



Building Leadership Excellence



# Water Based Barrier Coatings

Leading the future use of paper



May 1-4  
**PaperCon 2011**  
Northern Kentucky Convention Center

**RETHINK PAPER:**  
**Lean and Green**

# OVERVIEW

- Purpose: Review the use of barrier coatings for paper packaging both now and in the future
- Considerations/Factors
  - Drivers – traditional and water based materials
  - Needs - performance, environmental, regulatory
  - Practices – materials, application, converting
  - Future trends
- Payoff: Lead the future use of paper for barrier applications.

## Put simply...

Coatings improve the performance of paper and packaging performance.



Without Coatings



With Coatings

# Agenda

1. Drivers

2. Needs

3. Practices

4. Future Trends

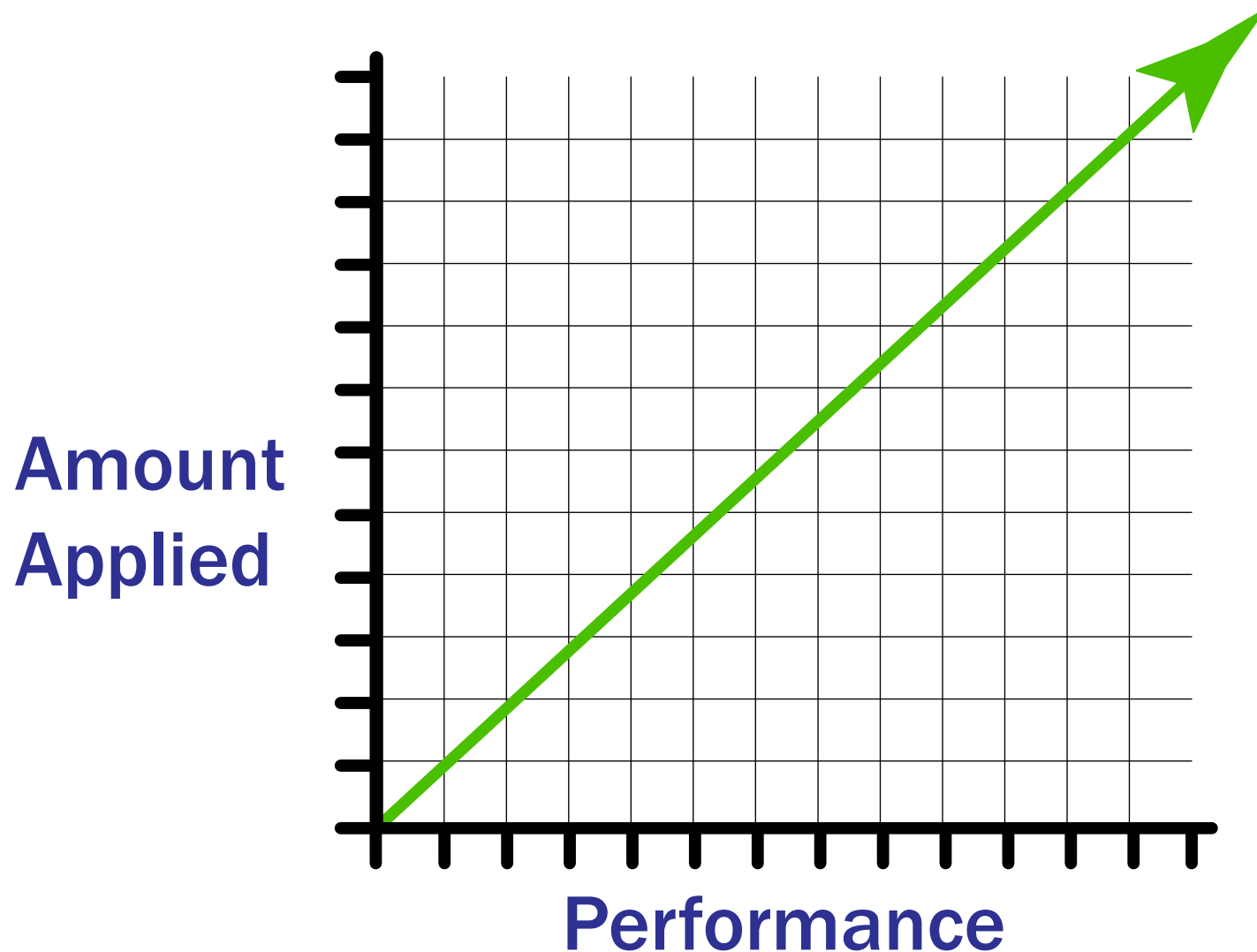
# Drivers

1. Cost – selling price, applied cost, cost of use
2. Performance



- If both are present, better chance of commercial success.

