Life cycle analysis of a paper cup
A look at the production of disposable cups

Legend
- Energy
- Water
- Pipeline transport
- Vehicle transportation (creates emissions)

**PAPER PRODUCTION**
- **INPUT**
- **PROCESS**
- **OUTPUT** (waste)
  - Harvest trees
  - Debark
  - Chip
  - Pulp
  - Refine/finish

**PLASTIC PRODUCTION**
- **INPUT**
- **PROCESS**
- **OUTPUT** (waste)
  - Crude oil extraction
  - Distillation in oil refinery
  - Manufacturing of plastics, polyethylene

**CUP PRODUCTION**
- **INPUT**
- **PROCESS**
- **OUTPUT** (waste)
  - Paper coating, printing
  - Cup formation
  - Packaging
  - Distribution
  - Use
  - Landfill

**INPUT**
- crude oil extraction
- distillation in oil refinery
- manufacturing of plastics, polyethylene

**OUTPUT** (waste)
- CO₂, NOₓ, SO₂, waste water
- VOCs, ammonia, among other chemicals
- various chemicals, emissions
- delivered for cup manufacturing (see third column); also used in packaging manufacturing
- delivered for cup manufacturing (see third column)

**USE AND DISPOSAL**
- CO₂, NO₂, methane, leachates

**RAW MATERIAL EXTRACTION, PROCESSING**
- Harvest trees
- Debark
- Chip
- Pulp
- Refine/finish

**MANUFACTURING**
- created emissions

**USE**
- delivered for cup manufacturing (see third column)

**DISPOSAL**
- CO₂, NO₂, methane, leachates