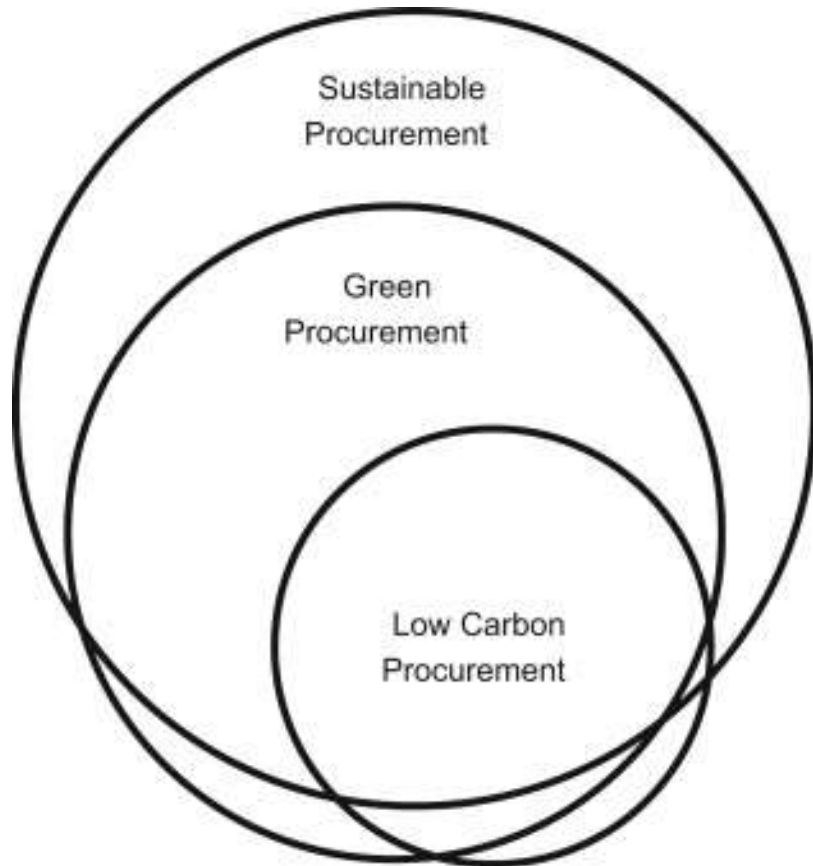# Low-carbon procurement

Sustainable
Procurement
in Manitoba

Reducing carbon emissions and improving sustainable operations through procurement

Background
# low carbon procurement

Sustainable
Procurement

Green
Procurement

Low Carbon
Procurement

- Provincial support for sustainable procurement
    - 1997 – Sustainable Development Act
    - 2018 - Climate and Green Plan Act
- Procurement used to help achieve environmental mandate
    - Low- carbon government
- Climate and Green Plan – provides Manitobans with production-based emissions data and recognizes consumption- based emissions by supporting low carbon procurement
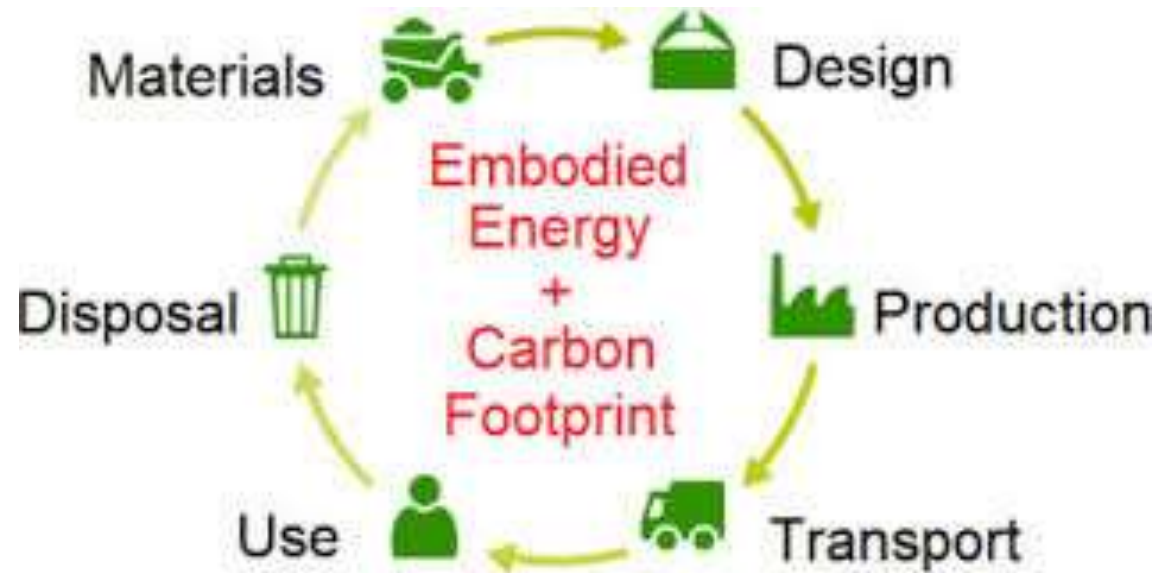
"Think global when acting local"

Where does the carbon in goods and services come from?

