



Technical Discussion

Anaerobic Digestion of Materials from the Collected Waste Stream

Alternative Technology Advisory Sub-committee

May 16, 2024

By Jim Miller



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Organic Waste Processing Flow Diagram

Generation



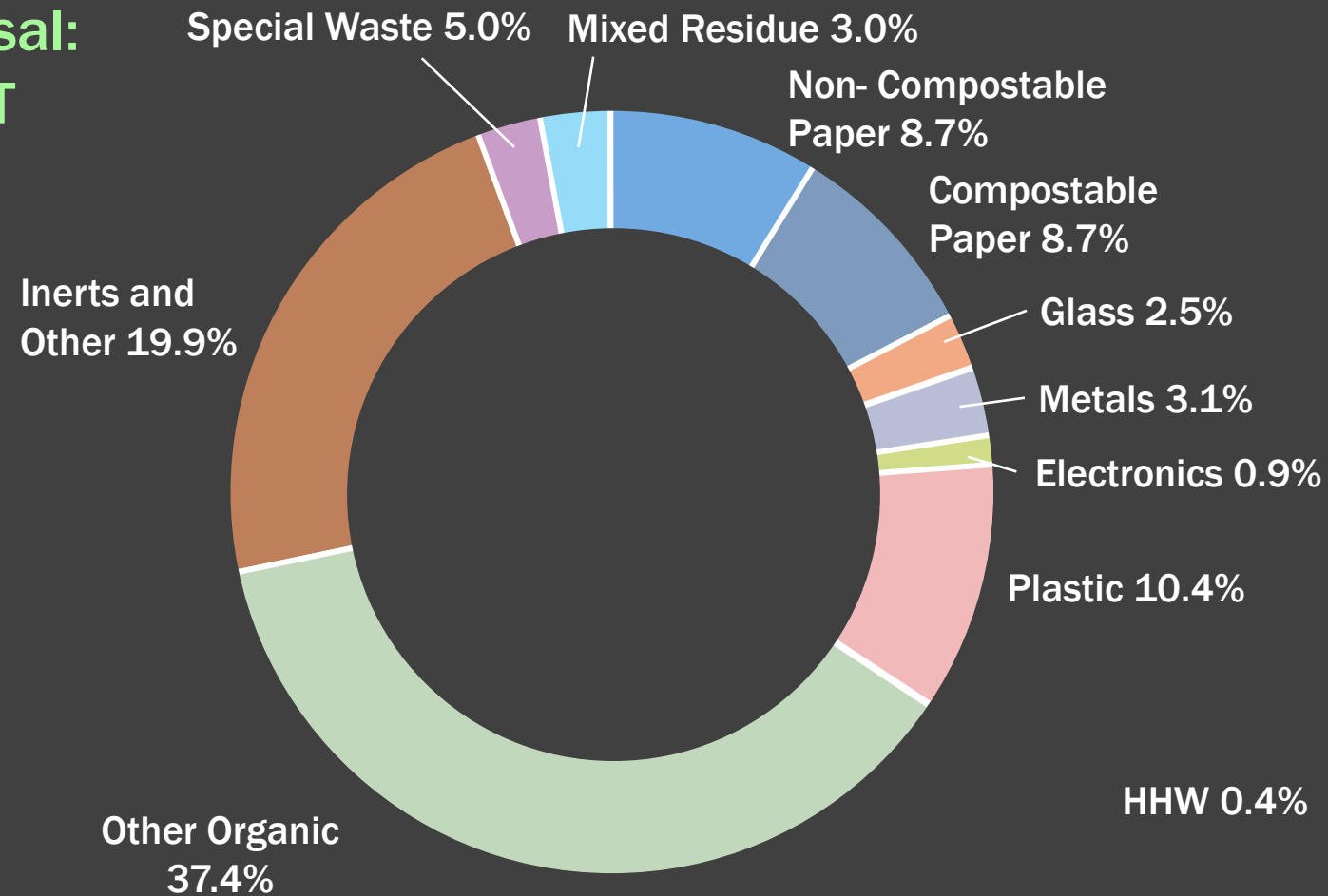
