

Welcome to INDA

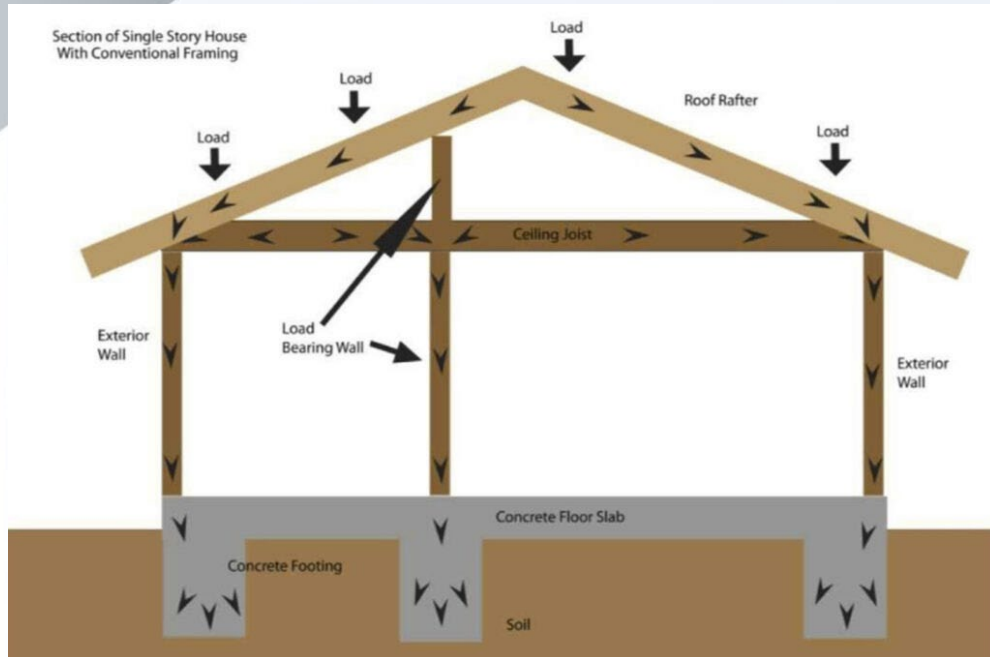


11 October 2022

Agenda

- INDA – our structure to support the industry
- Strategic Vision and Value Propositions
- The INDA brands

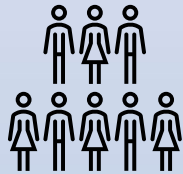
The INDA “House”



The foundation



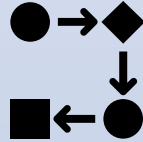
Strategy



People



IT/Analytics



Processes



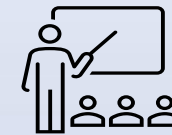
The “roof”

Nonwovens Industry

The supports - Goals



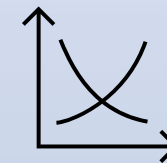
Conf & Events



Training



Advocacy & GR



Data & Analytics



Thought
Leadership



News, articles

INDA 3-year Strategic Vision



The Nonwovens Industry will have grown and become recognized globally by its customers and other stakeholders as a versatile leader in delivering essential, environmentally responsible materials and products.

INDA's Value Proposition

Shape the External Environment and help the Nonwovens Industry and their Customers achieve Business Growth

1. Convene and Connect the Industry

2. Achieve Industry relevance among key stakeholders

3. Advocate for the Nonwovens Industry

4. Deliver Market Insights for Better Decision Making

5. Provide Training Programs to Sustain the Industry's Innovative Edge

Foster thought leadership and action on issues of importance to the industry

The Brands of INDA



INDA Media



October 11, 2022

The North American Nonwovens Markets

A Demand–Side and Supply–Side View

Brad Kalil, Director of Market Intelligence & Economic Insights



**Association of the
Nonwoven Fabrics Industry**
ADVANCING ENGINEERED MATERIAL SOLUTIONS

Nonwovens Are...



Successful, growing, continuously evolving,
dynamic, and extremely diverse industry

Absorbent Hygiene
Filtration (Air and Liquid)
Wipes
Medical/Surgical
Disposable PPE
Other Disposable

Vehicle Construction
Building Construction
Home & Office Furnishings
Geosynthetics
Apparel (Durable PPE)
Other Durable

262 Categories

A \$18.9B Industry in North America

2021 Nonwoven Material at the Producer Level

Nonwovens Are...