LINEAR ECONOMY

RAW MATERIALS · DESIGN · MANUFACTURE · CONSUMPTION · DISPOSAL
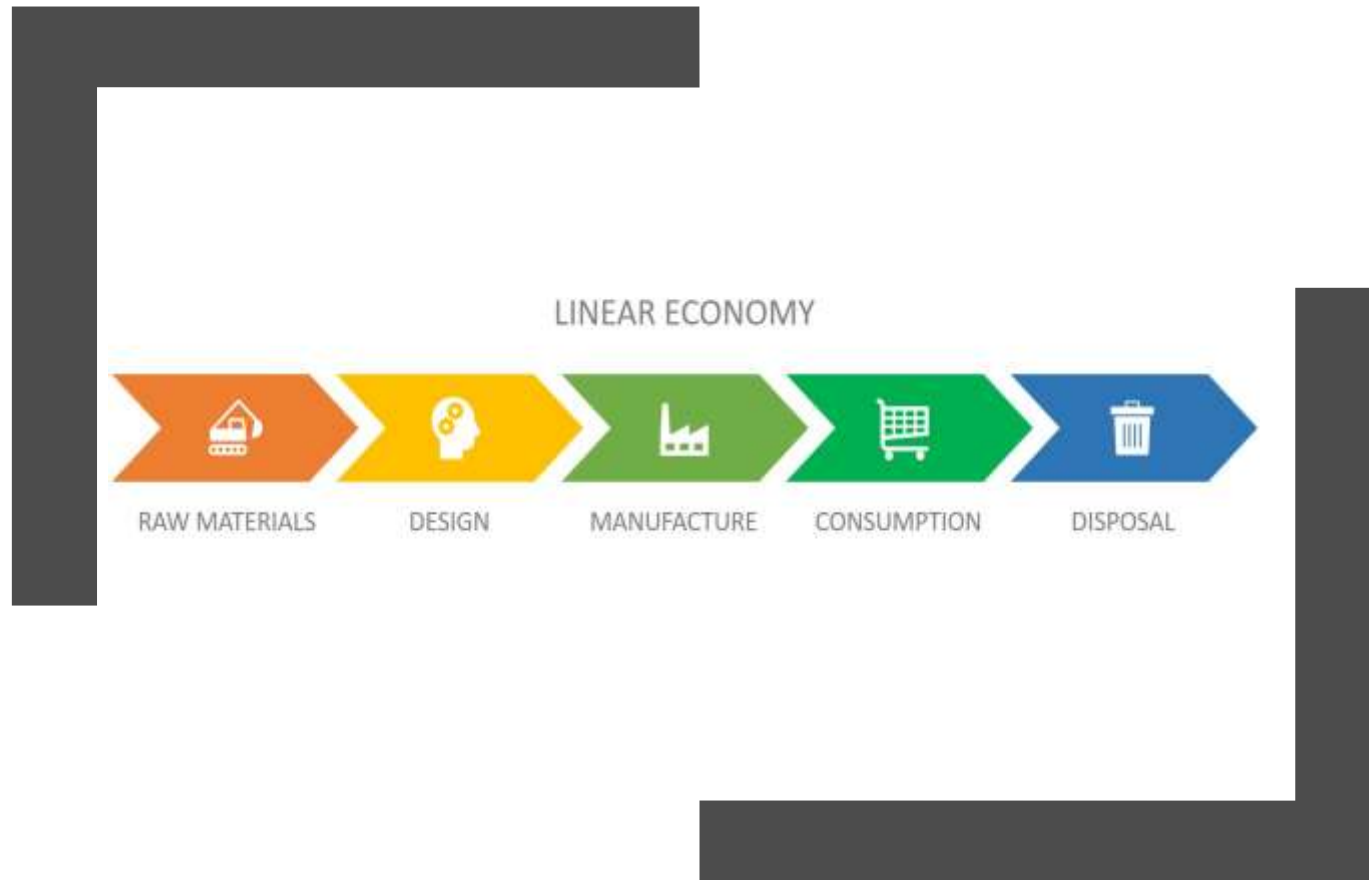
- Carbon emissions generated at all stages of lifecycle
  - Embodied carbon
  - Operational emissions

What makes goods lower carbon?

- Designed and manufactured in a way to reduce emissions

What makes services lower-carbon?

Providers of services seek to reduce emissions in:

- Buildings and facilities where service-related equipment, parts and supplies are housed

- Transportation and delivery related activities

  - Efficient fleet

  - No idling

  - Route planning

- Methods and activities associated with the service

  - Waste minimization

  - Recycling

Oregon 2015 consumption-based GHG emissions, by category of consumption and life cycle stage