# Polyethylene/Wax Treatment



# Drivers - Coatings

- Nearly infinite possibilities
  - Polymers
  - Additives
  - Synthetic emulsions
  - Inorganic barriers
- Dial in on specific properties



# Agenda

1. Drivers

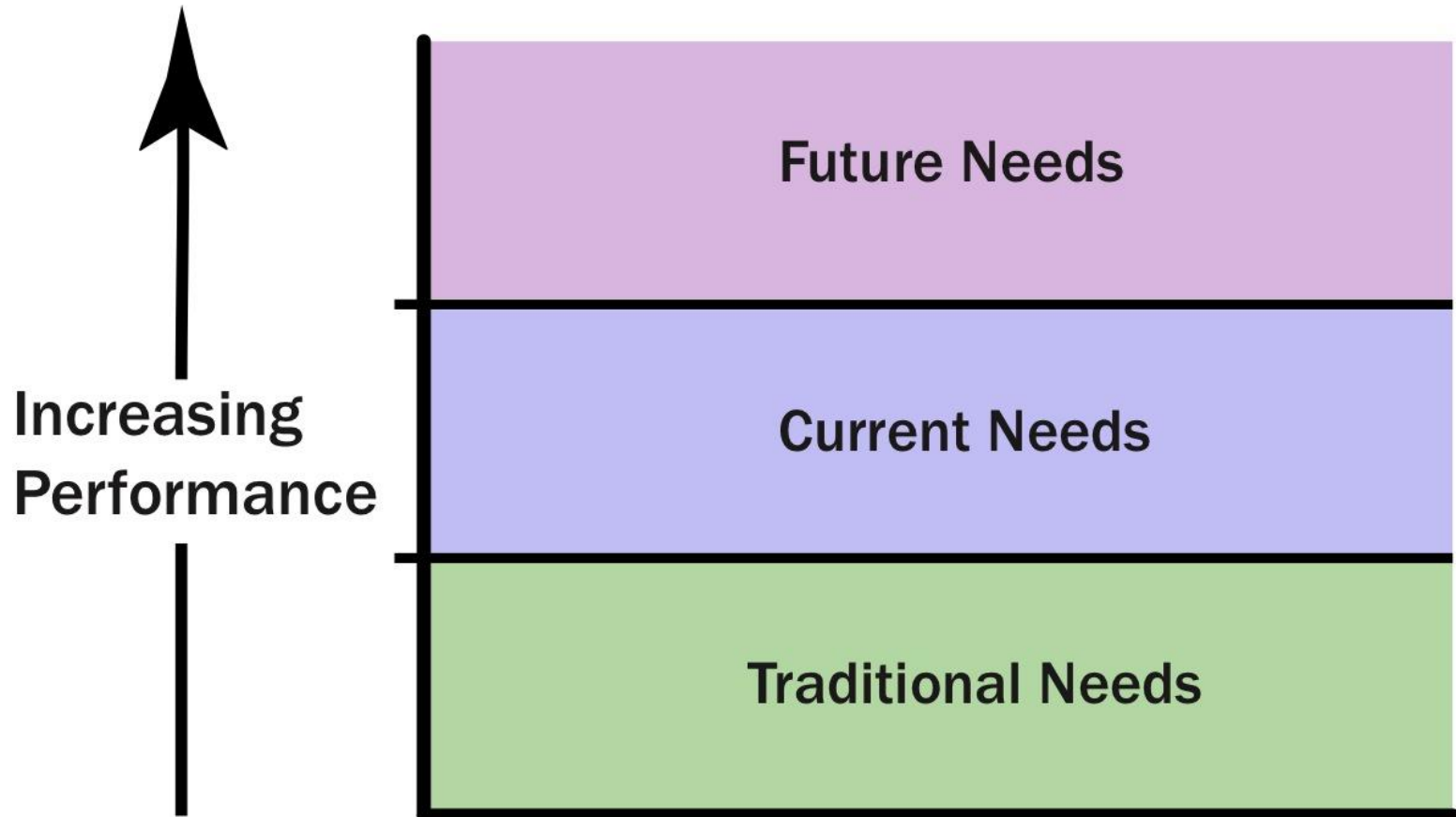