Growth Exceeds GDP Growth

1000s of
Nonwovens

Variety of Forming & Bonding Processes

Variety of Raw Materials

Variety of End-Uses

Innovation
Material Science
Technology

Tends to Stay Where Produced

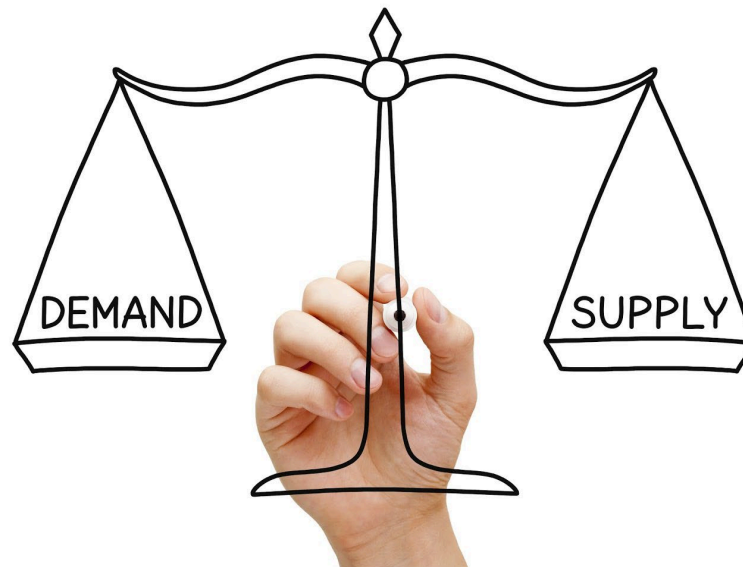
**Very Successful and Dynamic Industry
In North America**

Today's Discussion



 Supply Side Dynamics and Trends

 Demand Side Dynamics and Trends



Today's Discussion



Supply Side Dynamics and Trends

- Size by Process and End-Use
- Steady Capacity Growth
- Capacity Investments

An **INDA** Member Exclusive

North American Nonwovens

Supply Report 2021

A Review of North American Capacity, Production
and Trade for 2021

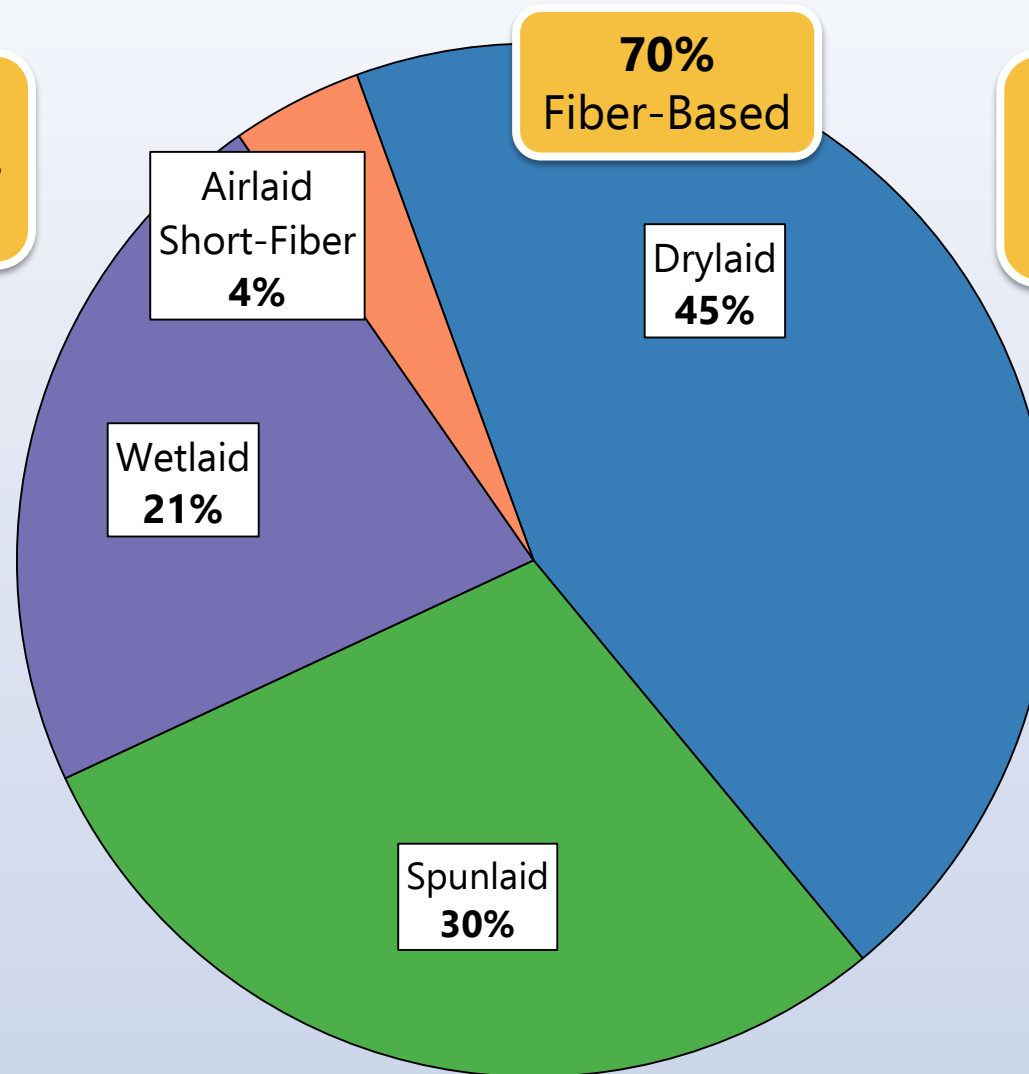
 **Association of the
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ADVANCING ENGINEERED MATERIAL SOLUTIONS