David Allaway | Oregon Department of Environmental Quality
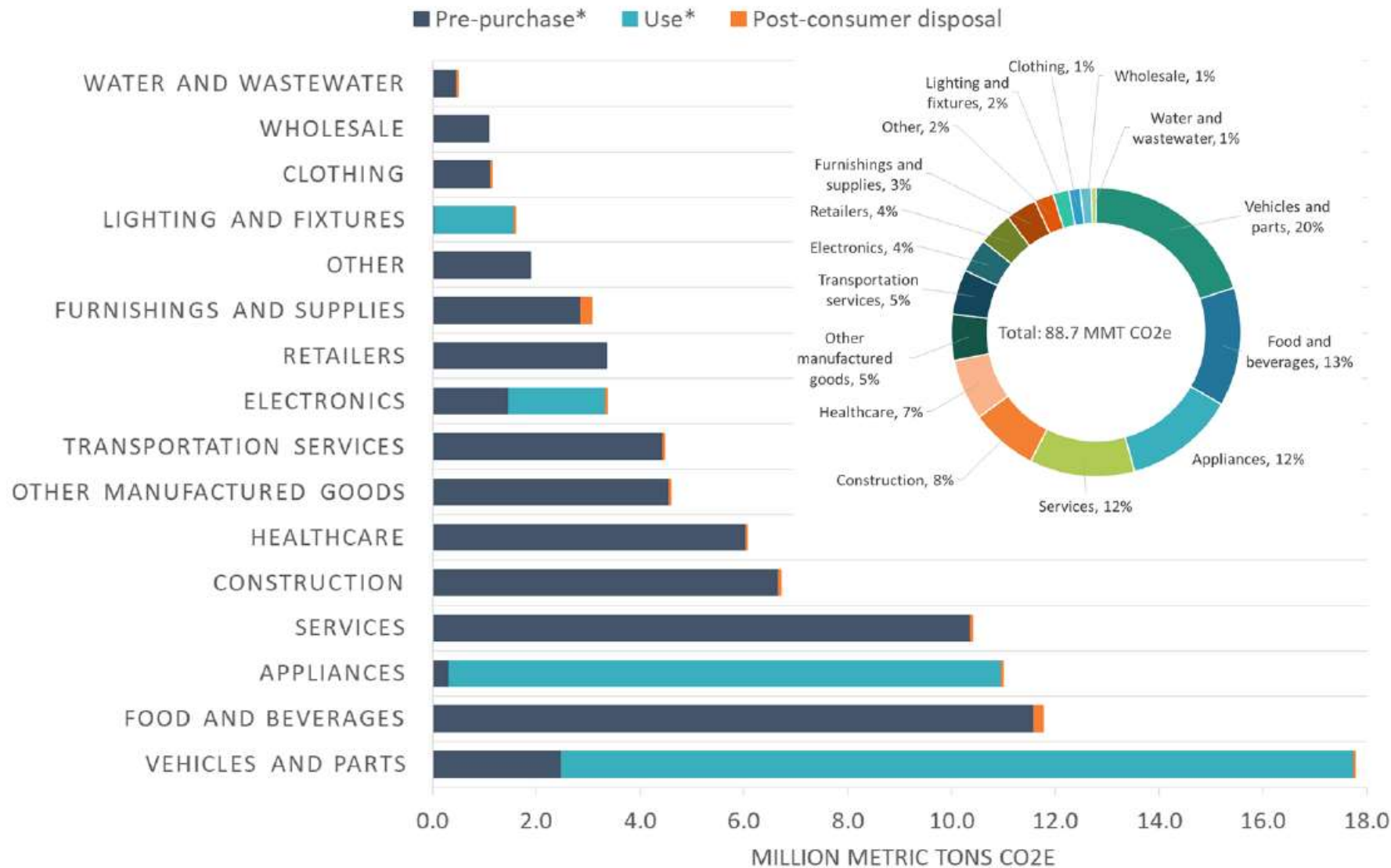
Identifying carbon hotspots

- What are your areas of spend producing the most carbon emissions?
  - Health authority it might be food
  - School division it might be fuel for school buses or paper purchasing
  - IT equipment for departments

