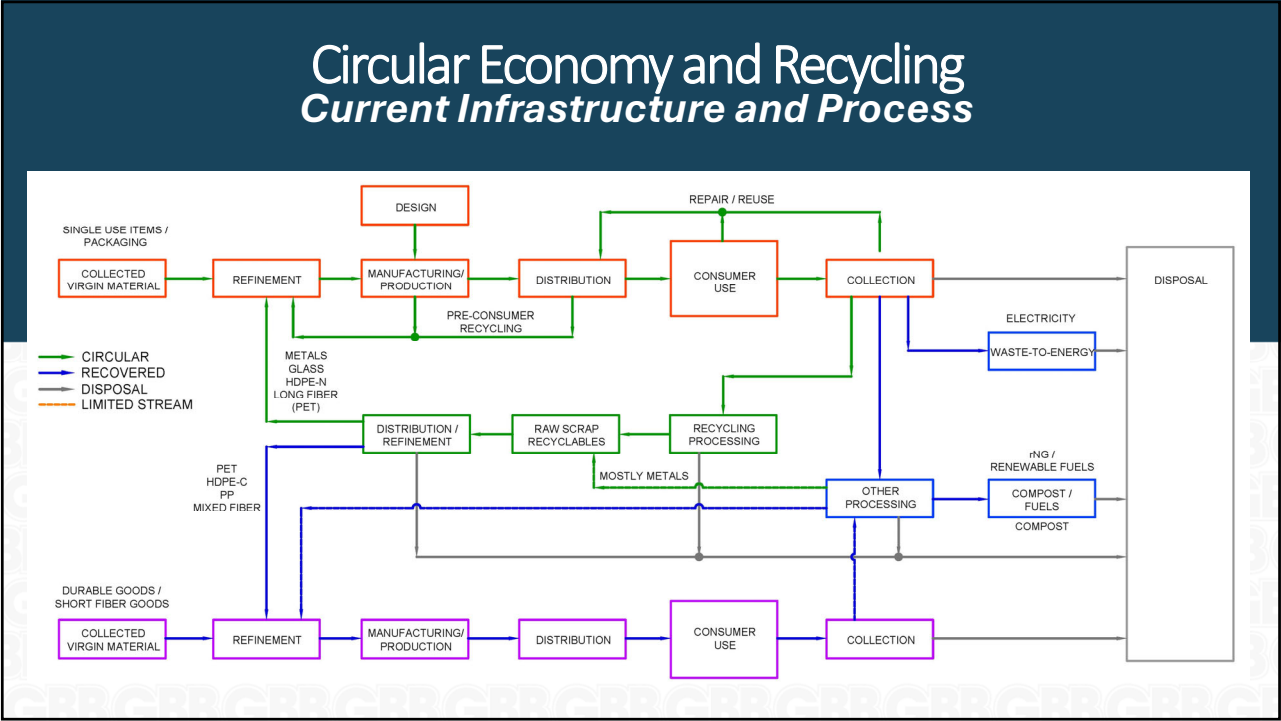
Circular Economy and Recycling

The Idealized Goal

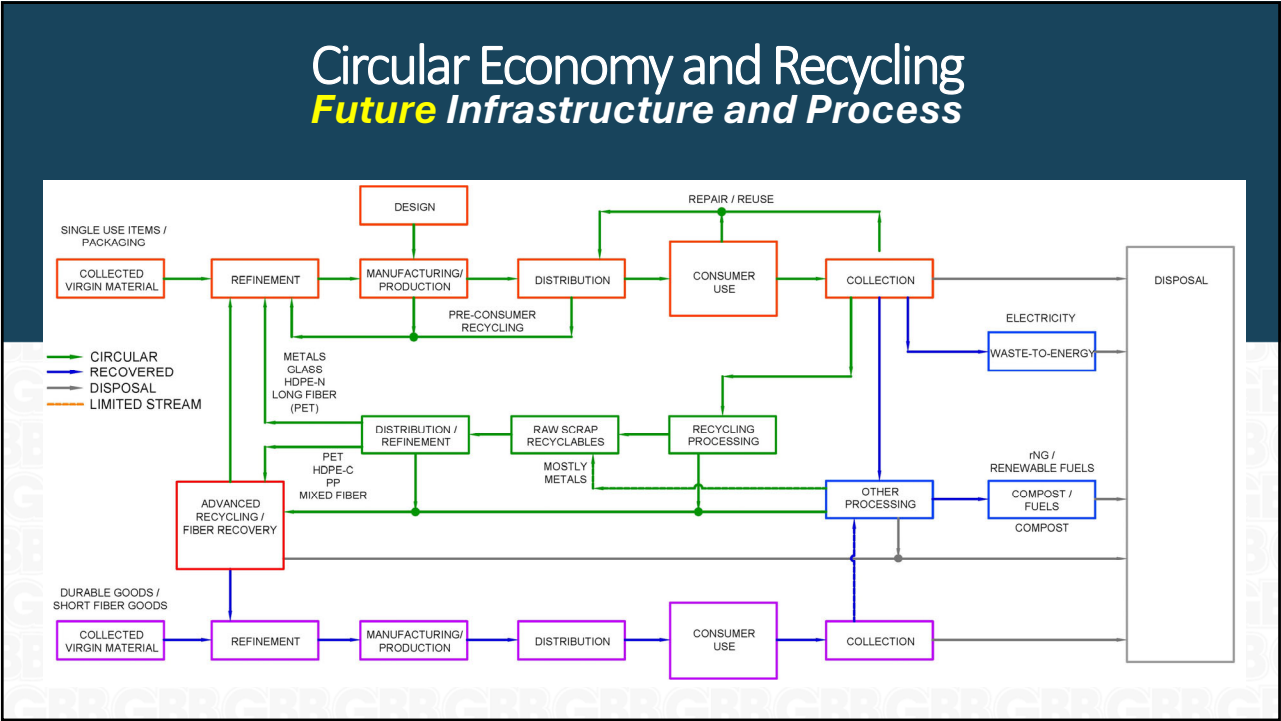


The diagram illustrates the circular economy process as a continuous loop. It begins with 'RAW MATERIALS' (represented by icons of trees and a water drop) leading into 'RECYCLING' (represented by a recycling symbol). This leads to 'COLLECTION' (represented by a trash can icon), which then leads to 'CONSUMPTION, USE, REUSE, REPAIR' (represented by a wrench and screwdriver icon). This leads to 'DISTRIBUTION' (represented by a shopping cart icon), which leads to 'PRODUCTION, REMANUFACTURING' (represented by a factory icon), which leads to 'DESIGN' (represented by a head with a gear icon). The process then loops back to 'RAW MATERIALS'. A large