Collection

Disposal

Landfill Waste Composition

California - 2017

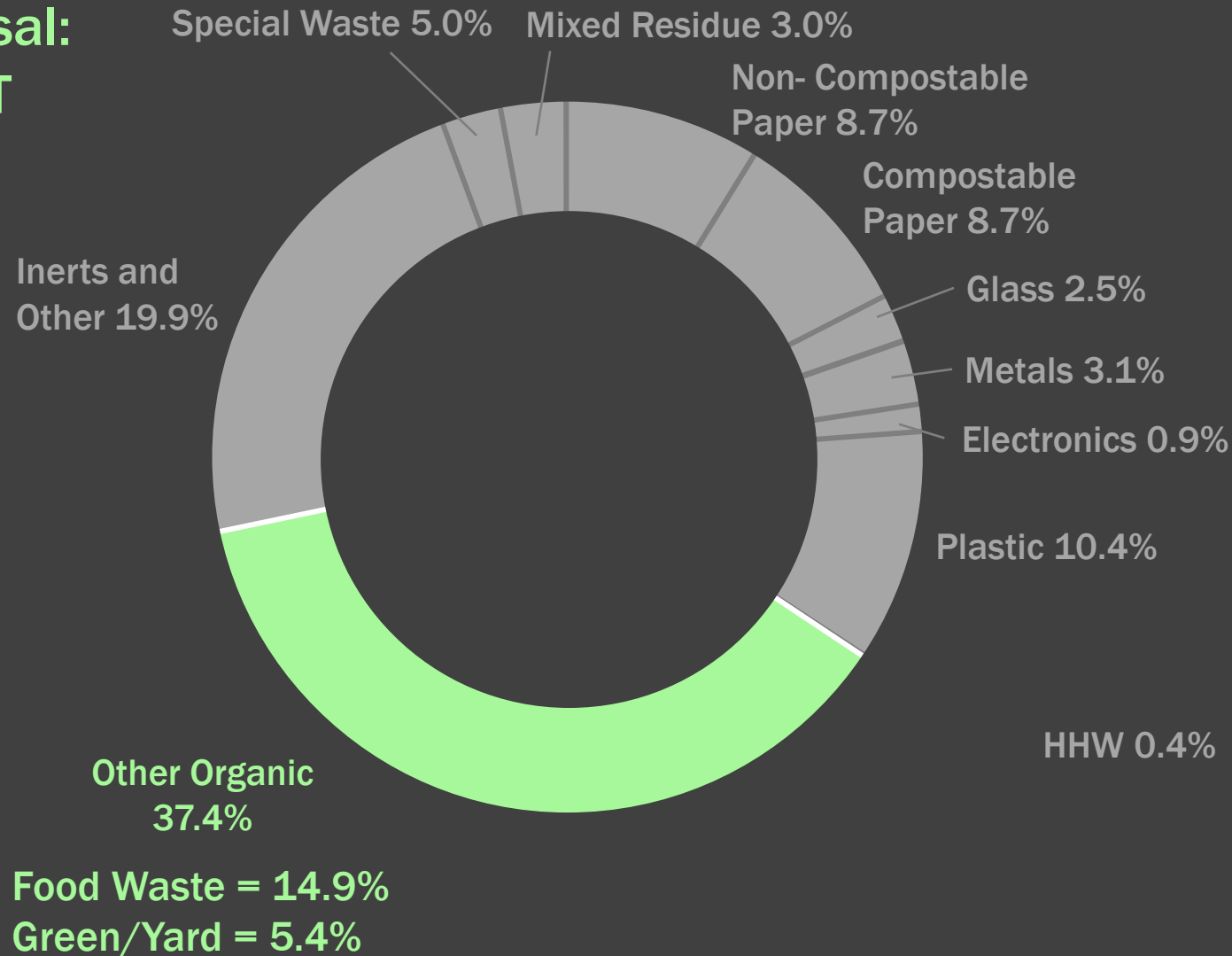
**2022 Waste Disposal:
California - 39.3 MT**



Landfill Waste Composition

California - 2017

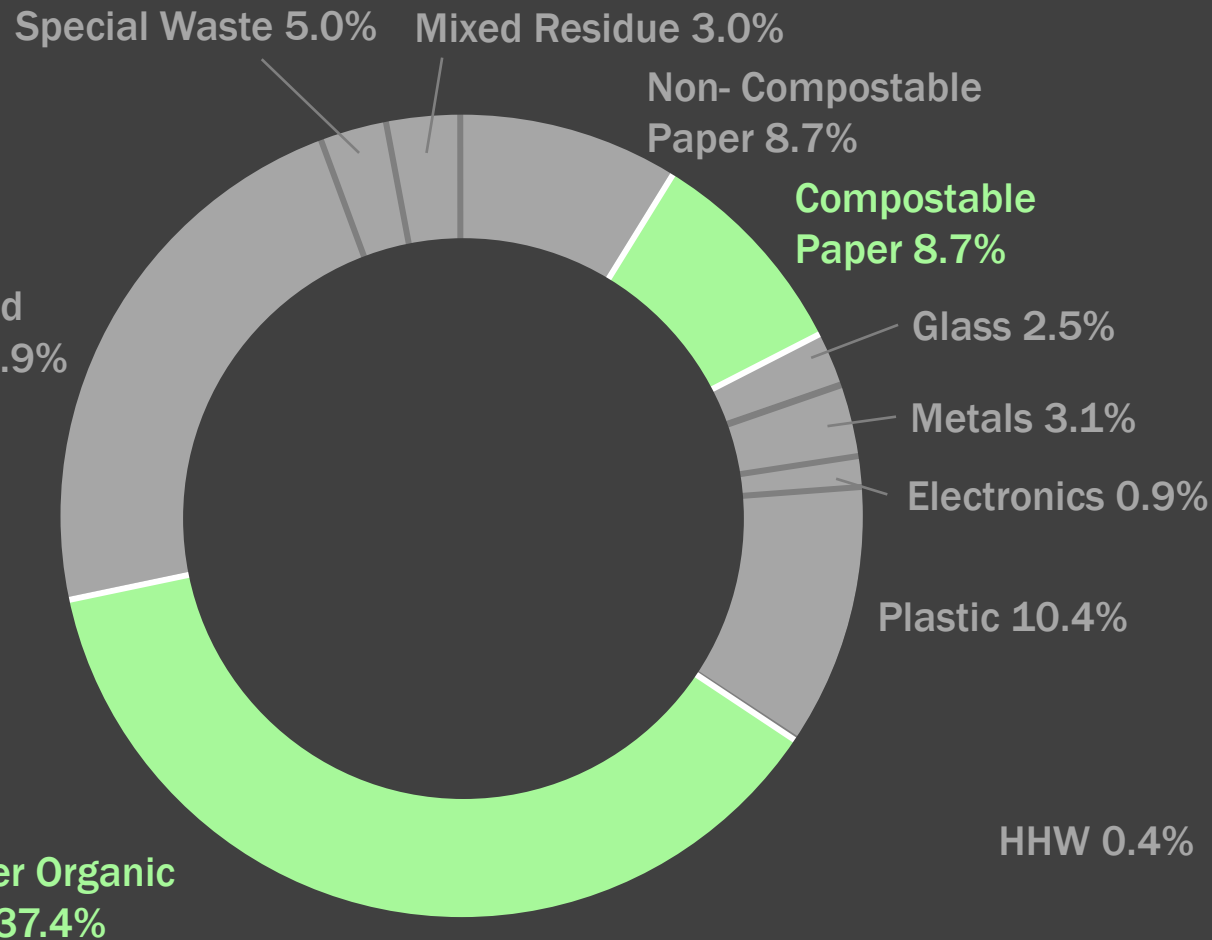
**2022 Waste Disposal:
California - 39.3 MT**