Tools have/are being developed to measure supply chain carbon
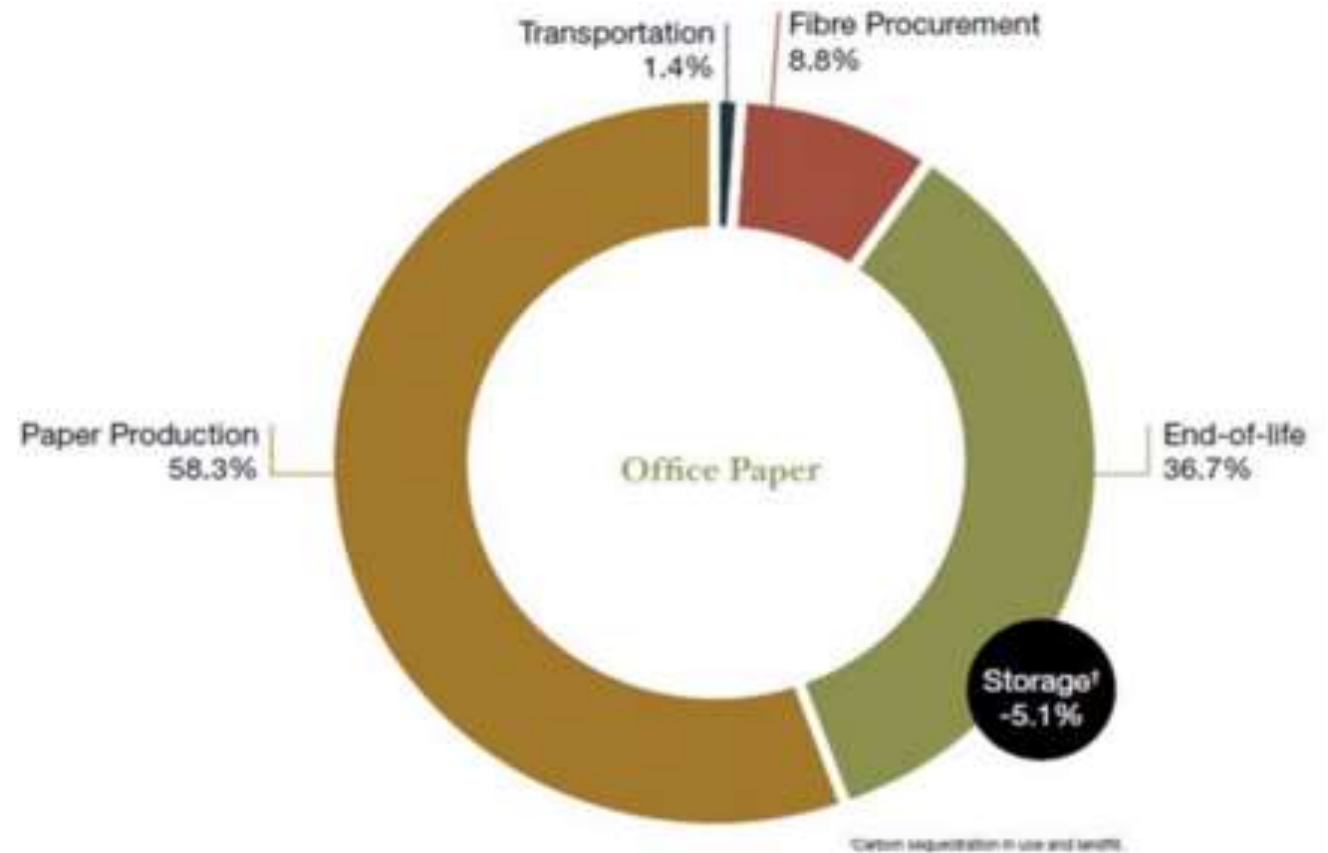
Hot spot - IT purchasing
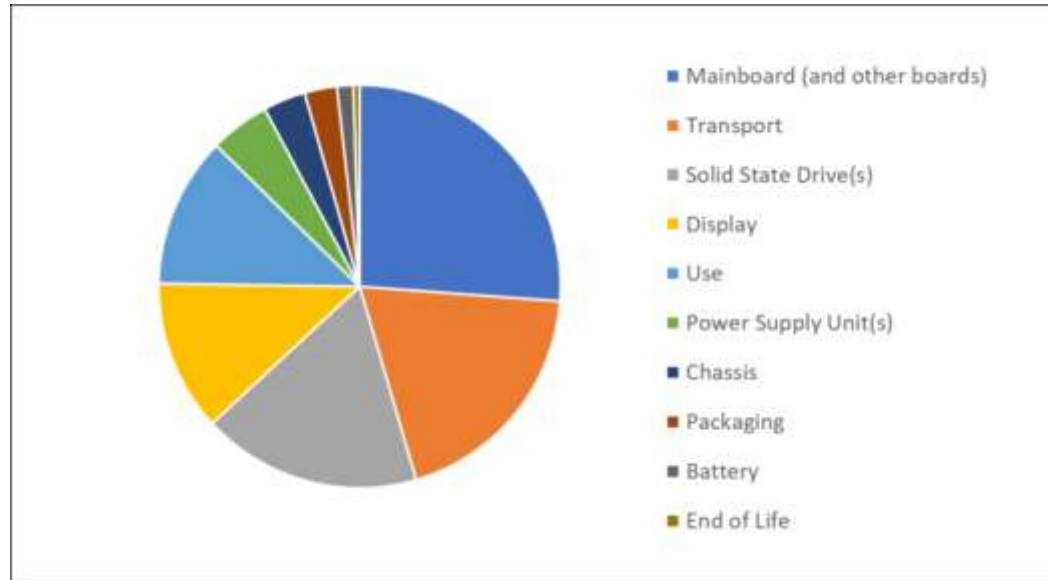
- Product carbon footprint report:

- HP Elitebook 840G6 Notebook PC
  - 375 kg CO_2e +/- 65 kg of CO_2e
  - Lifetime of product 4 years

- If purchasing 1,000 computers
  - Carbon footprint = 375 metric tons
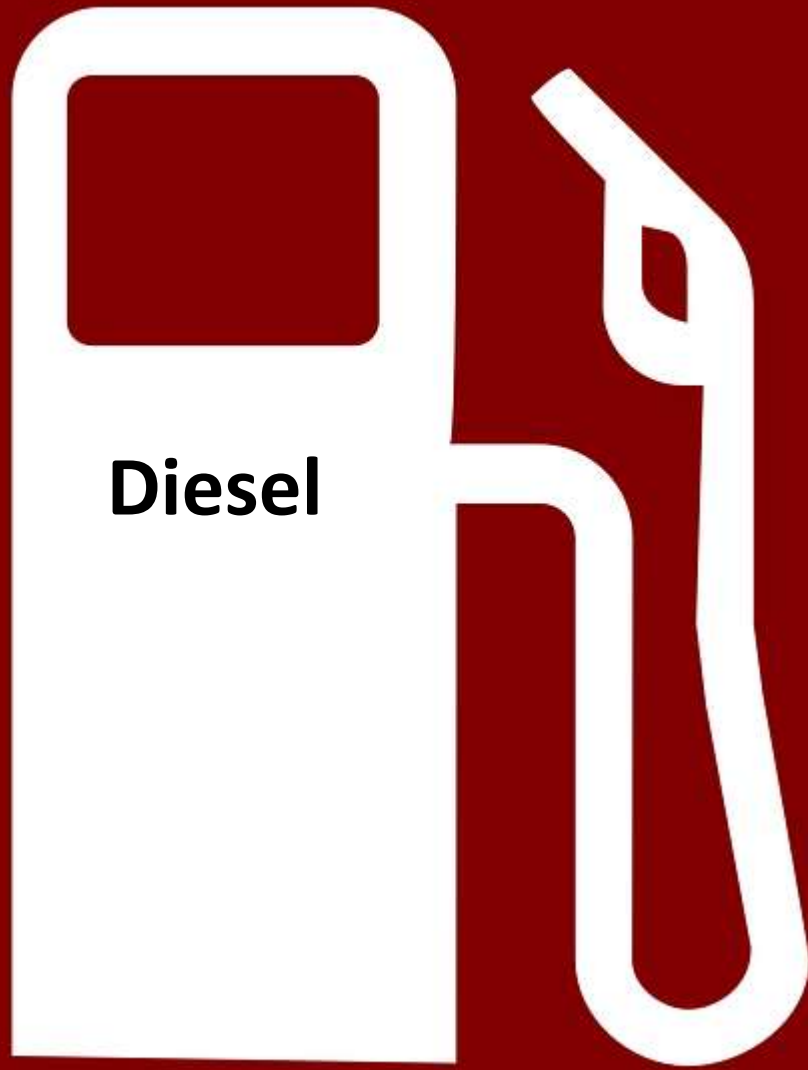   - equivalent to the emissions from 75 passenger vehicles for one year

https://h22235.www2.hp.com/hpinfo/globalcitizenship/environment/productdata/ProductCarbonFootprintnotebooks.html