arrow labeled 'RESIDUAL WASTE' points away from the 'COLLECTION' stage. The central circle is labeled 'CIRCULAR ECONOMY'. The GBB logo is in the bottom right corner.

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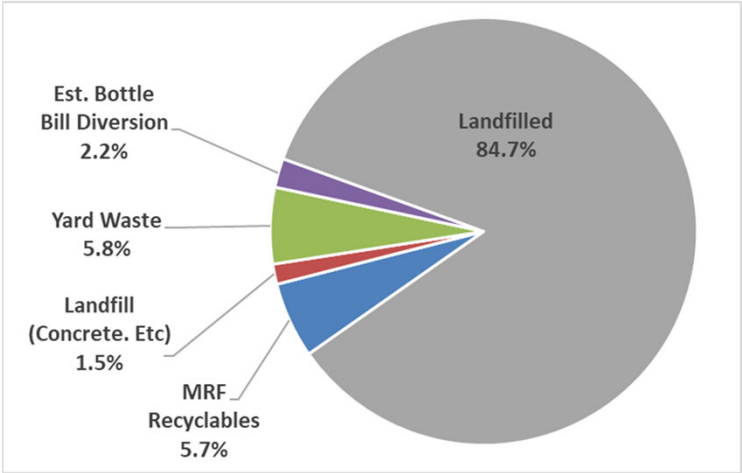
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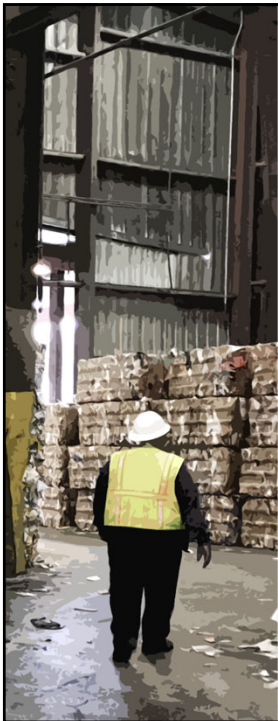
Current Collection and Processing



Source: GBB – Kent County, MI 2021

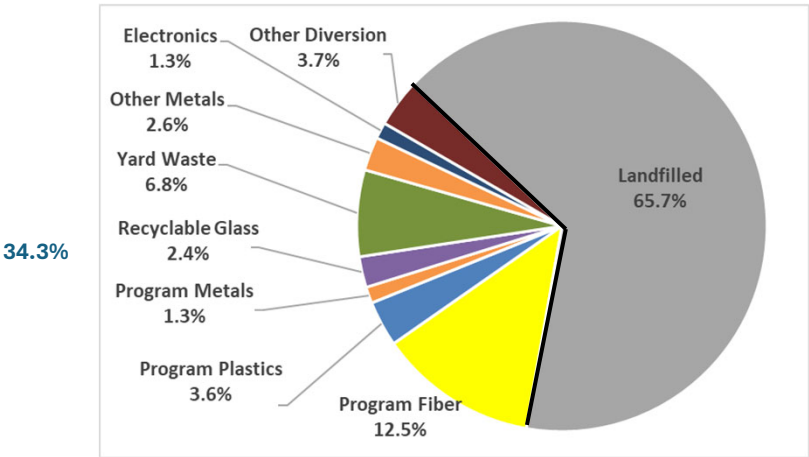


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Ideal Collection and Processing

What is All Program Materials (MRF) Were Recovered



34.3%

Source: GBB – Kent County, MI 2021



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MRF Data

"We are drowning in information but starved for knowledge."

