

Buying into Sustainability: Tackling Scope 3 Procurement

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Office of
Sustainability

Problem: How can Georgia Tech accurately report on additional categories in its GHG Inventory?

(Scope III Procurement & Fertilizers)

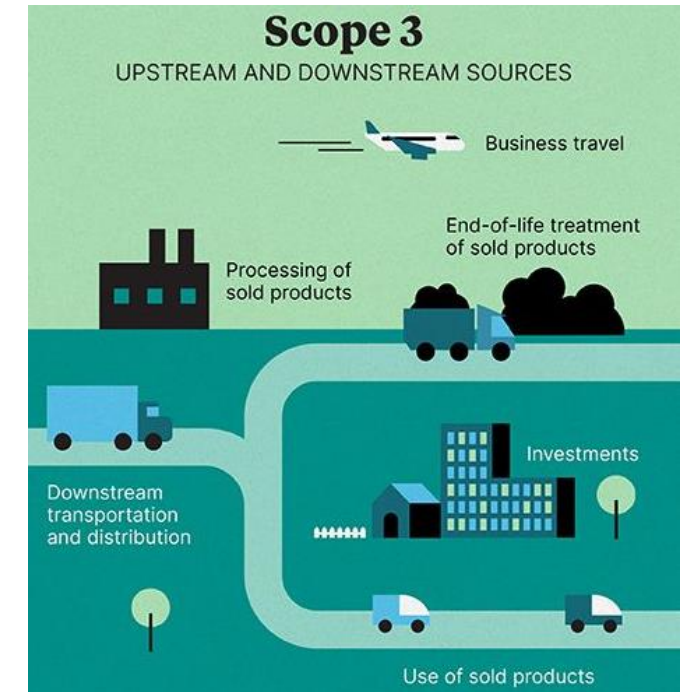
Scope III: GHG emissions associated with the purchases of goods, services, and construction by Georgia Tech

64%*
of total GHG
emissions by
UW

**metric from the University of Washington's supply chain GHG impact*

Motivation

1. Lack of current methodology within CAP
2. Reflect Georgia Tech's true GHG emissions
3. Guide investment in sustainable alternatives for procurement
4. Inform Sustainable Procurement Policy
5. Support CAP & net zero initiative