Hot spot – copy paper purchasing

- Environmental Paper Network Calculator:

- 2018 RETSD (42 schools & 8 offices) purchased 40,000 reams of 8 1/2 x 11 copy paper
- If paper was purchased without PCW content
  - Carbon footprint= 870 metric tons
- If paper purchase amount similar for all 39 SD = 34,000 metric tons
  - Equivalent to the emissions from 6,800 passenger vehicles on the road for one year.

Calculated using Environmental Paper network Version 4

Transportation 1.4%

Fibre Procurement 8.8%

Paper Production 58.3%

Office Paper

End-of-life 36.7%

Storage† -5.1%

†Carbon sequestration in use and landfill.

Hot spots- fuel consumption

- Many departments/municipalities purchase large volumes of fuel for public works, fleet, emergency vehicles including aviation fuel

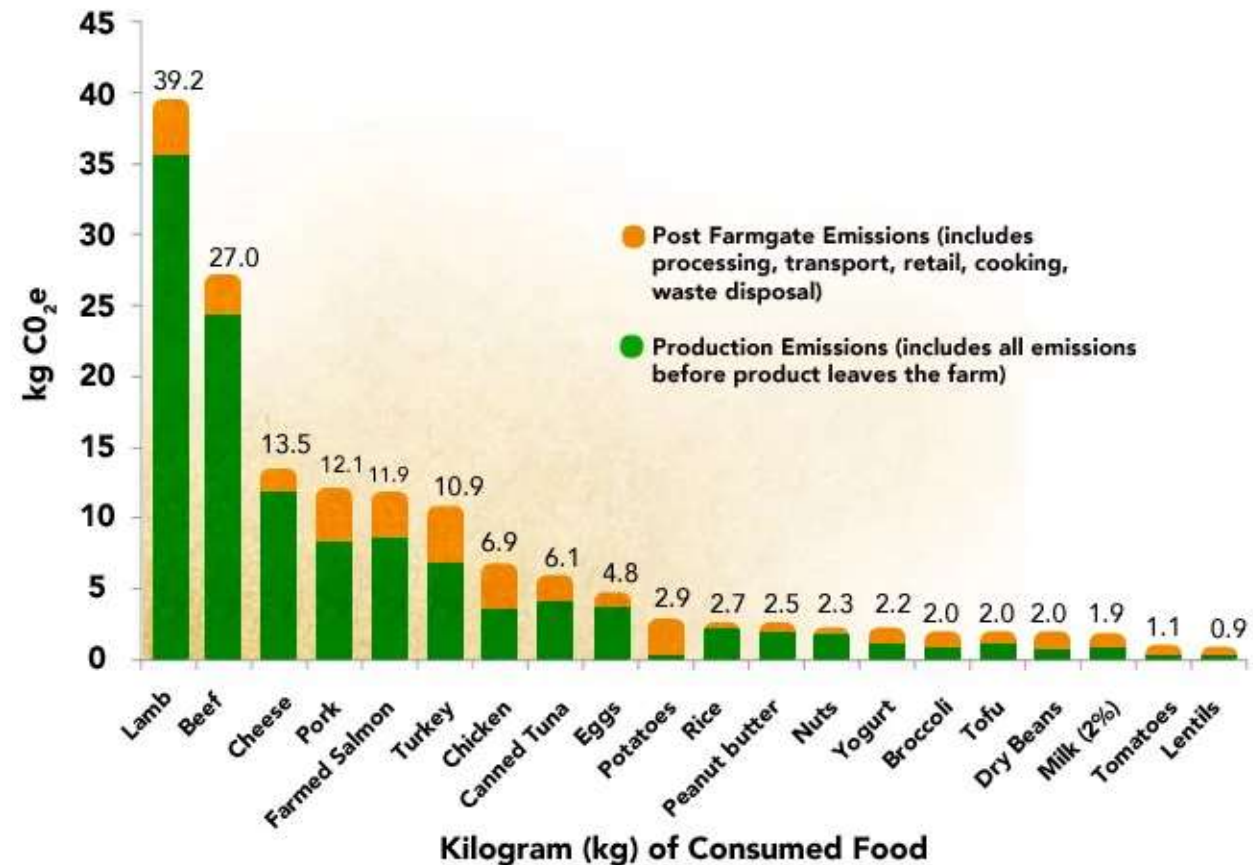|		
•	Gasoline	2.29 CO_2e kg/L
•	E10	2.21
•	Diesel	2.66
•	B5	2.65
•	B20	2.62

Natural Resources Canada (CO_2e kg/L)

- If 1,000,000 Litres of diesel fuel is purchased
  - Carbon footprint = 2,660 metric tons = 525 passenger vehicles on the road for one year

Diesel

Hot spots – Food purchasing

- If a municipal hospital provides meat based meals and purchased 500 kg of meat per day

- Carbon footprint = 2,700 metric tons per year.