- John Naisbitt (Autor of Megatrends)


A photograph of two men sitting at a table in a meeting. The man on the left, wearing a blue shirt, is gesturing with his hands while speaking. The man on the right, wearing a dark shirt, is listening. On the table are a laptop, a glass of water, and some papers.

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Basic MRF Operating Data

Daily Operating Report

- i. Throughput (Daily Deliveries)
- ii. Commodity Production (tonnage, bale counts)
- iii. Residual (tonnage, disposal or rerun)
- iv. Uptime/Downtime (reasons for downtime)
- v. Labor Utilization (number and location)
- vi. Maintenance (regular, unscheduled, lock-out/tag-out)
- vii. Pictures (feedstock, residual, bales, maintenance)

The GBB logo, consisting of the letters "GBB" in a bold, sans-serif font, with a stylized graphic element to the right.




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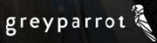

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What we do

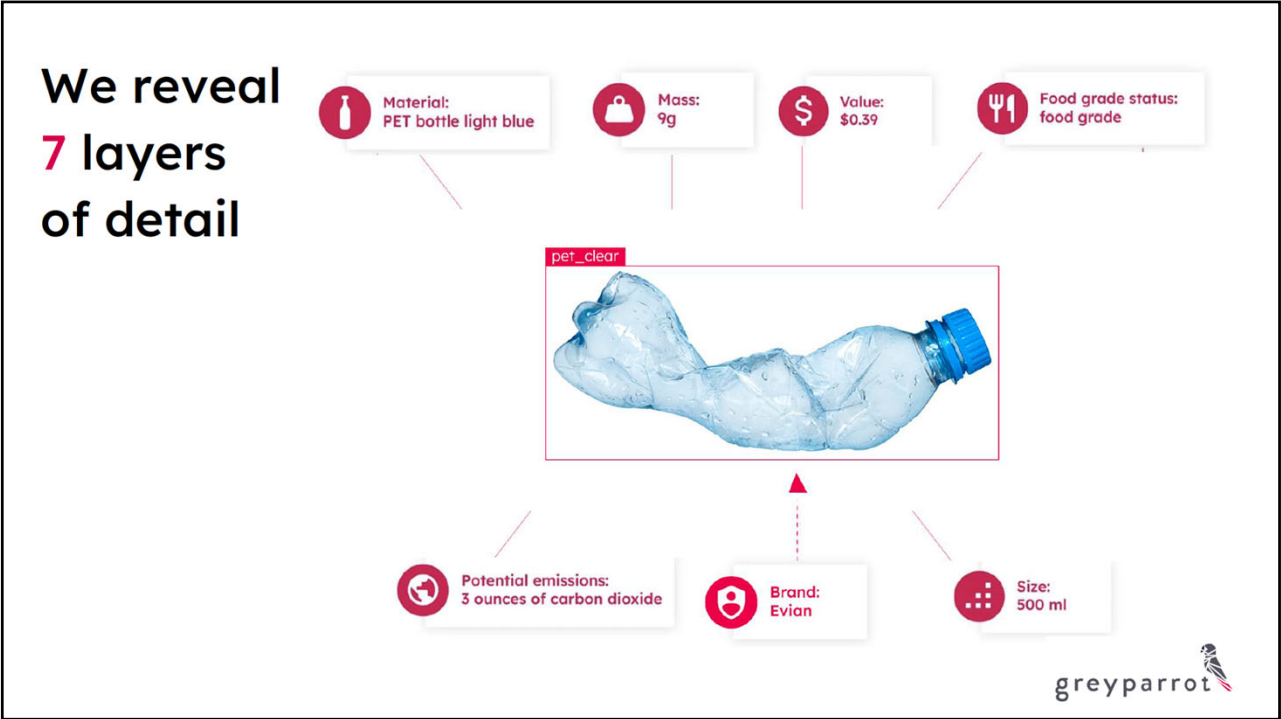
Greyparrot Analyzer is an **AI waste analytics system** that tracks and reports insights on waste flows in recovery facilities