Landfill Waste Composition

California - 2017

**2022 Waste Disposal:
California - 39.3 MT**



**Total targeted organics =
14.9% + 5.4% + 8.7% = 29%**

**Food Waste = 14.9%
Green/Yard = 5.4%**

Landfill Waste Composition

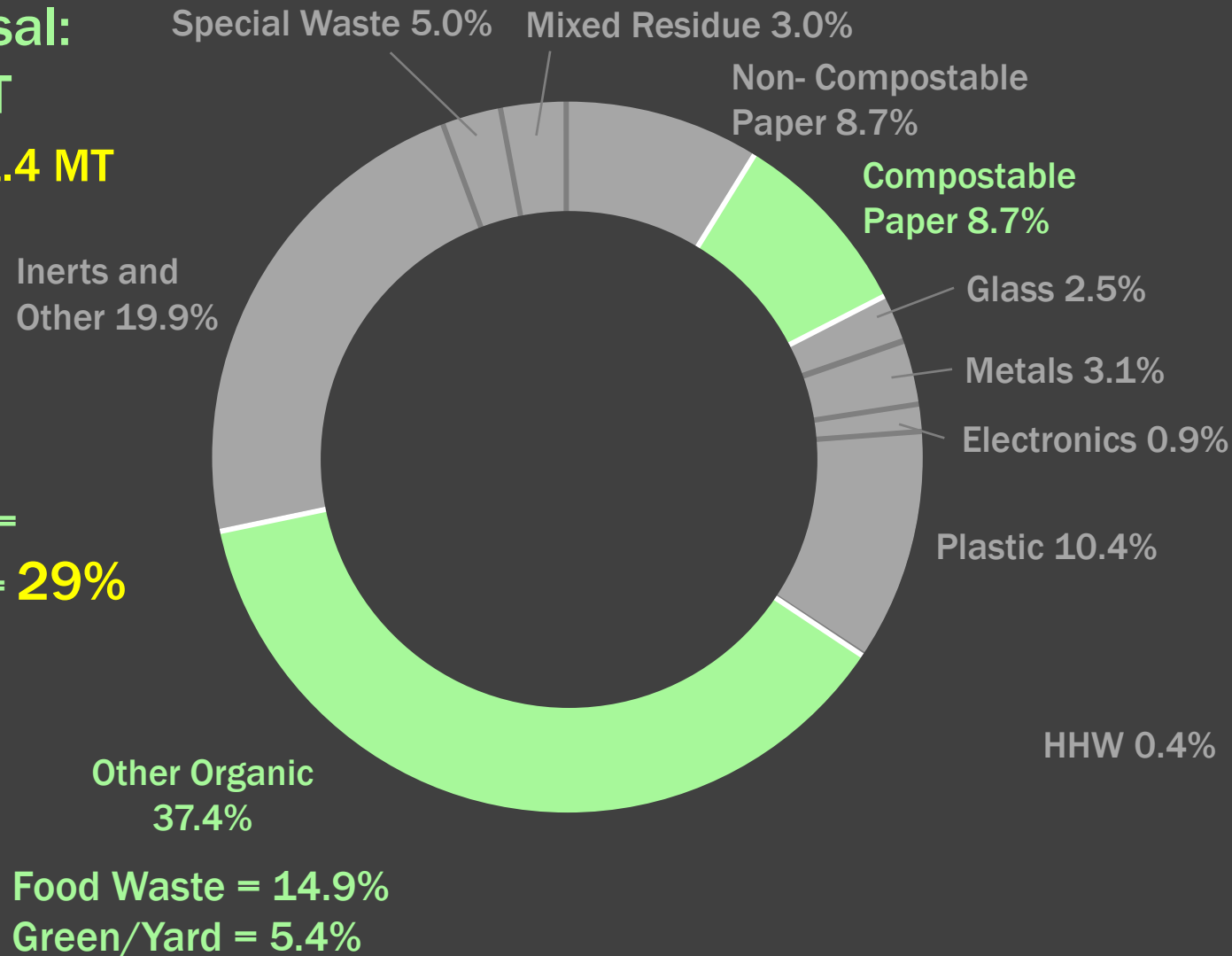
California - 2017

2022 Waste Disposal:
California - 39.3 MT

Targeted organics = 11.4 MT

Food waste = 5.9 MT

Total targeted organics =
14.9% + 5.4% + 8.7% = 29%



Source-separated Organics



Source-separated Organics



Source-separated Organics



Source-separated Organics



Source-separated Organics



Source-separated Organics