Equivalent to the emissions from 540 passenger vehicles for one year.

Bar chart of $kg\ CO_2e$ vs Kilogram (kg) of Consumed Food

Legend:
- Post Farmgate Emissions (includes processing, transport, retail, cooking, waste disposal)
- Production Emissions (includes all emissions before product leaves the farm)

Values: Lamb 39.2, Beef 27.0, Cheese 13.5, Pork 12.1, Farmed Salmon 11.9, Turkey 10.9, Chicken 6.9, Canned Tuna 6.1, Eggs 4.8, Potatoes 2.9, Rice 2.7, Peanut butter 2.5, Nuts 2.3, Yogurt 2.2, Broccoli 2.0, Tofu 2.0, Dry Beans 2.0, Milk (2%) 1.9, Tomatoes 1.1, Lentils 0.9

Purchasing low carbon goods and services

- Specifying third party certified labels and logos
- Post consumer waste content
- Energy using products/equipment selection
- Packaging reductions
- Selecting durable and repairable goods
- Managing end-of-life disposal of goods
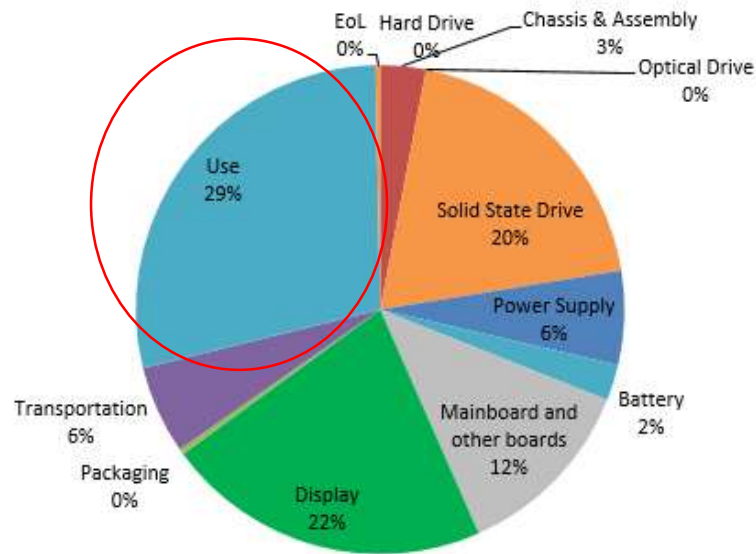- Consolidation and optimizing delivery

Specifying labels and logos

- Criteria assess environmental and social impacts associated with brand owners supply chain
- Labels denote the brand has achieved a level of environmental protection
- Labels protect ecosystems services including lower carbon and/or climate resilience
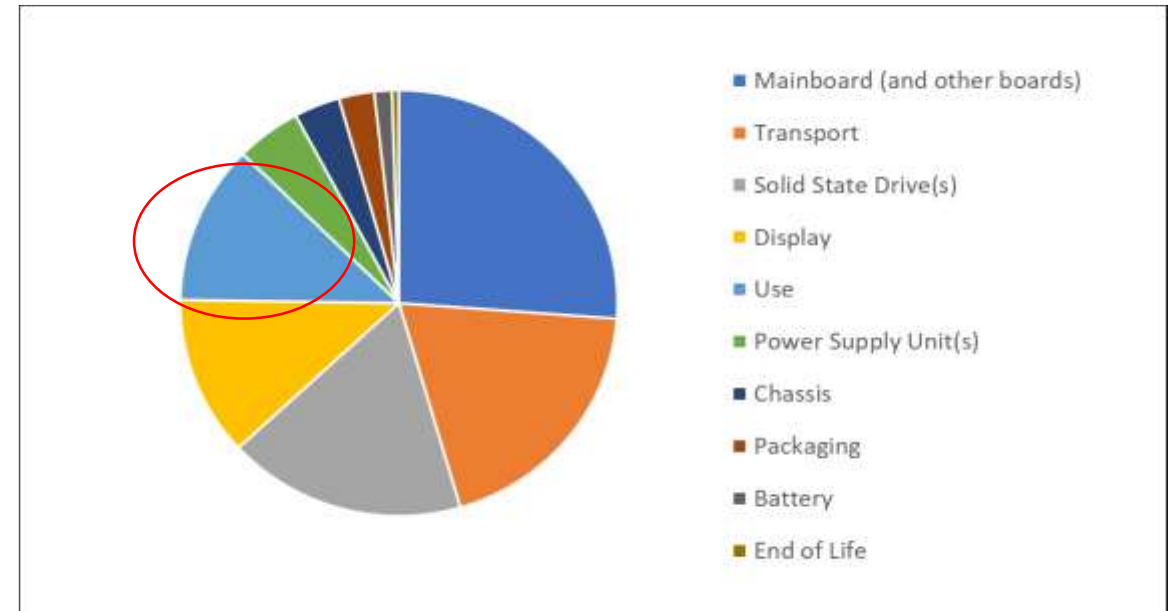
Comparing similar business laptops

- Lenovo ideapad 530S-14
  - 282 kg CO2e +/- 55 kg of CO2e

- HP Elitebook 840G6 Notebook PC
  - 375 kg CO2e +/- 65 kg og CO2e

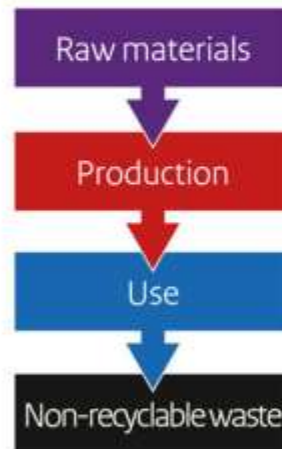https://www.lenovo.com/us/en/compliance/eco-declaration