Methodology

Scope 1

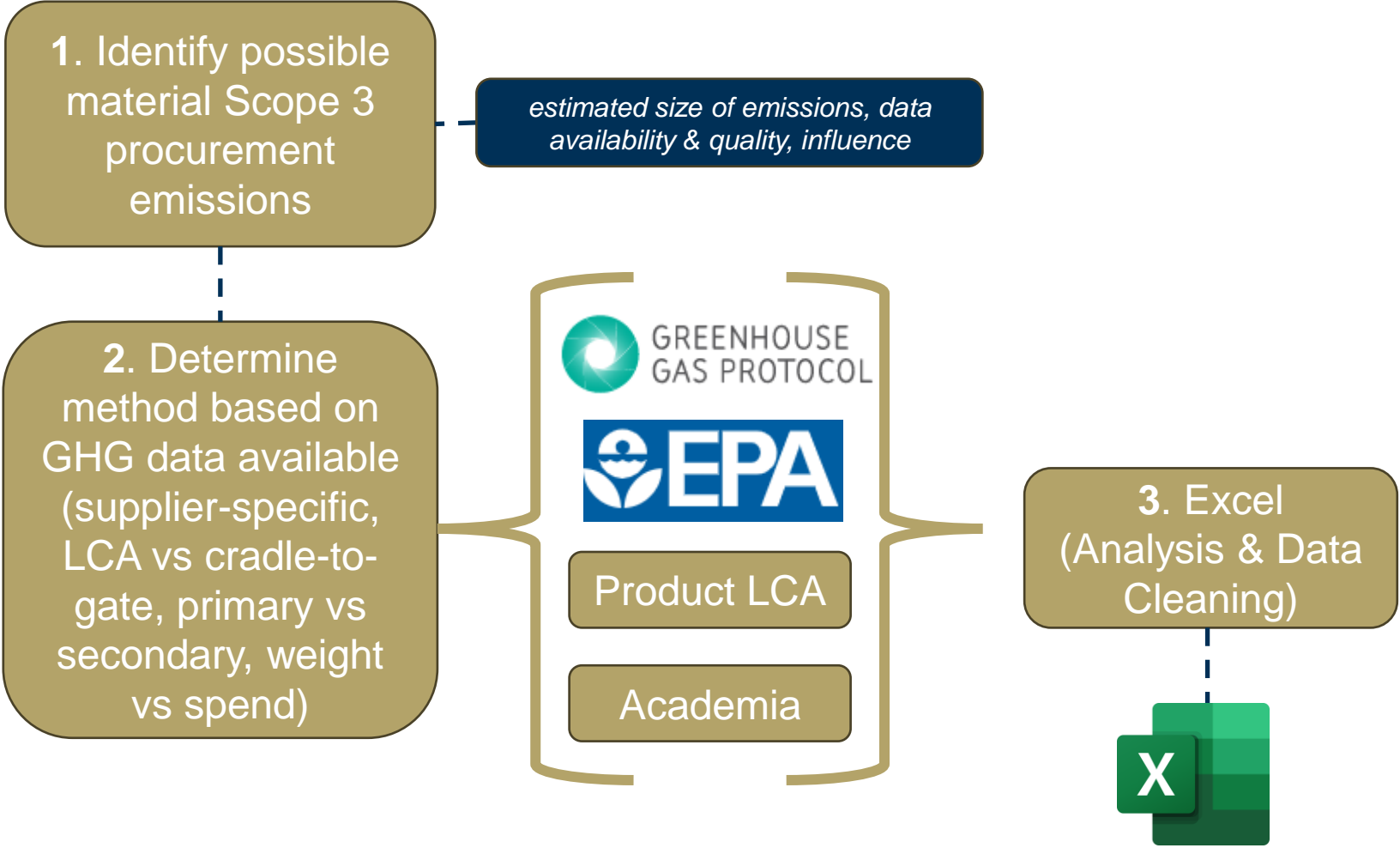
Fertilizers: hybrid

Scope 3

- Paper: spend & weight
- Electronics: hybrid
- Furniture: hybrid
- Appliances: hybrid