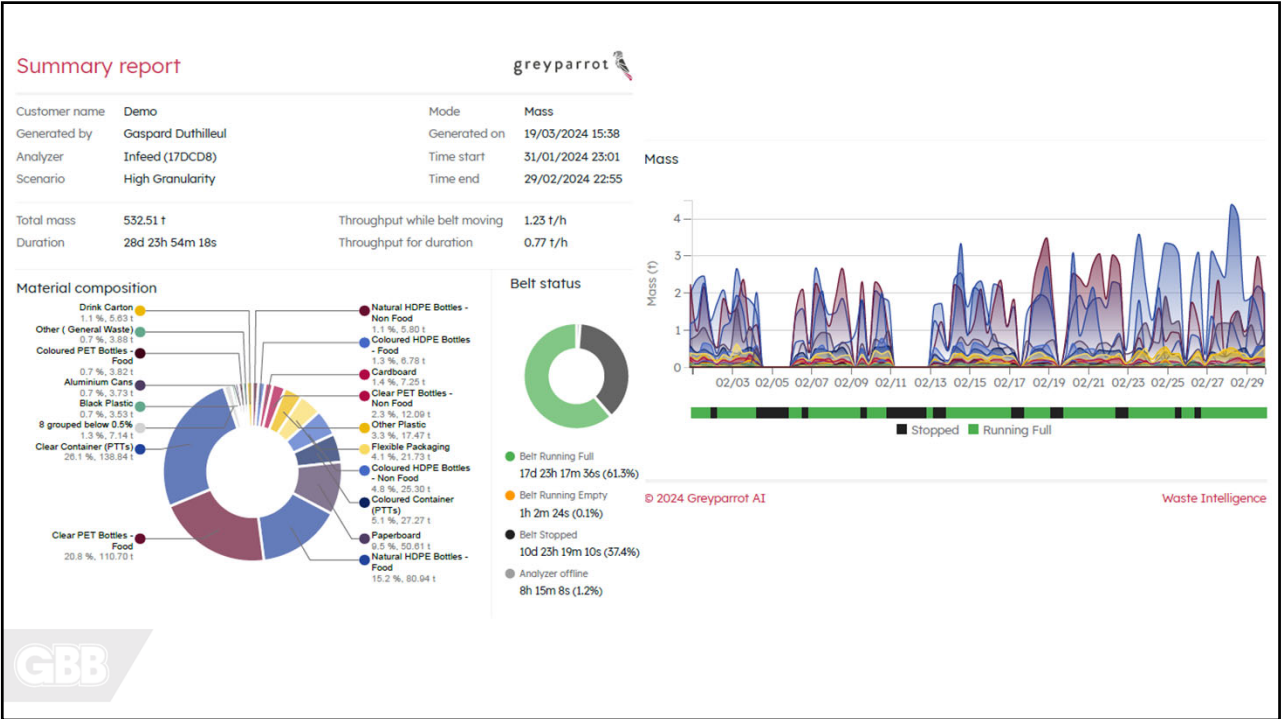
Camera unit AI Integration Dashboard



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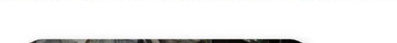
Introduce transparency: Tracking waste packaging

Brand and SKU data are automatically detected with AI


- 1800+ SKUs, around 3m items
 - From international and local brands
 - Up to 30+ SKUs for one single brand
- Flexibility to expand by:
 - Brands
 - Waste streams
 - Geographies


MARS






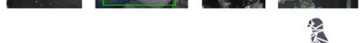
DANONE







COLGATE-PALMOLIVE










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Possibilities

"We cannot solve our problems with the same thinking we used when we created them."