- Eco-Declarations and EPEAT certification supports the purchase of low carbon and sustainable IT equipment.
- Purchasing 1, 000 Lenovo ideapads instead of HP elite books = reduction carbon emissions by 100 metric tons (removing 20 passenger vehicles from the road for one year)
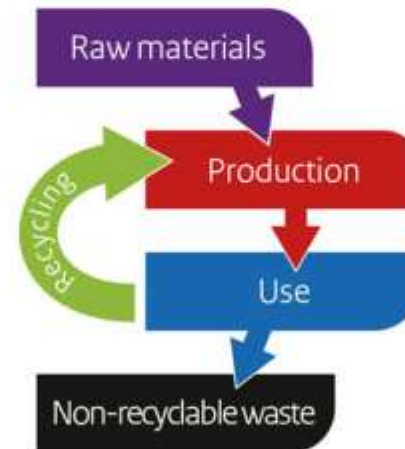
Post consumer waste content

- Reduce emissions associated with resource extraction
- Reduces energy consumed to manufacture products
- Reduce emissions associated with landfill waste

From a linear to a circular economy

Linear economy

Raw materials → Production → Use → Non-recyclable waste

Reuse economy

Raw materials → Production → Use → Non-recyclable waste (Recycling)

Circular economy

Raw materials → Production → Use → Recycling

Comparing copy paper with and without PCW

- RETSD carbon hotspot - 870 metric tons CO2e (no PCW content)

- Carbon content for same paper purchase amount at 30% PCW - 670 metric tons
  - Reduction of 200 metric tons per year (removing 40 passenger cars from the road for one year)

- This benefit is associated with RETSD's purchase of copy paper only
  - additional carbon reductions are associated with the division's decision regarding PCW content of envelopes, toilet paper, paper towel etc.

- Decisions to select FSC certified paper, would further reduce forestry logging impacts including protection of forest biodiversity enhancing climate resiliency

Paper benefits calculated using Environmental Paper Network Version 4

Energy using products and equipment

- Review energy source options
- Determine right size/ proper size equipment needs
- Select equipment that is efficiently powered

Comparing energy source options

- Fuel purchasing with biofuel content

- Natural Resources Canada (CO2e kg/L)

- Gasoline 2.29

- E10 2.21

- Diesel 2.66

- B5 2.65

- B20 2.62

- If 1,000,000 Litres of B20 (diesel with 20% biodegradable fuel) is purchased to replace pure diesel fuel = reduction in 40 metric tons of CO2e. (removing eight passenger vehicles from the road for one year)

Biodiesel

B20
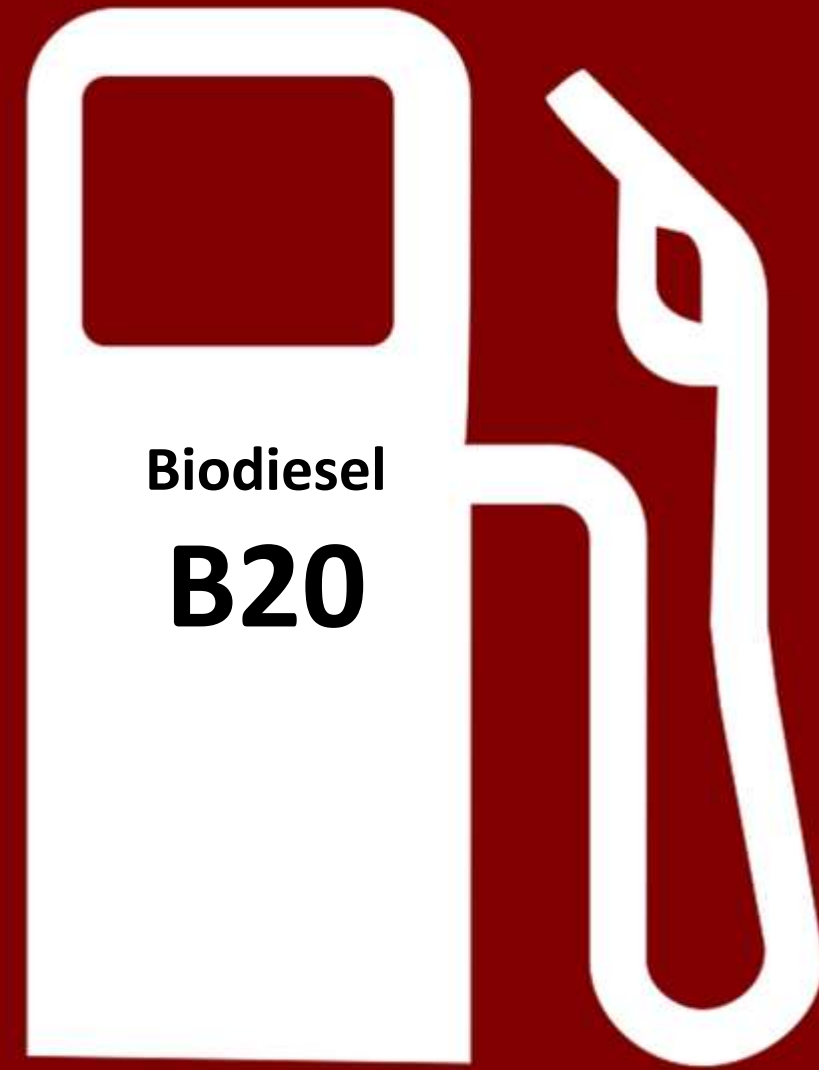
Packaging reductions

- In procurement documents, look for suppliers that:
  - Provide packaging made with recycled fiber content
  - Have taken steps to reduce packaging
  - Offer a take back/reuse program for packaging materials
  - Minimize/prohibit the use of non-recyclable packaging (e.g. Styrofoam, moulded plastics