Organic Waste Processing Flow Diagram

**Goal of SB 1383: Reduce landfill
disposal of organics by 75%**

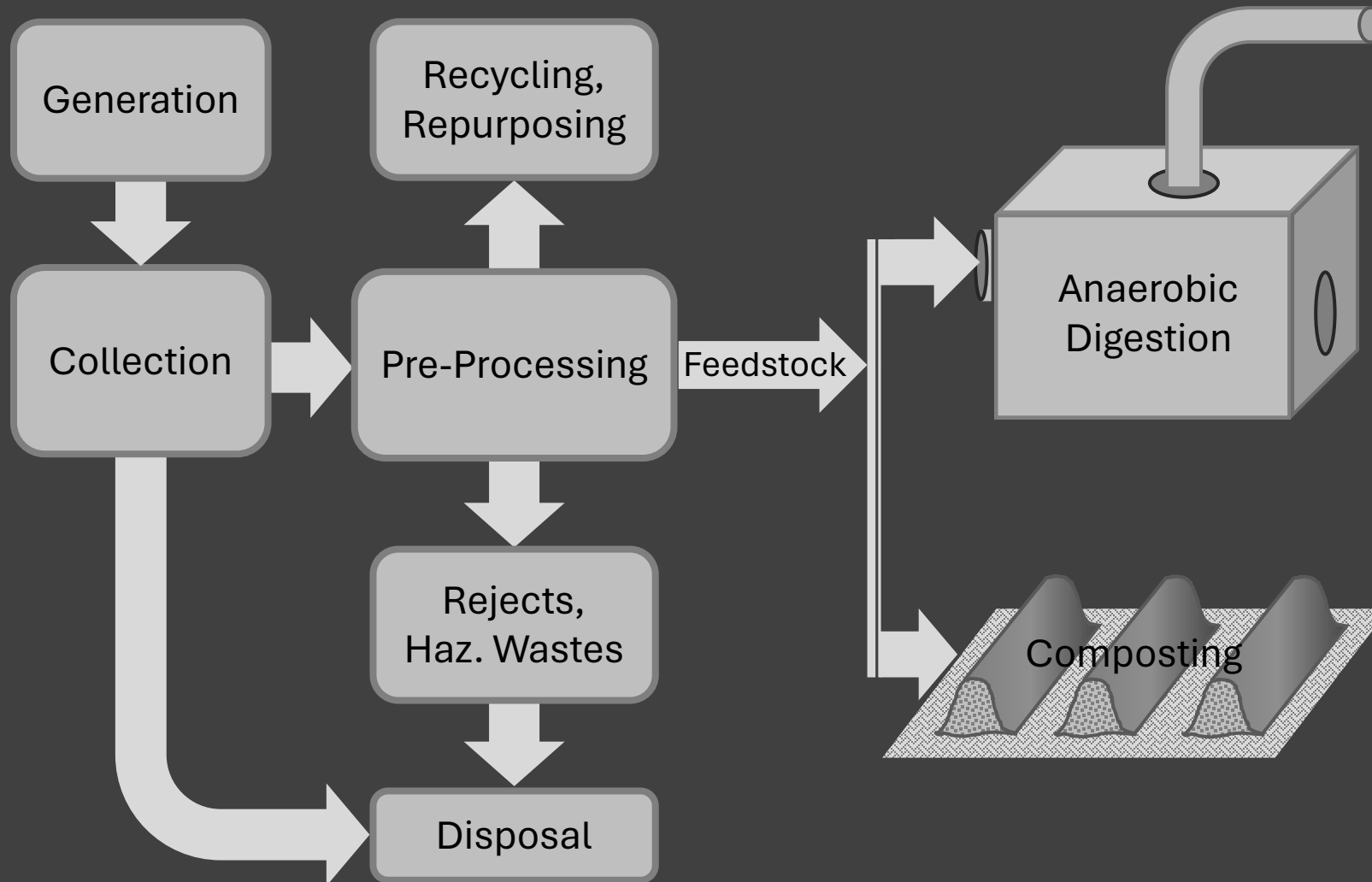
Generation

Collection

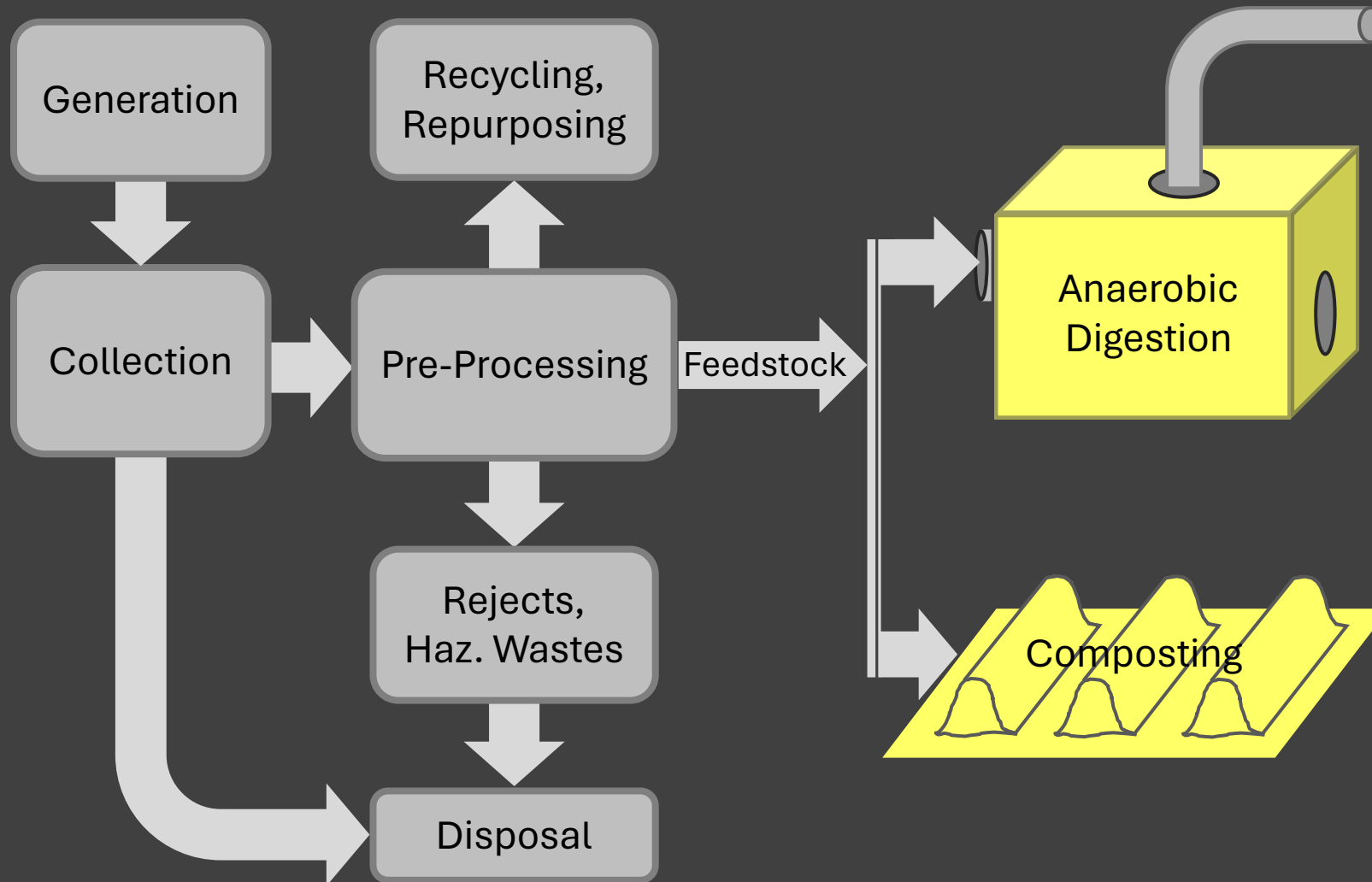
Disposal



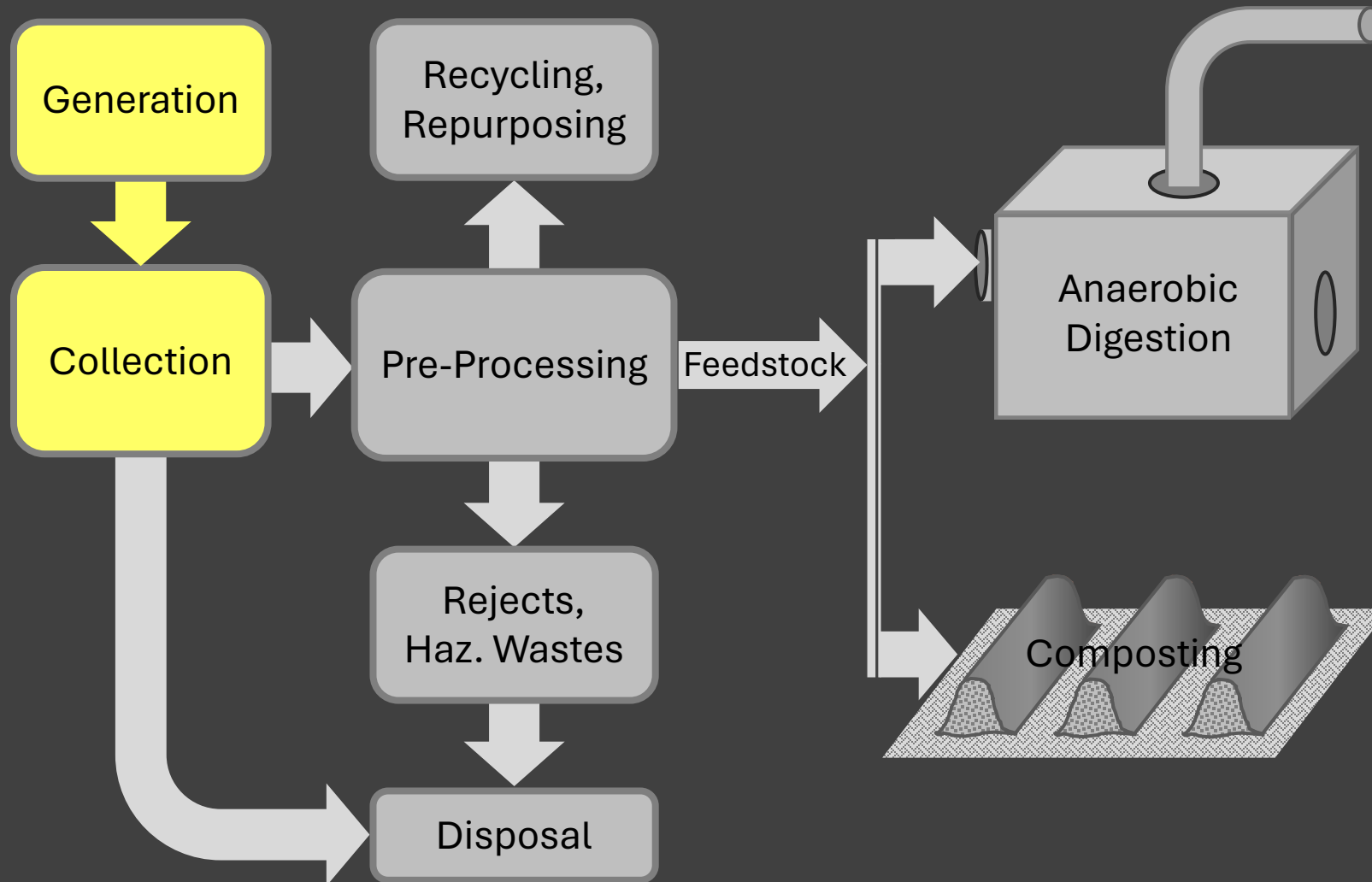
Organic Waste Processing Flow Diagram



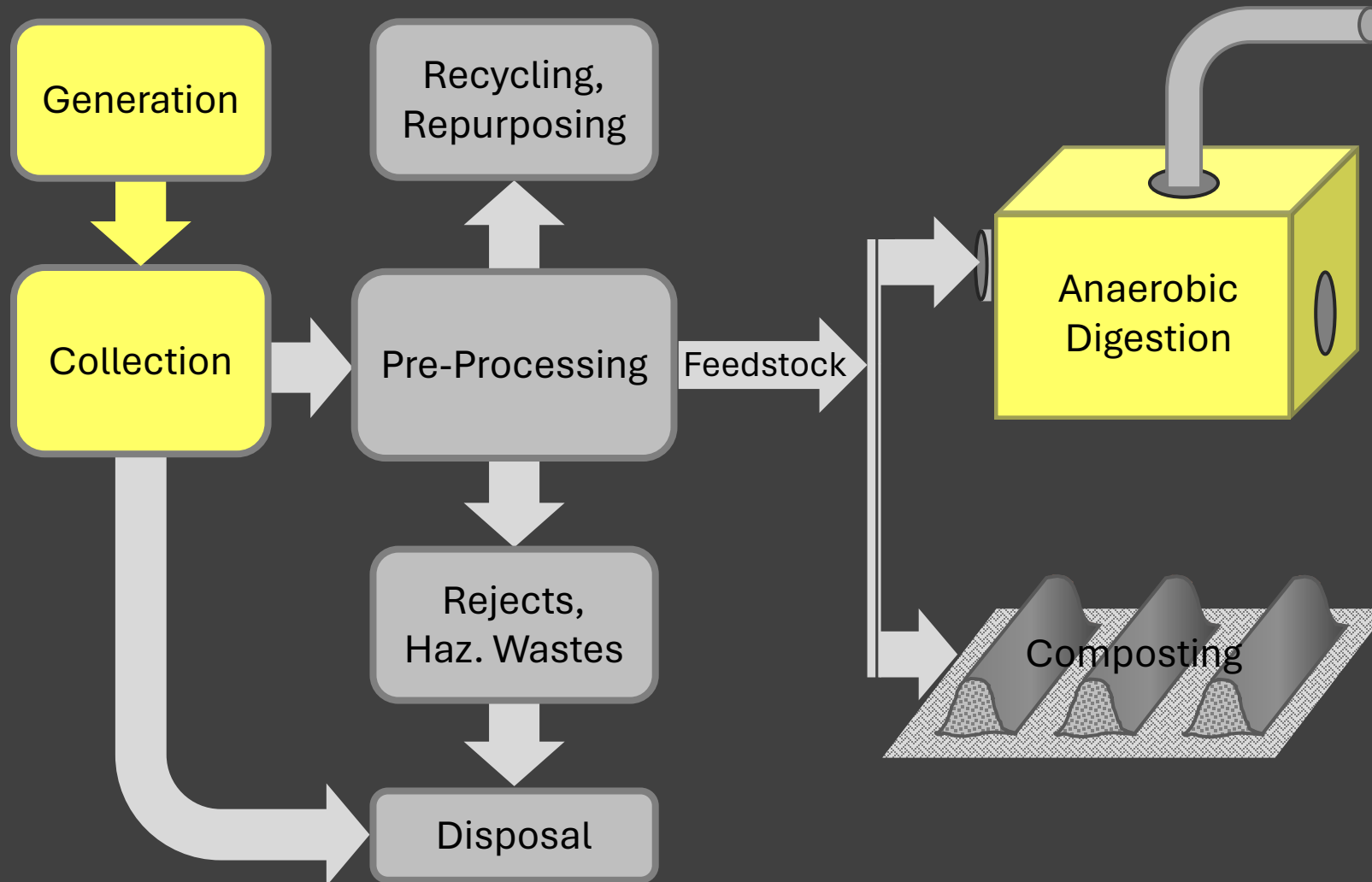
Organic Waste Processing Flow Diagram



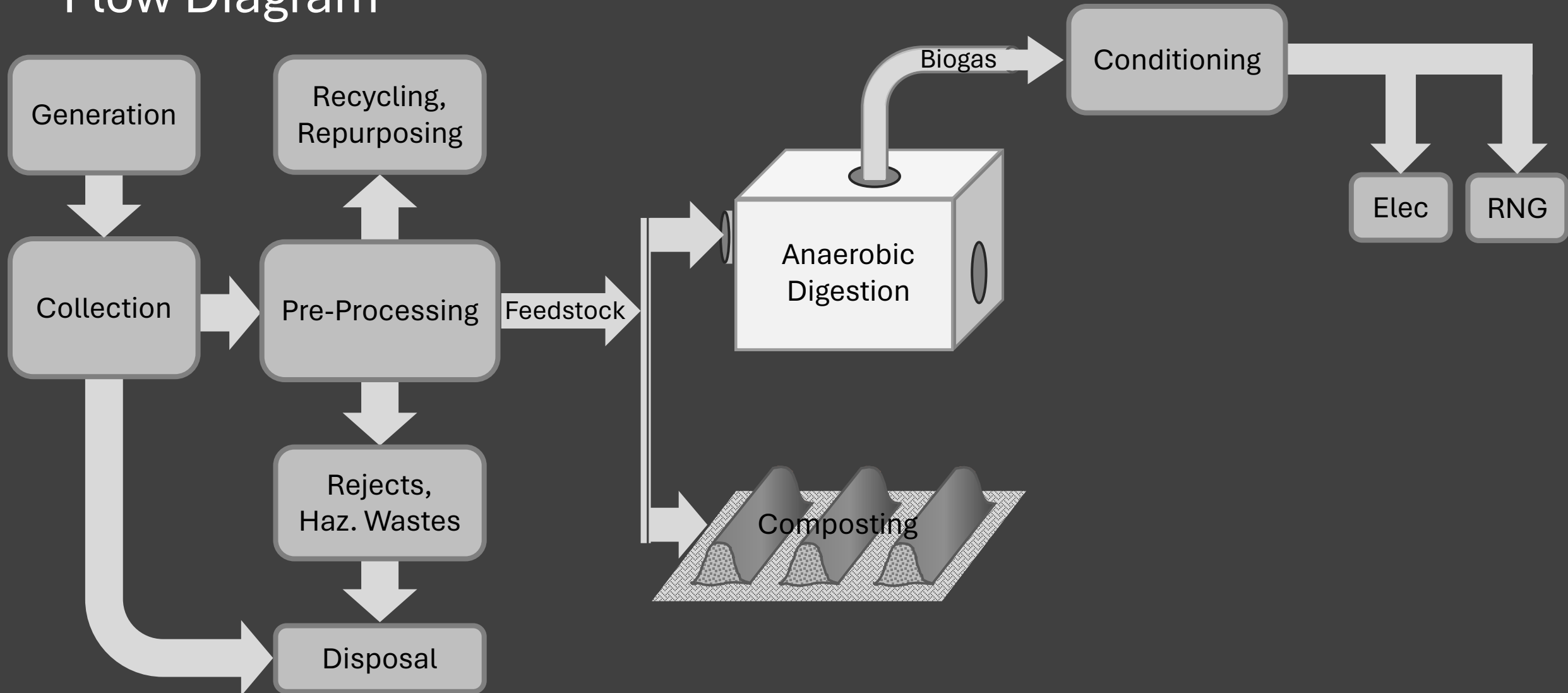
Organic Waste Processing Flow Diagram



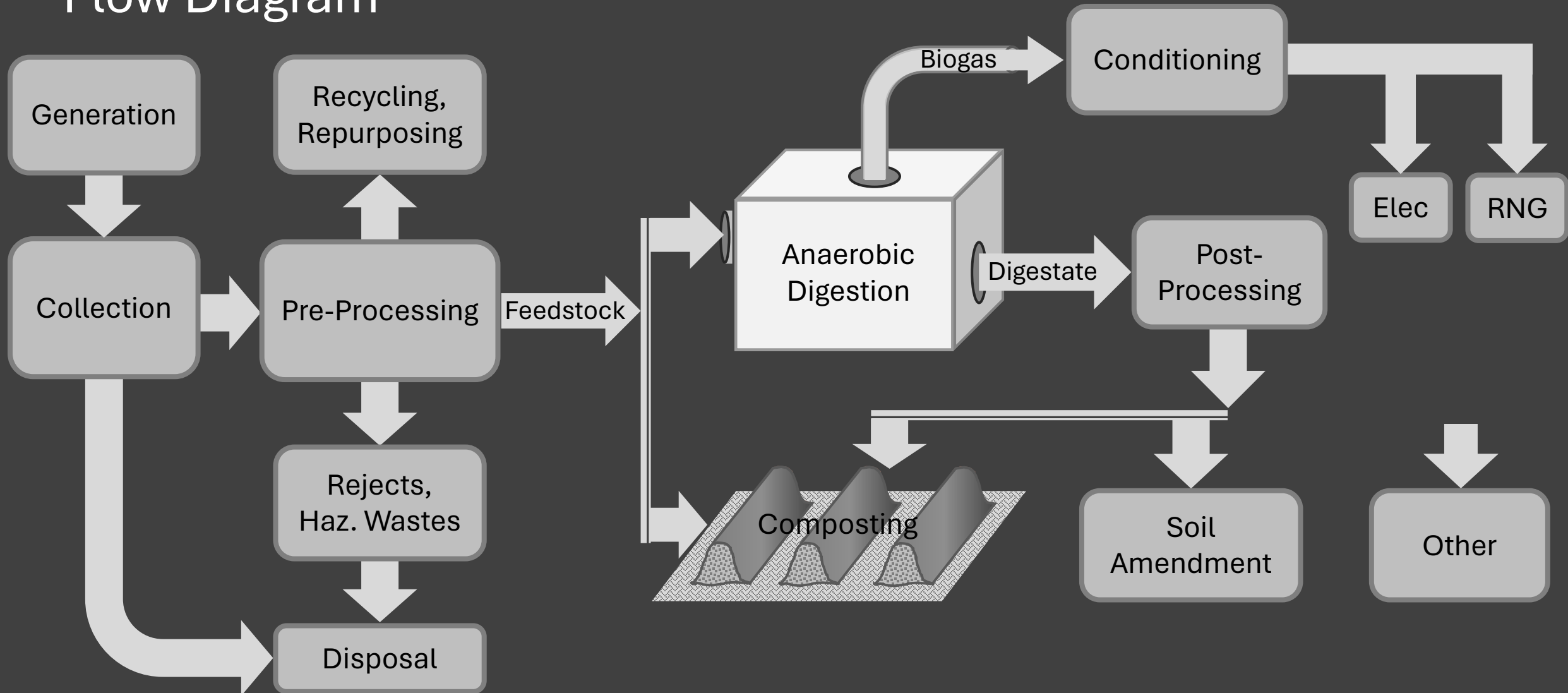
Organic Waste Processing Flow Diagram



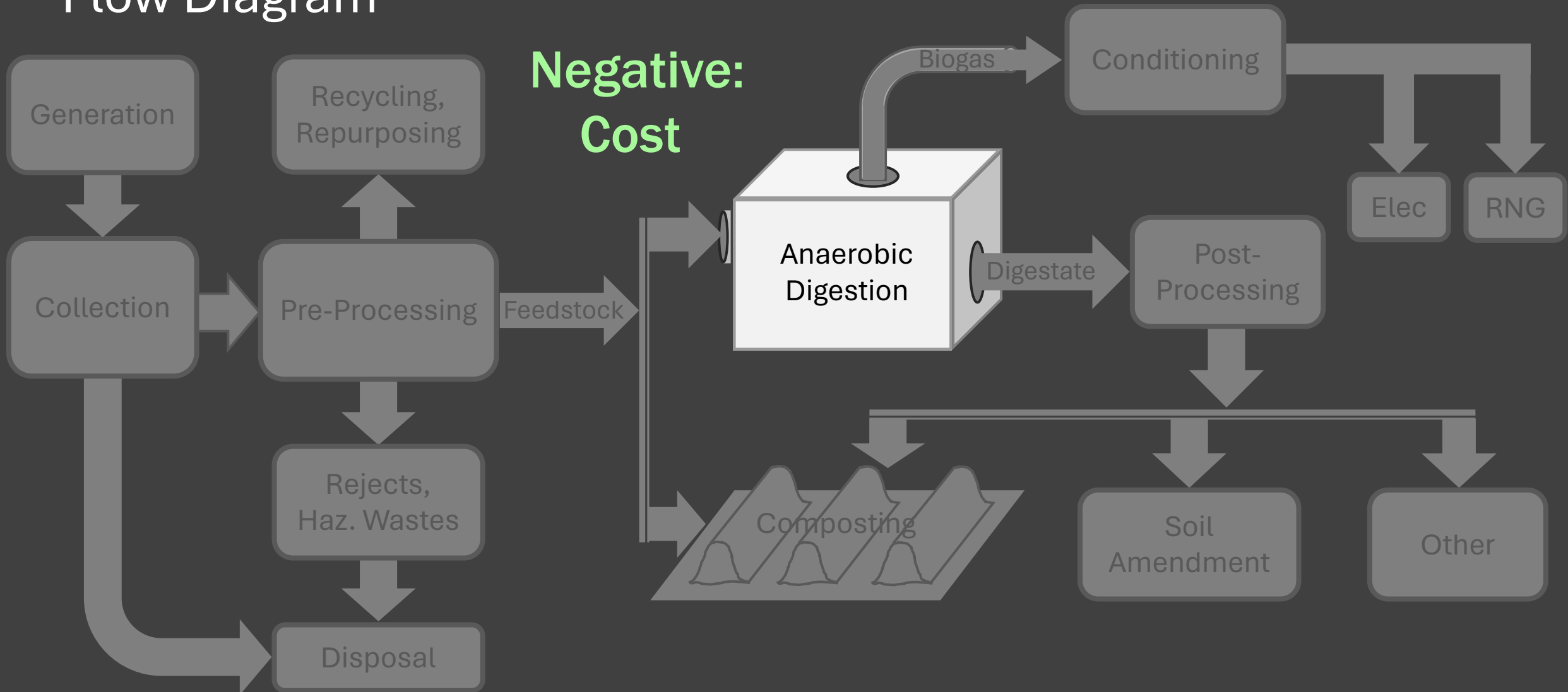
Organic Waste Processing Flow Diagram