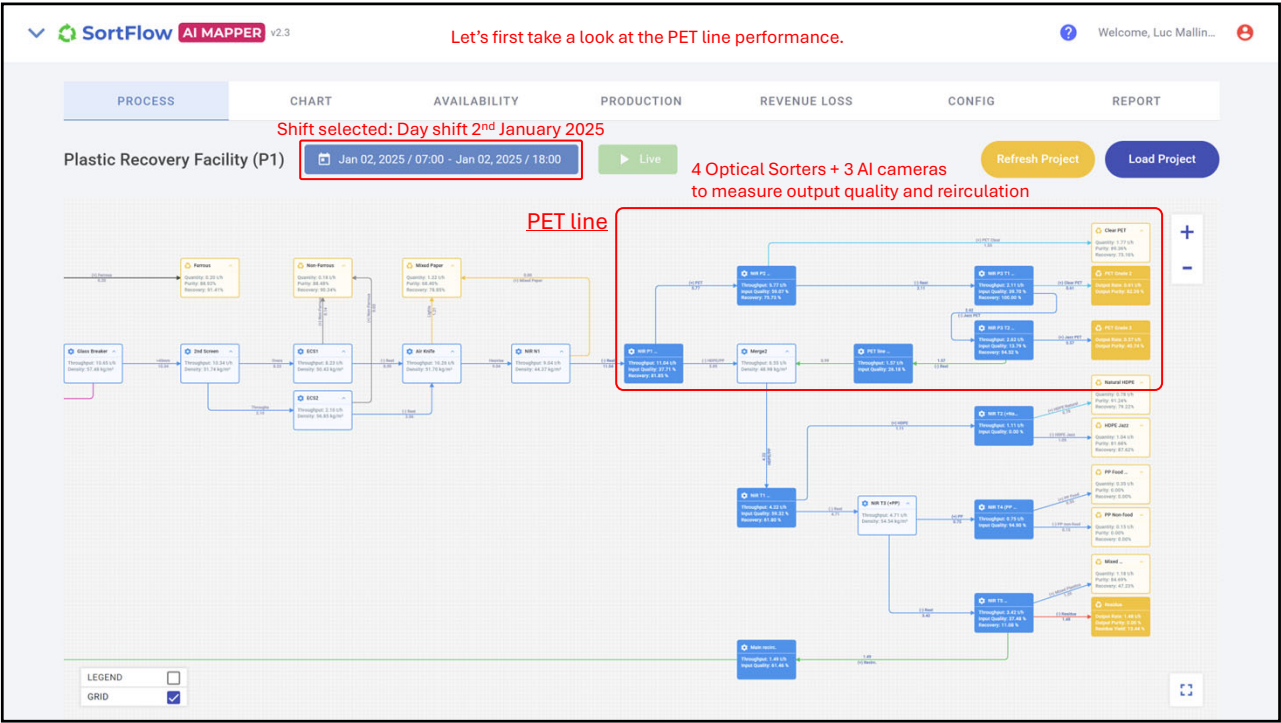
– Albert Einstein



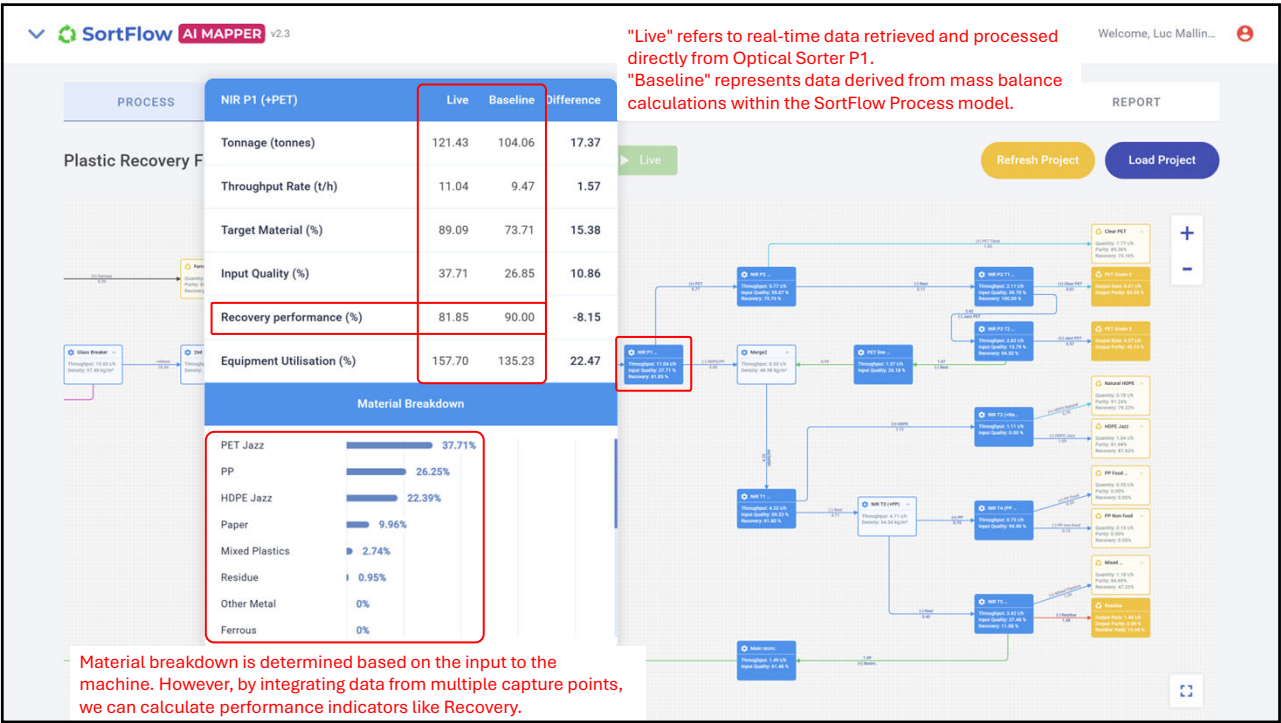
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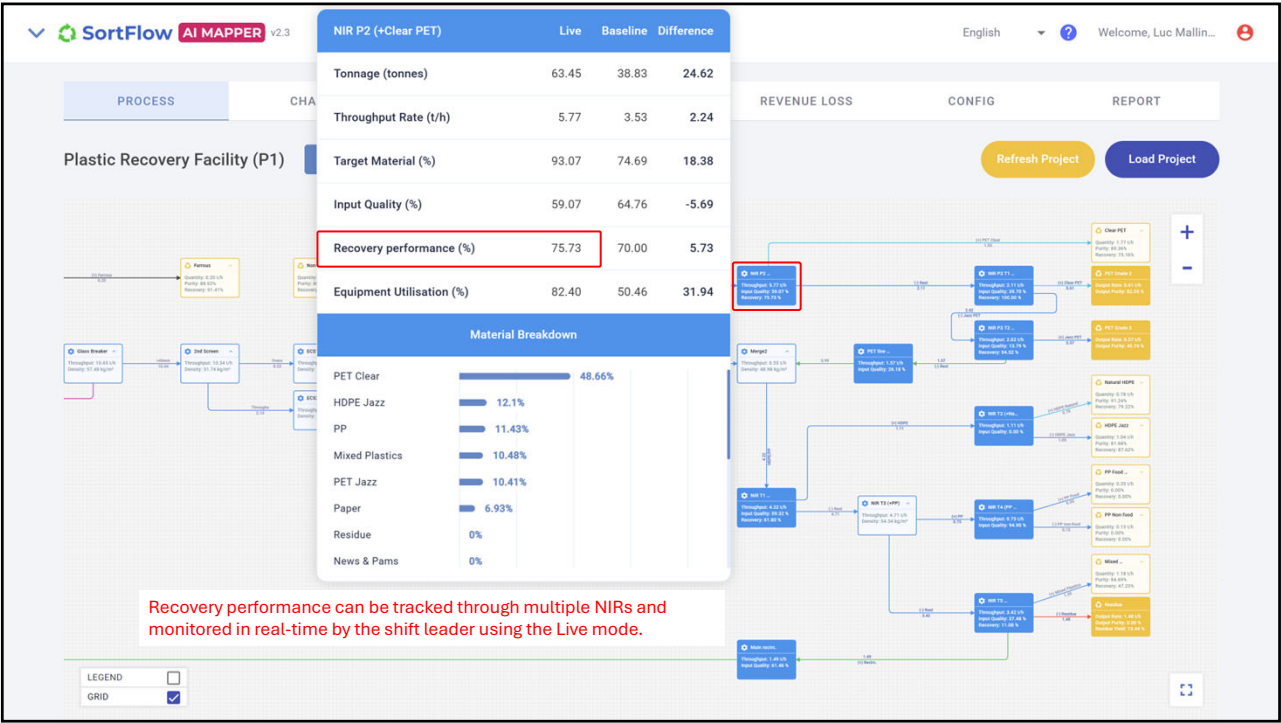
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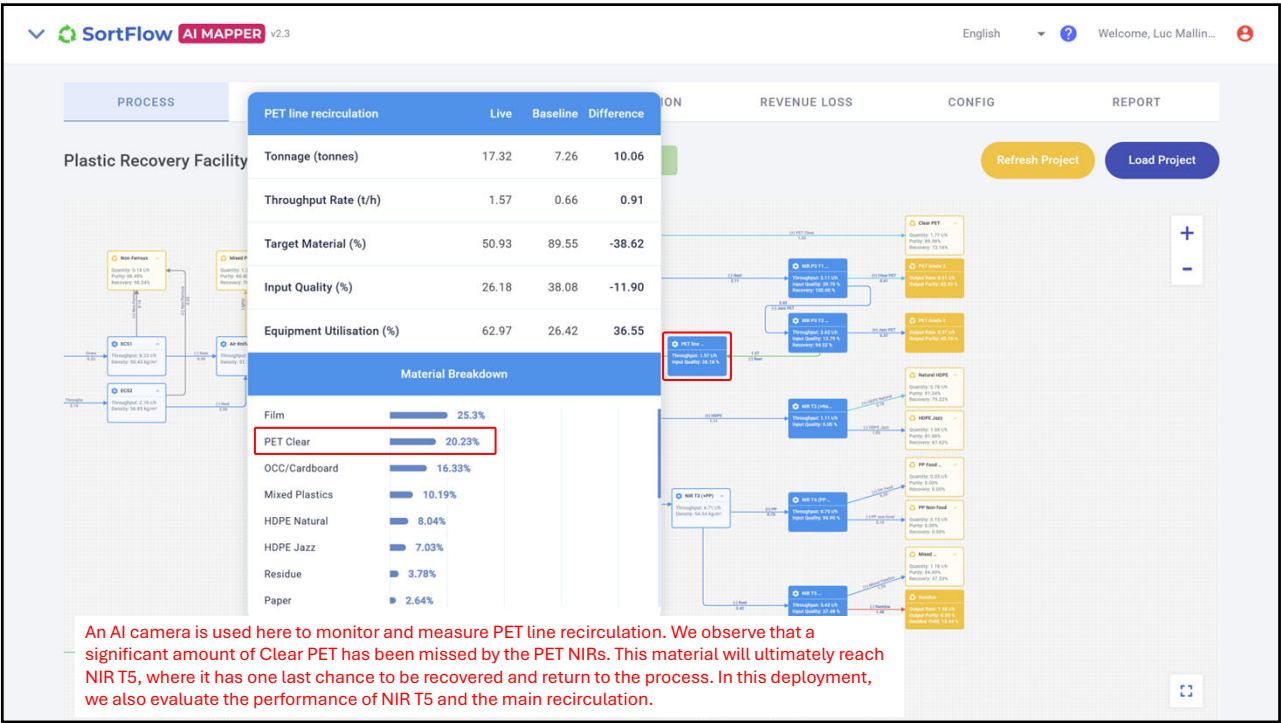
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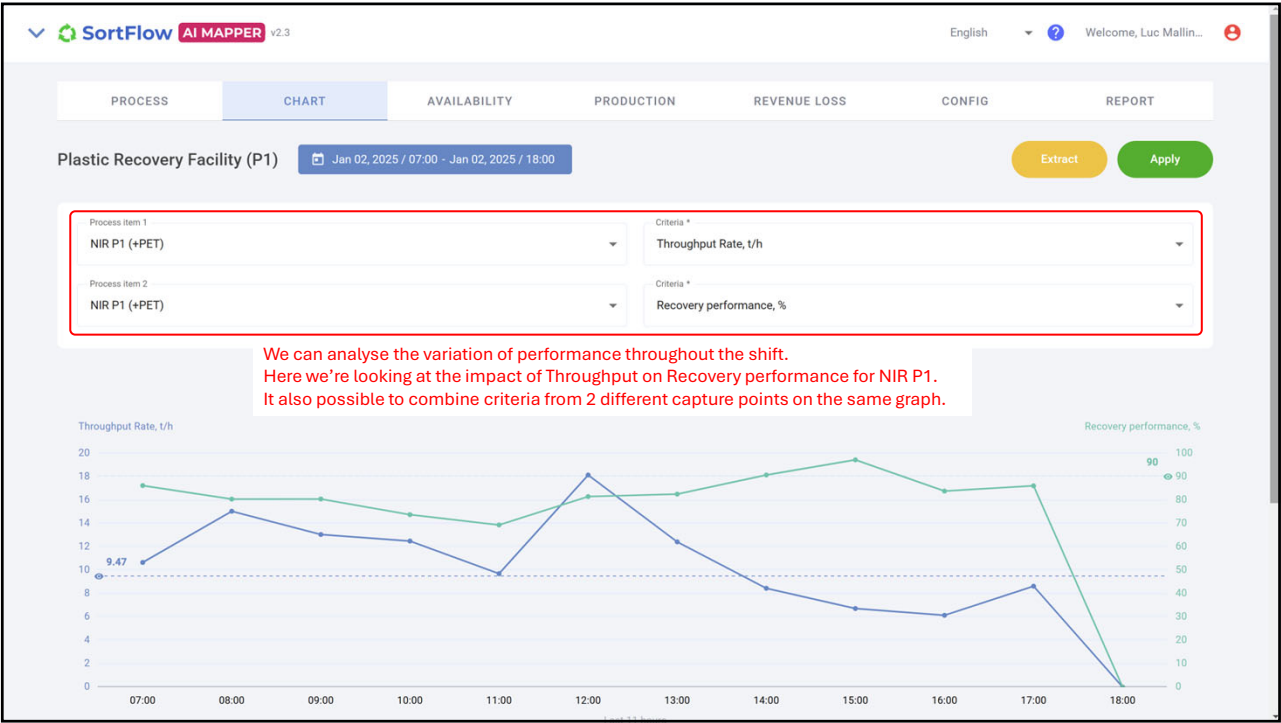
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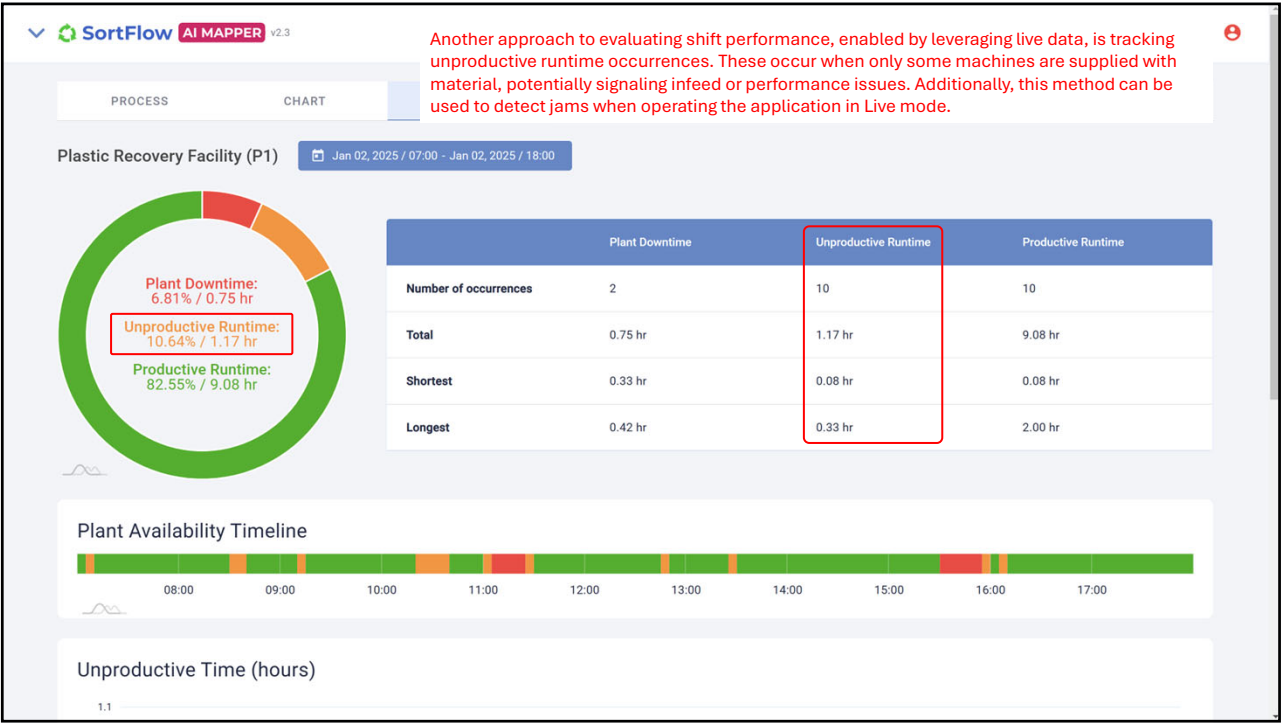