Good product, bad packaging

Selecting durable and repairable goods

- Extend the life span of goods with high embodied carbon
    - Ensure sufficient warranty for extended life

- Purchase items that are easy to repair and from vendors that offer repair services

Managing end of life disposal

- Ensure the possible issues associated with end of life are considered to reduce carbon emissions

- If possible, select items that can be collected and recycled locally

Consolidation and optimizing delivery

- Consolidate product delivery schedules
  - From every day to once a week
- Request proper route planning
- Request efficient vehicles
- Request trained drivers - no idling

Collaborative buying strategies

- Enhance the scope of influence with suppliers

- Collectively create greater carbon reductions than any one entity alone
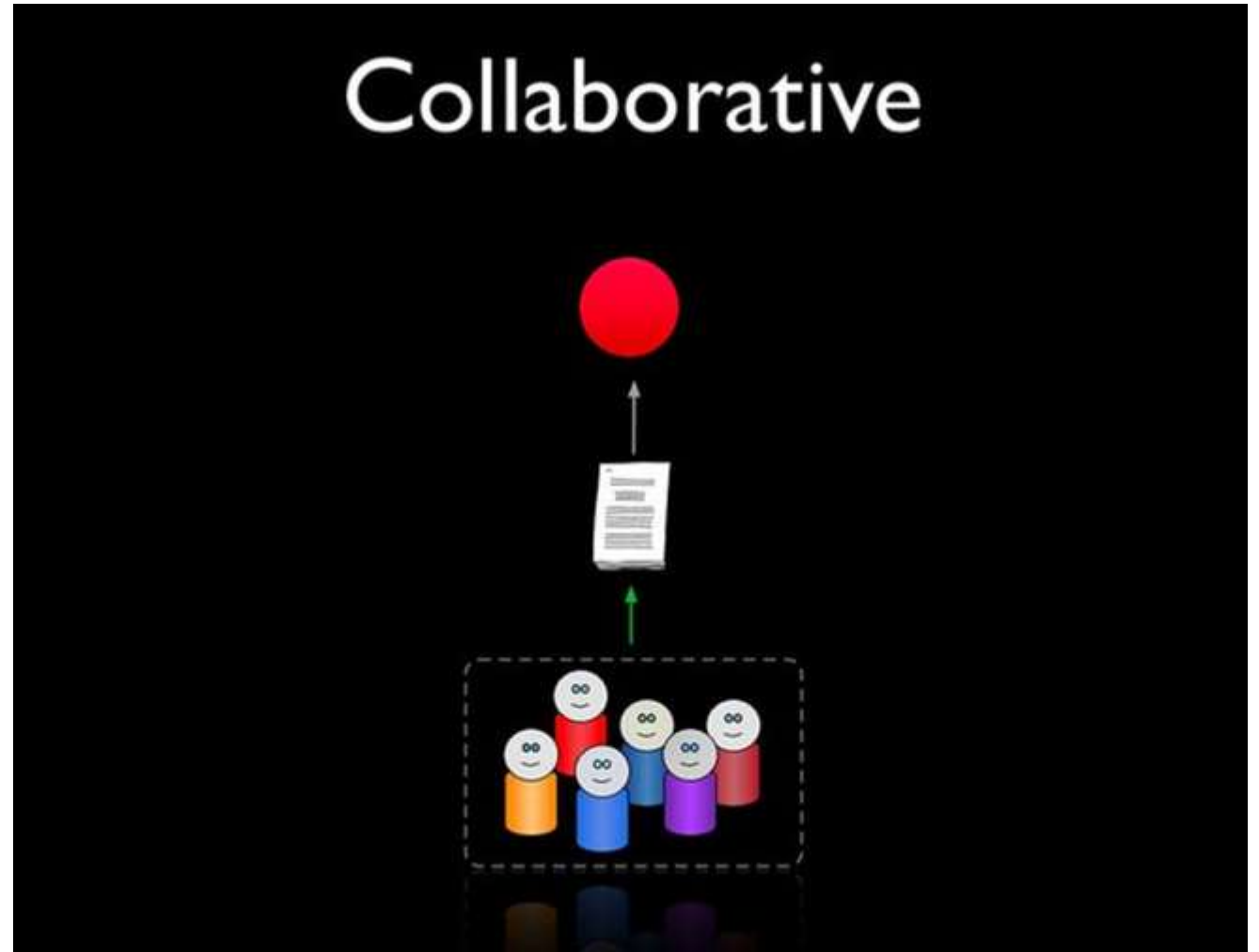
Development of consolidation centres

- Consolidate and delivery of a wide variety of supplier goods (uniforms, office supplies, furniture, paper, chemicals food, etc.)

- Distribute on a scheduled basis

- Significant reduction in transportation related emission

Power of procurement to meet environmental goals

- In Canada procurement of goods and services
  - Accounts for 33% of government Expenditures
  - About 13% of Canada's GDP
- Procurement can:
  - Stimulate or lead markets where government demand is significant.
  - Help transition our community to low carbon
- Change the way we think
  - Selecting lower carbon content of foods for food service
  - Embracing electric vehicles and EV infrastructure.
  - Selecting lower embodied energy building materials (LEED)
  - Etc.