2. Needs

3. Practices

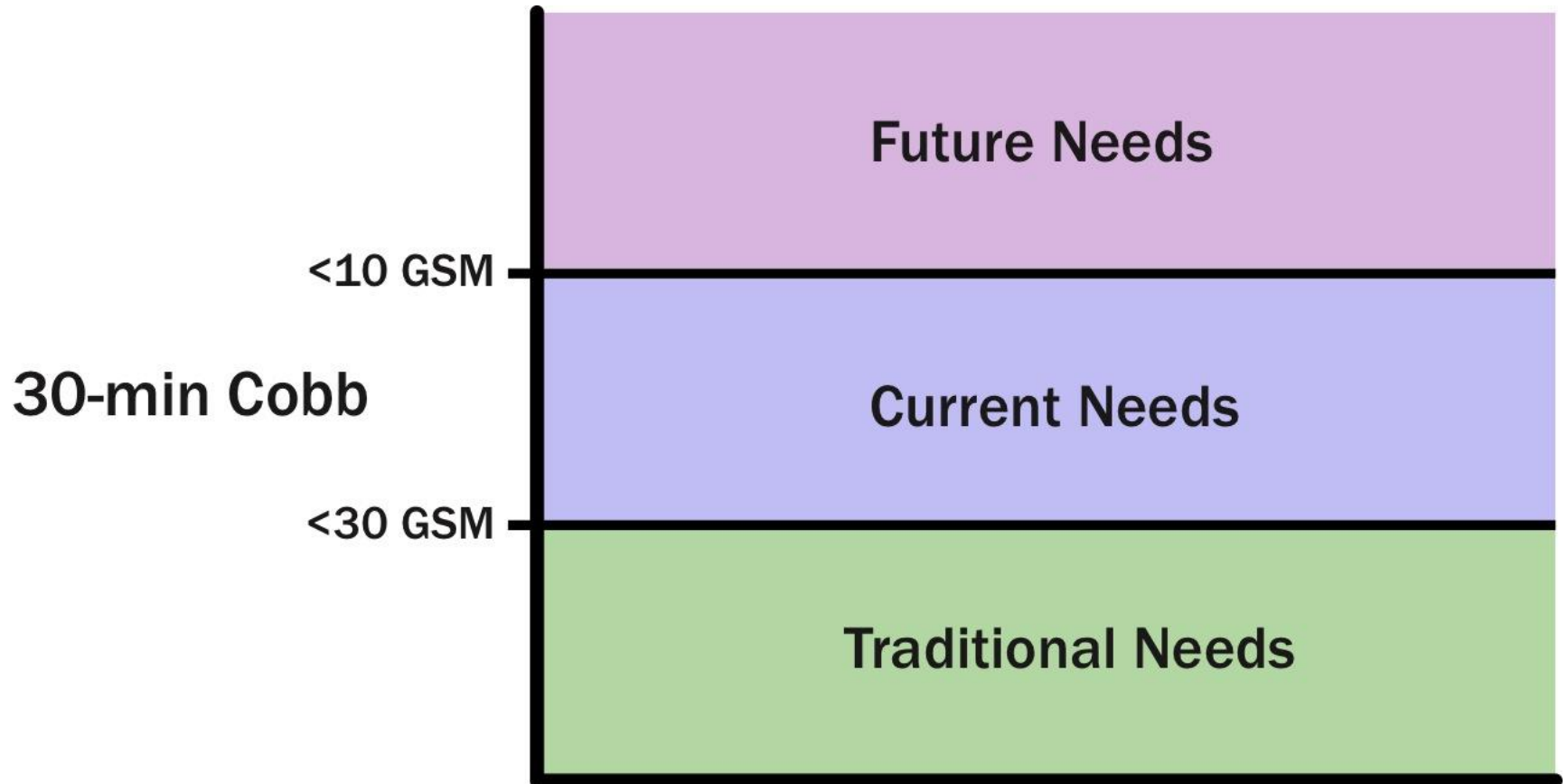
4. Future Trends



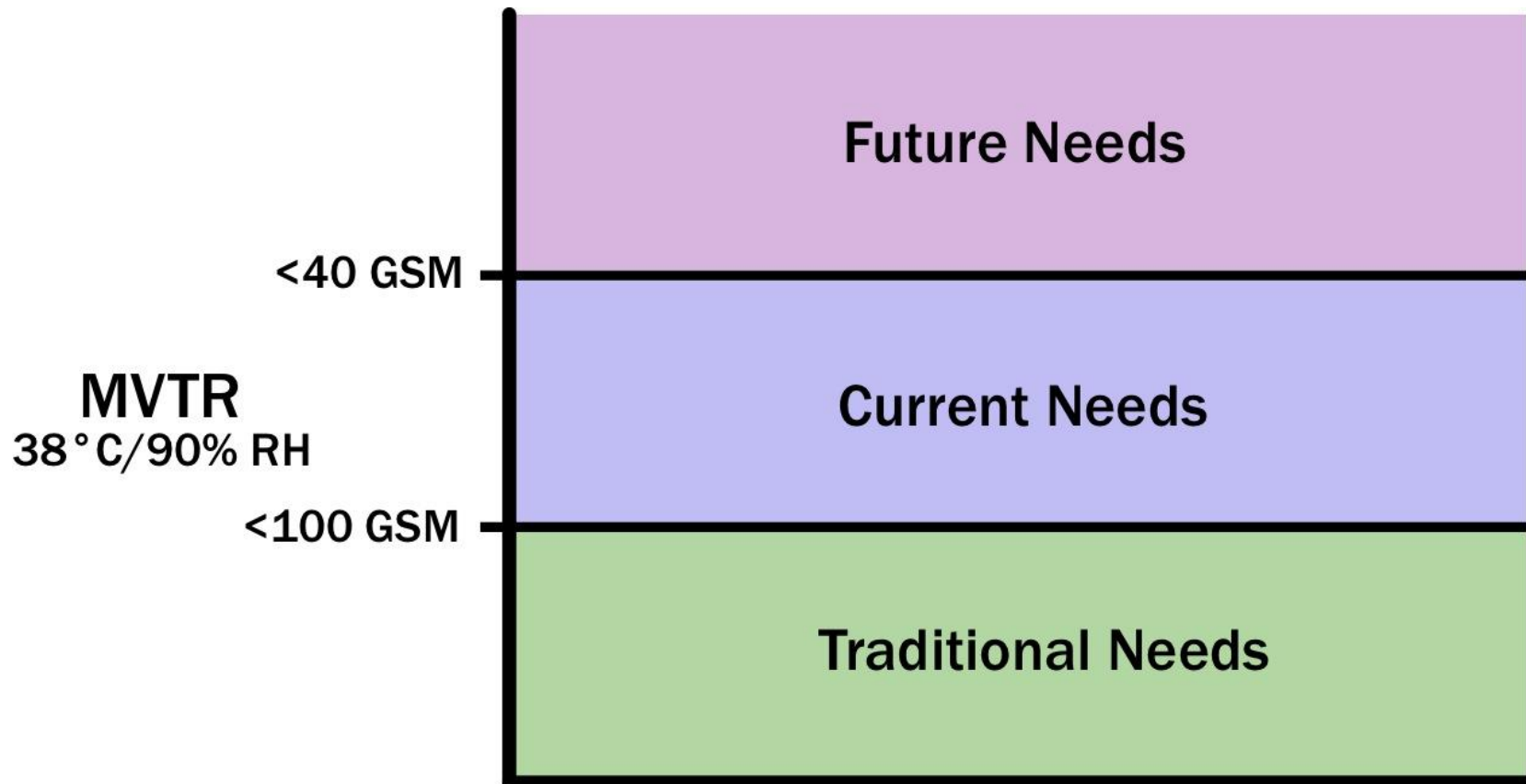
# Performance



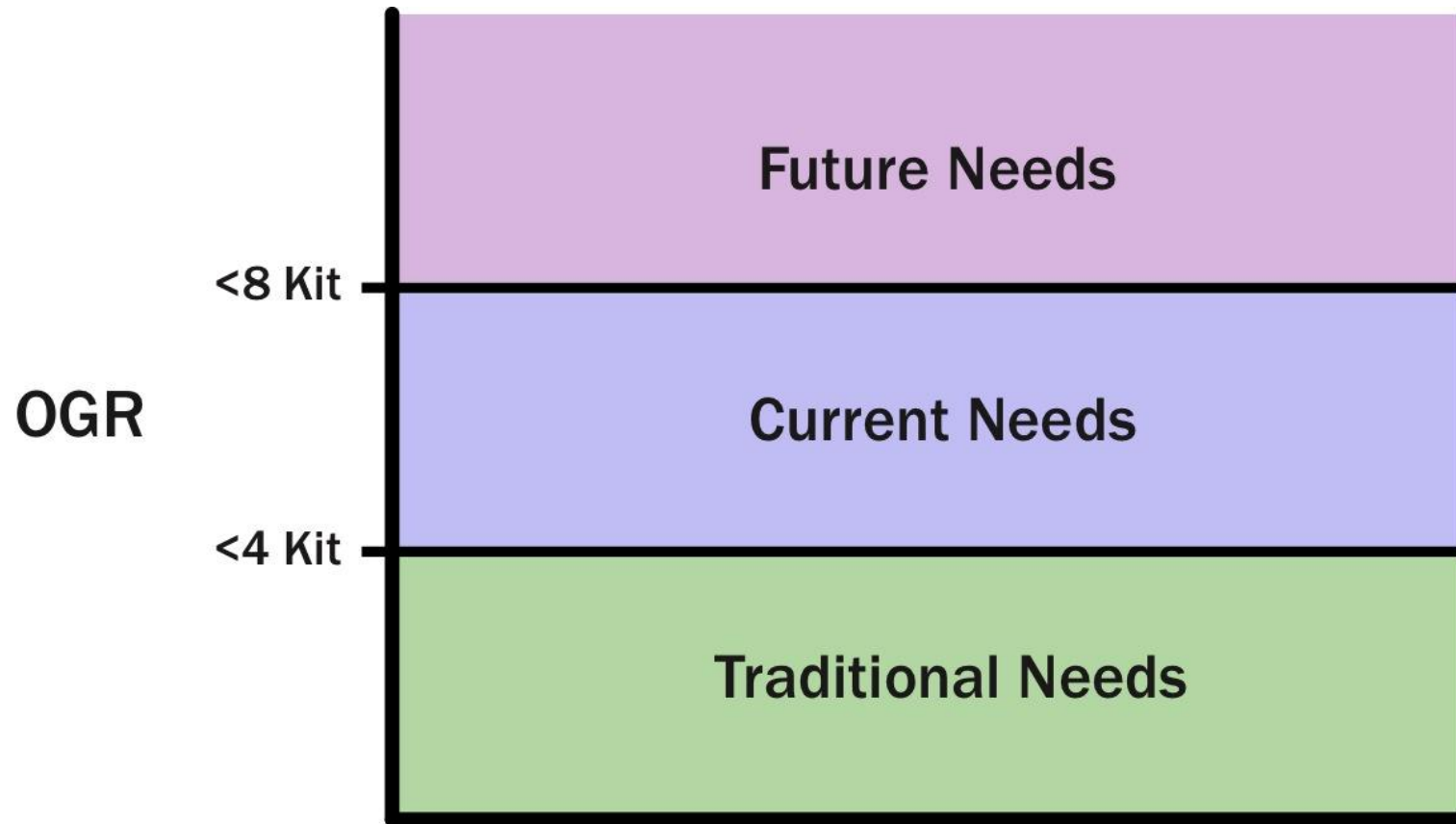
# Water Resistance



# Water Resistance



# Oil & Grease Resistance



# Recyclability

- Paper replaces EPS



# Needs – Environmental

1. Reuse/recover trends
  - FBA Protocol
2. Biodegradability trends
  - ASTM 5338
3. Compostability trends
  - ASTM 6868
4. European mineral oil migration



# Compliance

- In U.S.
  - Local, State, & Federal
    - Safe to use, handle, & process
    - Food contact
    - TSCA
- Outside U.S.
  - Chemical Inventories in 9 Countries
  - REACH and EINECS in Europe
  - DSL in Canada