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North American Capacity End of 2021

North America Capacity by Process in Tonnes, 2021

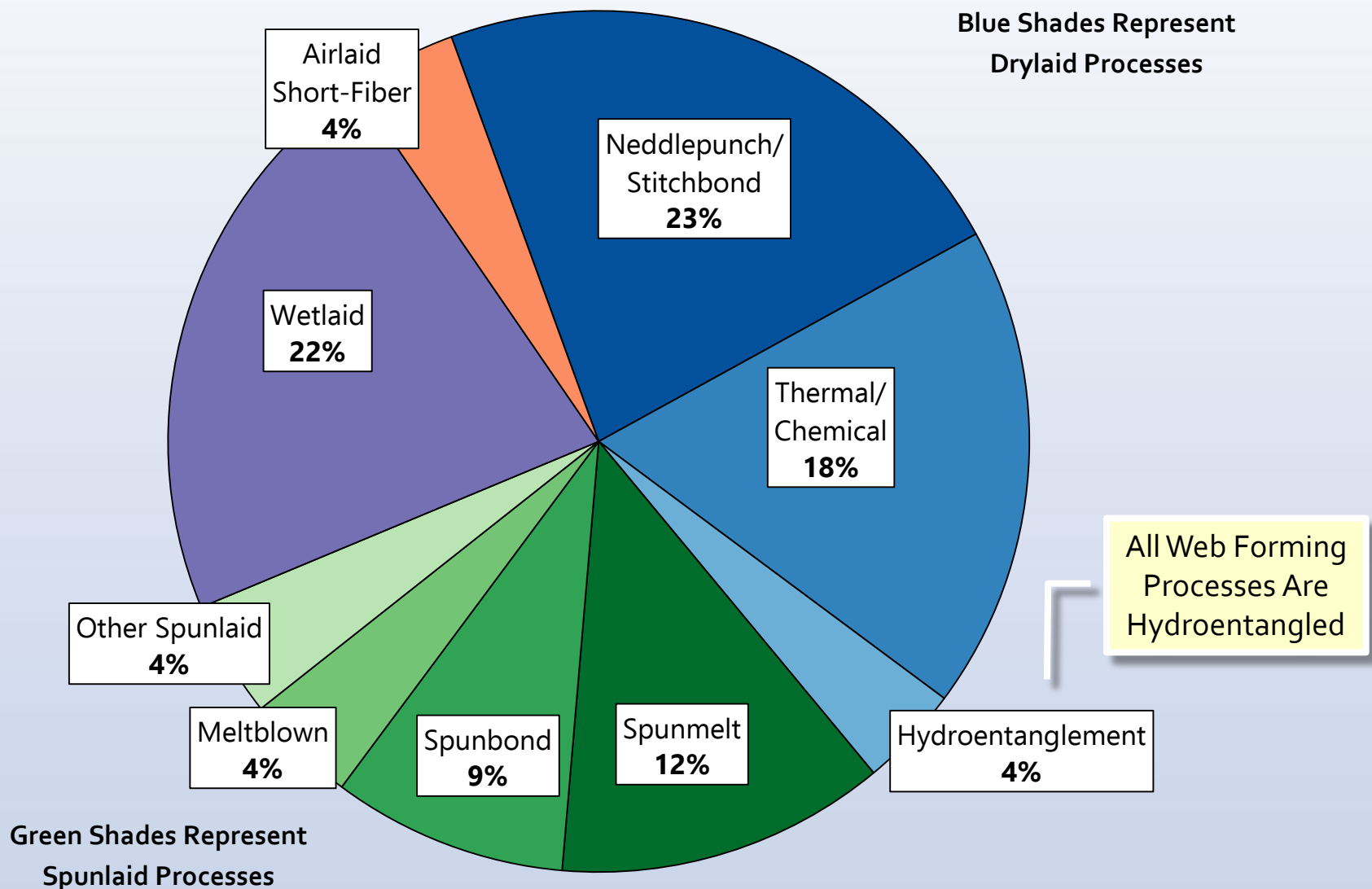
Total North America
5.540 million tonnes
≈ **940 lines**