Organic Waste Processing Flow Diagram

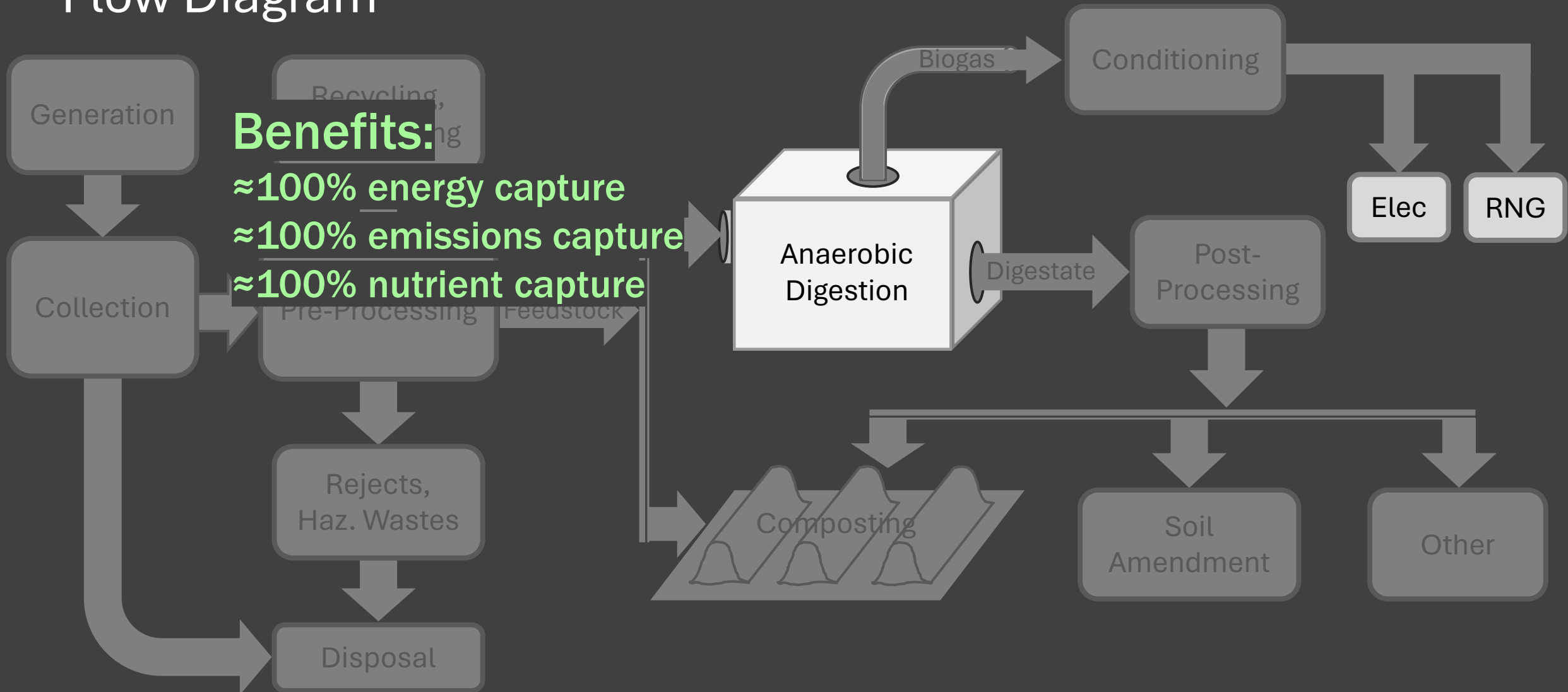


Organic Waste Processing Flow Diagram



Organic Waste Processing Flow Diagram

Benefits:
≈100% energy capture
≈100% emissions capture
≈100% nutrient capture





Example Projects

1. Zero Waste Energy

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Zero Waste Energy Development Corporation

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Zero Waste Energy Development Corporation



- Feedstock:
 - Mixed-waste MRF residuals, rejects – 30-40%
 - Green waste, rejects approx. 5%
- Commenced operations: January 2014