# Agenda

1. Drivers
2. Needs
3. Practices
4. Future Trends



# Practices - Materials

- Lightweight
- Folding Carton
- Corrugated/Laminated
- Molded Pulp



# Practices – Application Methodology

Blade

Brush

Water box

Rod

Spray

Roll

Gravure – direct, indirect, reverse

Dip

Air Knife

Curtain

Premetered transfer

Flexo

Slot die

Size press

# Practices - Converting

Folding

Bending

Laminating

Glueing

Abrading

Scoring

Heating

Creasing

Scratching

Corrugating

Cooling

Sealing

Printing

# Agenda

1. Drivers
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# Future Trends

## Environmental



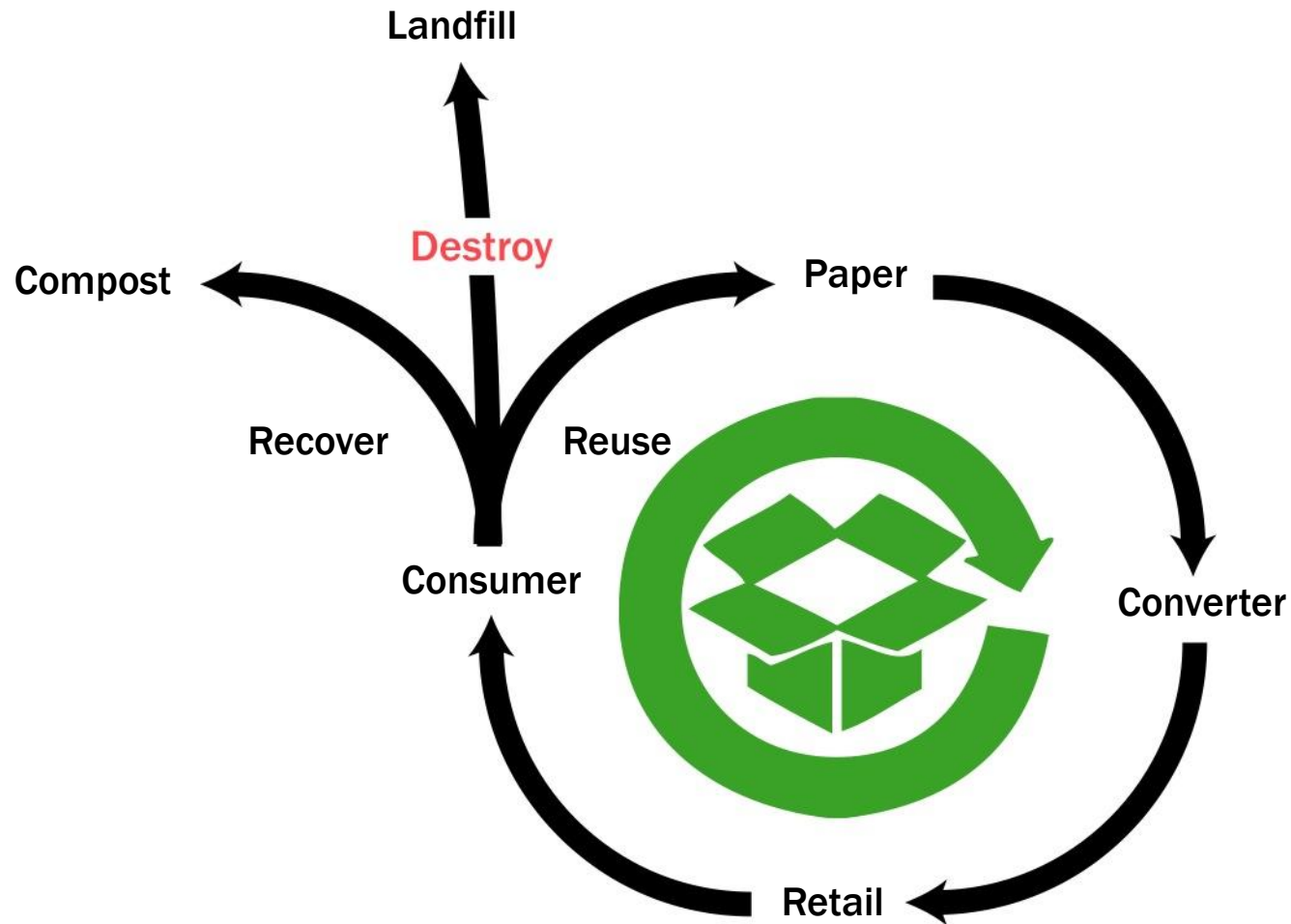
Safe for the Environment



Use renewable resources



# Future Trends



# Water Based Barrier Coatings

- *Leading the future use of paper*