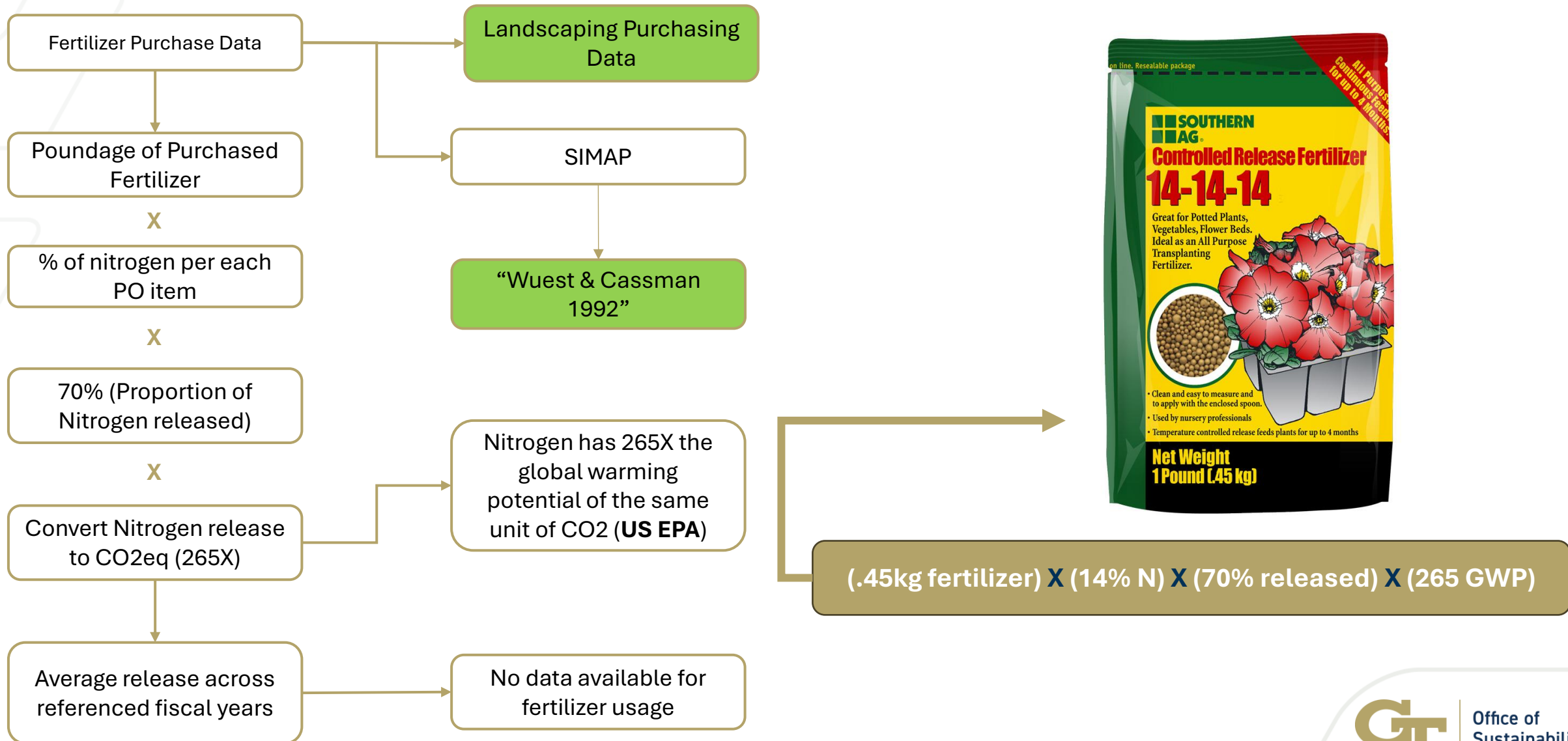
Emission Factor Sources

- USEEIO, ClimaTiq, Product LCAs, Academia



Method	Unit	Emission Factor
Average-Data	kg or unit of good/service	kg CO2e / (kg or piece/unit)
Spend	\$ value of purchase	kg CO2e / \$

Scope I: Fertilizers – Methodology Example



Scope III: Paper – Weight vs Spend Example

Weight Methodology

1. Recorded the weight of 1 unit of the mode purchased paper (TRU RED) and converted to metric tons
2. The weight of TRU RED paper was multiplied by the kgCO₂eq per metric ton for UCWF (Uncoated wood free) paper to produce kgCO₂eq per carton
3. The total spend on paper for FY23 was then divided by the unit price of TRU RED to produce an equivalent number of purchased TRU RED cartons for all paper purchases in FY23
4. The eq # of TRU RED cartons were then multiplied by the kgCO₂eq / carton for UCWF (Uncoated Wood Free) to produce an mt CO₂eq for all paper purchases in FY23



Measurement:
Biogenic CO₂
Intensity (kg CO₂eq)

“Tomberlin, Venditti,
and Yao 2020”

Weight: 562.22 mt CO₂eq for FY23

Spend Methodology

1. The total spend on paper for FY23 was multiplied by each GHG factor for paper (from the USEEIO Factor Model in kg/\$USD) to produce GHG emitted by specific GHG (O₂, N₂O, HFC-23, sulfa hexafluoride etc.)
2. These GHG factors were then converted to the equivalent GWP CO₂ emissions emitted in kgs
3. Summing these together produced the total estimated CO₂eq released in FY23

USEEIO
GHG v1.2
NAICS-6

Spend: 564.64 mt CO₂eq for FY23

Findings

+8174 mt CO2 eq

(+14.3% FY22 Scope 3)

≈

≈

+ 21,004,288 mi driven

by gas powered vehicle

Category (Scope)	mt CO2 eq FY23
Fertilizer (I)	128
Paper (III)	565
Electronics (III)	5929
Furniture (III)	154
Appliances (III)	1526

- Information on synthetic vs organic fertilizer unavailable
- Electronics Scope III Calculation was cradle-to-grave (GHGs over full lifecycle of electronics were evaluated)