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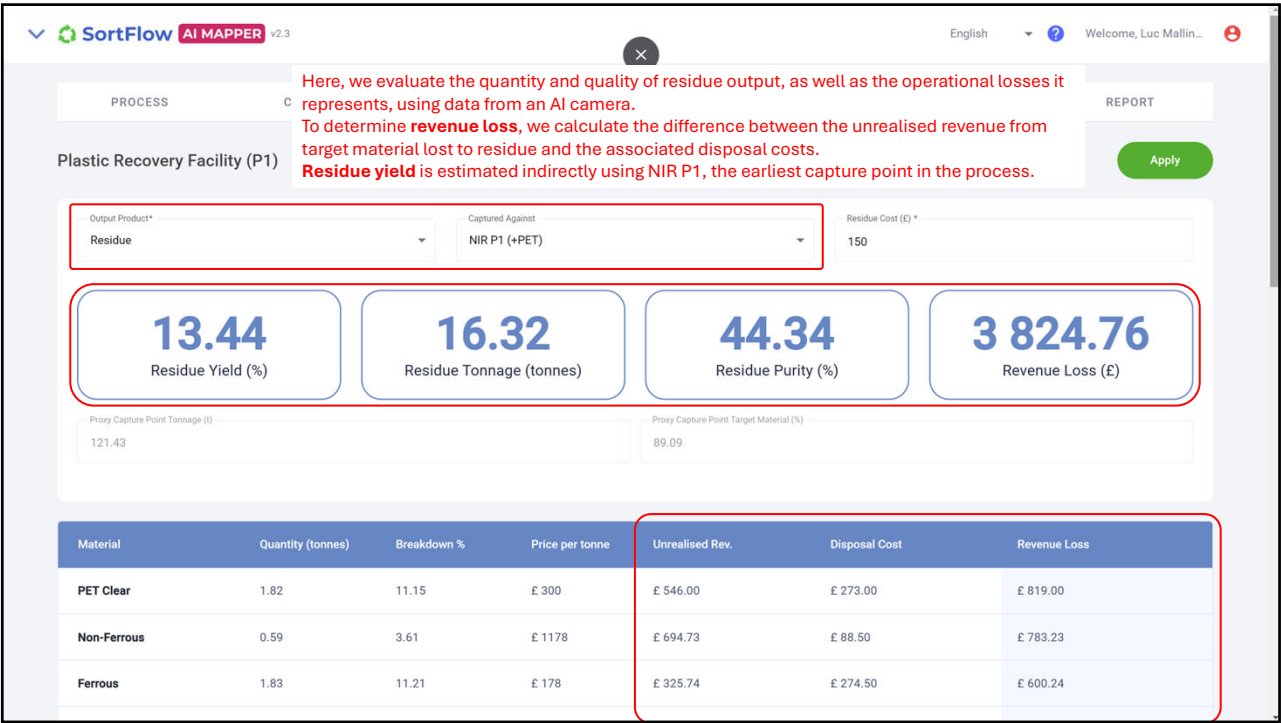
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Challenges

"Often when you think you're at the end of something, you're at the beginning of something else."


— Fred Rogers

A photograph of two men sitting at a table in a meeting. The man on the left, wearing a blue shirt, is gesturing with his hands while speaking. The man on the right, wearing a dark shirt, is listening. On the table are a laptop, a glass of water, and a coffee cup.

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What are the challenges we face?

- Rapid changes in technology. How do we decide when is the right time to jump in?
- Scalability. What works best for rural and small communities?
- Extended Producer Responsibility (EPR) variations from State to State.
- Who is going to process all the data? Is the data quality uniform throughout the program?
- What role does advanced technologies play?

The GBB logo is located in the bottom right corner of the slide. It consists of the letters "GBB" in a bold, sans-serif font, with a stylized graphic element to the left.

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Thank You!



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"The multidisciplinary elements of the materials management industry inspire me with the possibility to create far-reaching change toward more sustainable, resilient, and socially just communities."