≈ **215 Companies**
Top 10 41%
Top 20 59%

Variety of Processes & Attributes

North America Capacity by Detailed Process, 2021



Variety of End-Uses

North America Production by End Use in Tonnes, 2021

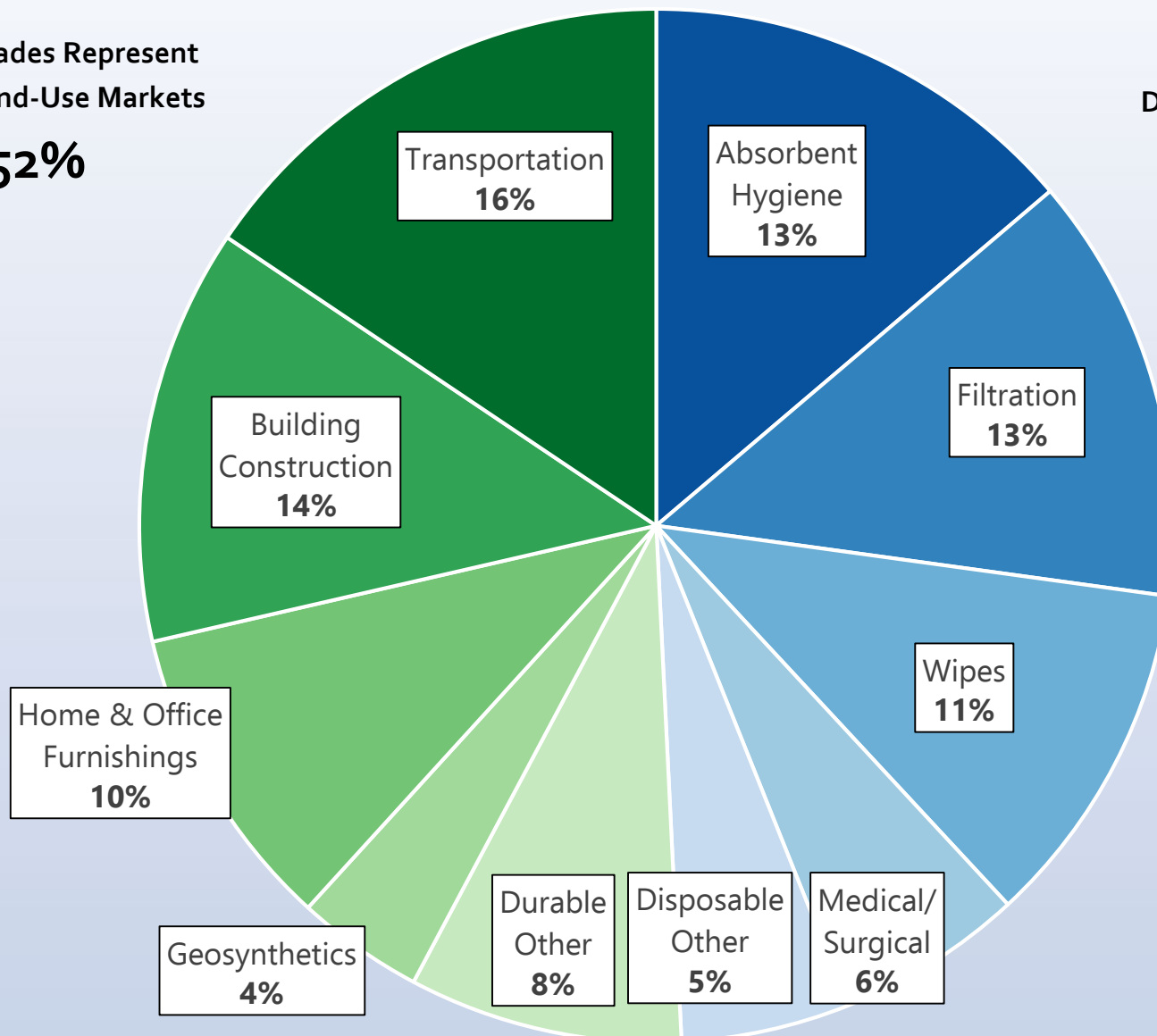
Internal Consumption
≈ 35%

Green Shades Represent
Durable End-Use Markets

52%

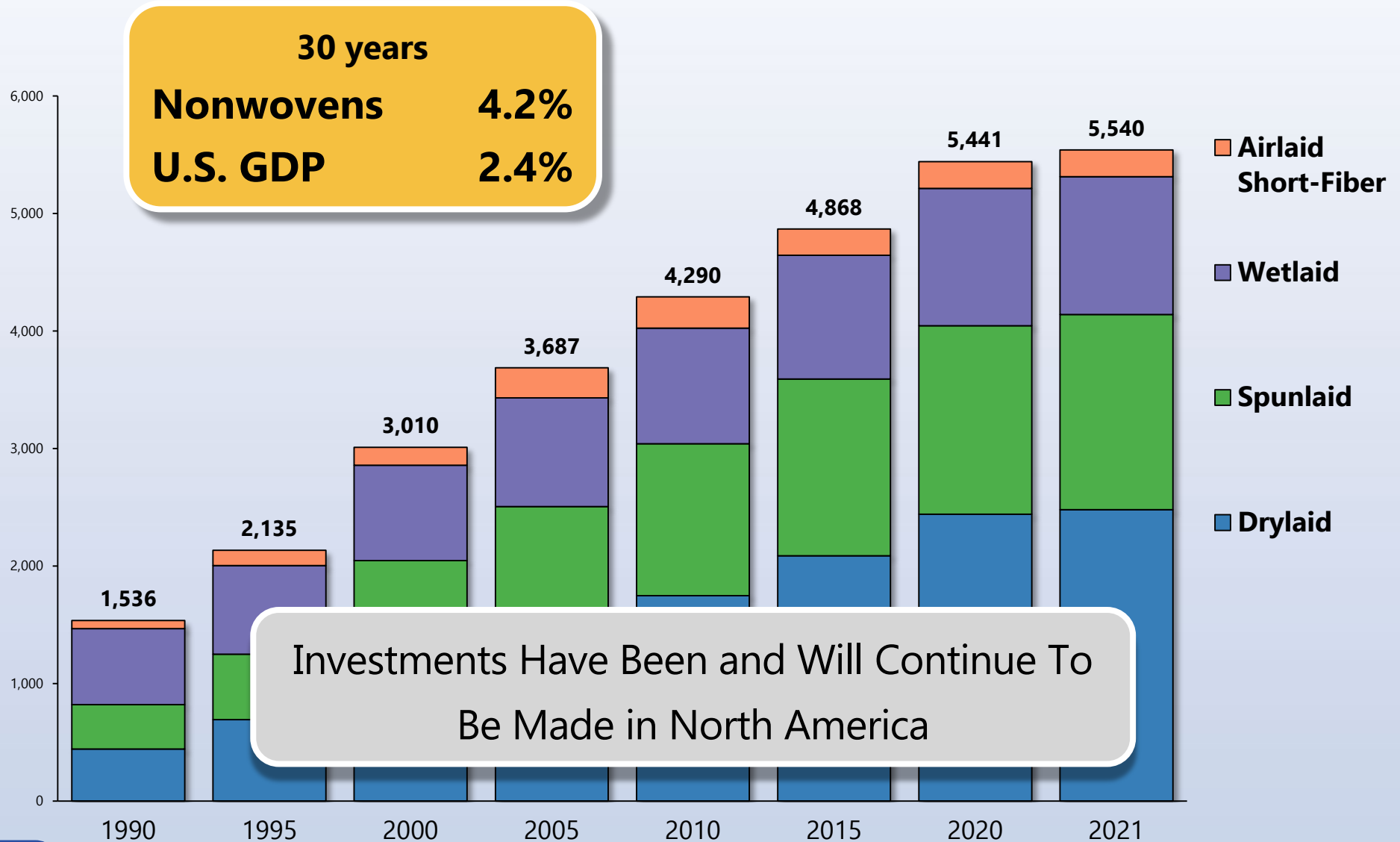
Blue Shades Represent
Disposable End-Use Markets