9.1% reduction in Scope I

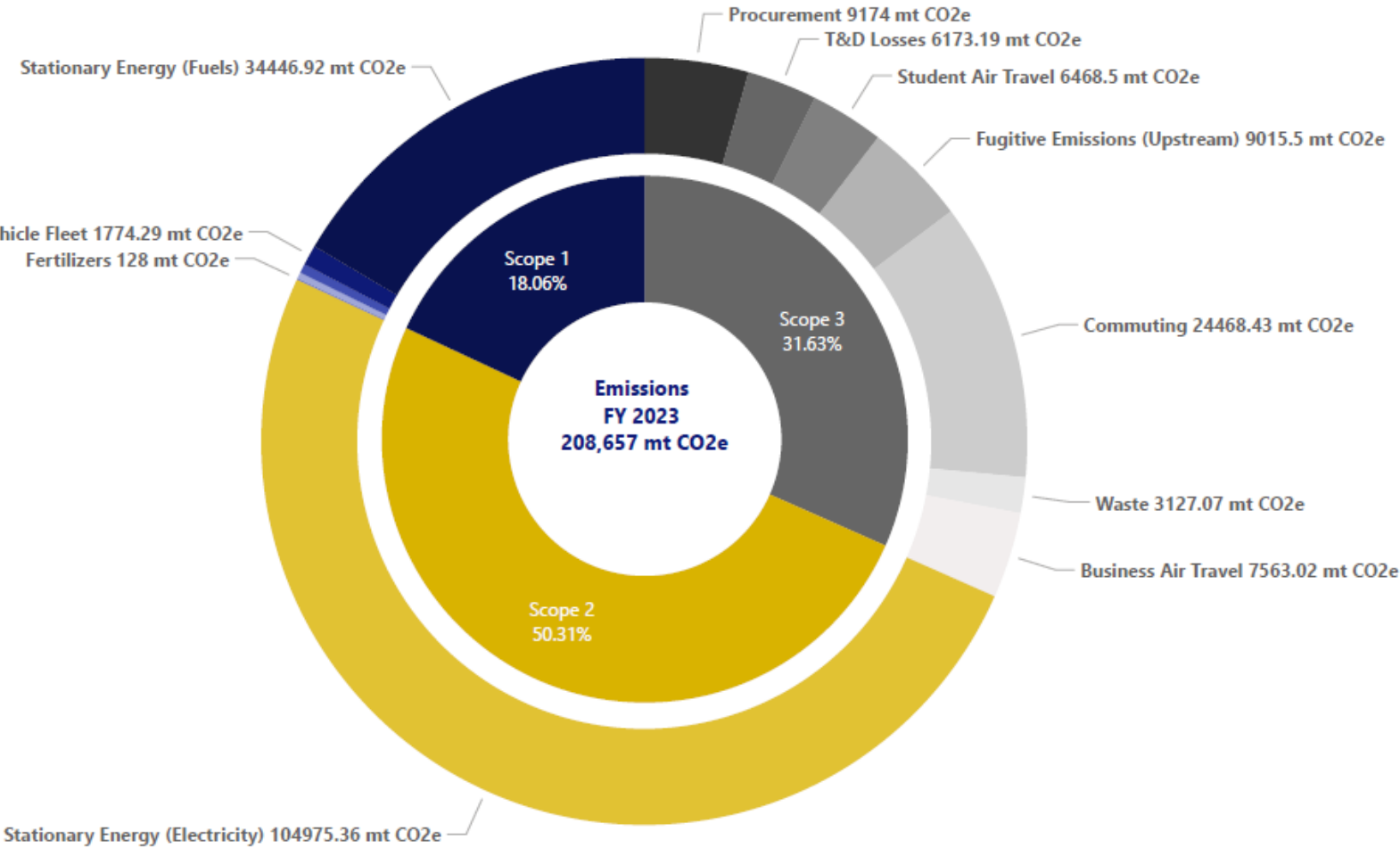
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no leak, ↓ usage

1.6% increase in Scope II

→

↑ usage



Recommendations

GHG Assessment

- I. Complete the GHG Inventory Guidance Document for future reference & replicability
- II. Collect data for additional emissions categories (embodied carbon from construction, healthcare procurement, information services)
- III. Leverage the Sustainable Procurement Policy to pressure suppliers into providing emissions data

Emissions Reduction

- I. Equipment Reuse (GaTech Surplus Database)
- II. Paperless Policies
 - PaperCut (print mgt. software) 
- III. Energy Efficient Certified Goods
 - Epeat, Energy Star, WaterSense   
- IV. Permaculture Approach to Fertilizer
 - Native plants, organic fertilizer, compost/dead leaves as fertilizer

Thank you for an amazing semester (shoutout Jermaine)! Q&A

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