- Started receiving green waste: March, 2018
- Average throughput:
 - 90,000 TPY MRF residuals
 - 25,000 TPY Green waste
- Total landfill diversion – Approx. 750,000 T



Example Projects

1. Zero Waste Energy
2. LA County Sanitation Districts

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LA County Sanitation Districts



LA County Sanitation Districts

- Feedstock: Source-separated Commercial food waste
 - Rejects – Approx. 5% (mostly packaging)
- Commenced operations: March 2019
- Design capacity: 200 TPD
- Average throughput: 140 TPD
- Total landfill diversion – Approx. 150,000 T

Example Projects

1. Zero Waste Energy
2. LA County Sanitation Districts
3. CR&R Bioenergy Facility

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CR&R Perris Bioenergy Facility

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CR&R Perris Bioenergy Facility



- Feedstock: Residential yard waste plus food scraps
 - Food scraps – Approx. 5%
 - Rejects – Approx. 4% (mostly plastic bags, inerts, and stumps)
- Commenced operations: June 2017
- Digestate to composting and field application
- Design capacity: 160,000 TPY
- Average throughput: 110,000 TPY
- Total landfill diversion – Approx. 750,000 T

Example Projects

1. Zero Waste Energy
2. LA County Sanitation Districts
3. CR&R Bioenergy Facility
4. HZI San Luis Obispo

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HZI – San Luis Obispo

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HZI – San Luis Obispo

- Feedstock: Residential yard waste plus food scraps
 - Food scraps – Approx. 8%
 - Rejects – Approx. 6-8% (mostly inerts, and stumps)
- Commenced operations: April 2019
- Design capacity: 36,500 TPY
- Average throughput: 32,000 TPY
- Total landfill diversion – Approx. 144,000 T



Discussion

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