48%



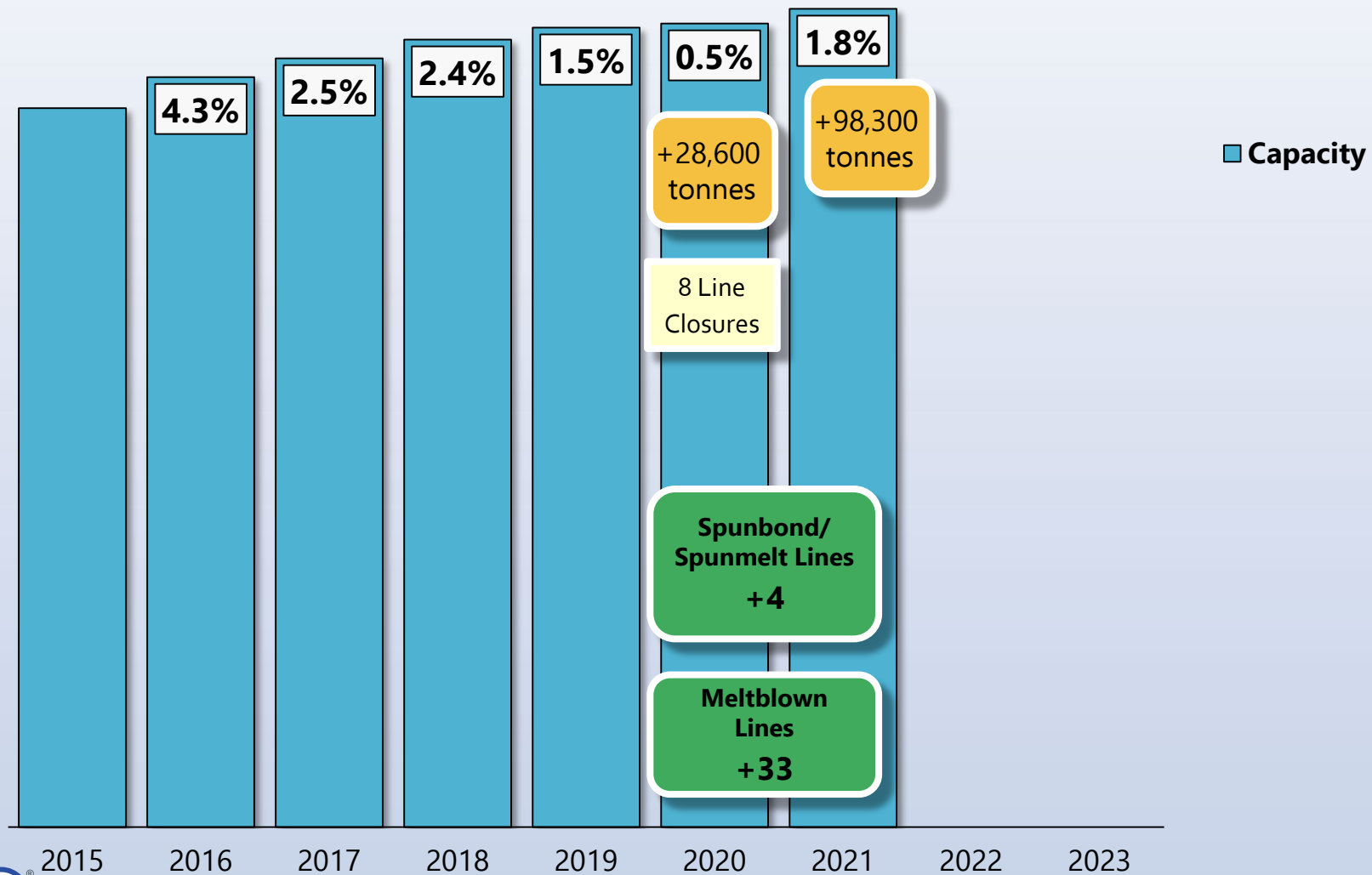
North America Investments Exceed GDP

North America Capacity by Process, 1990 to 2021, in Thousands of Tonnes



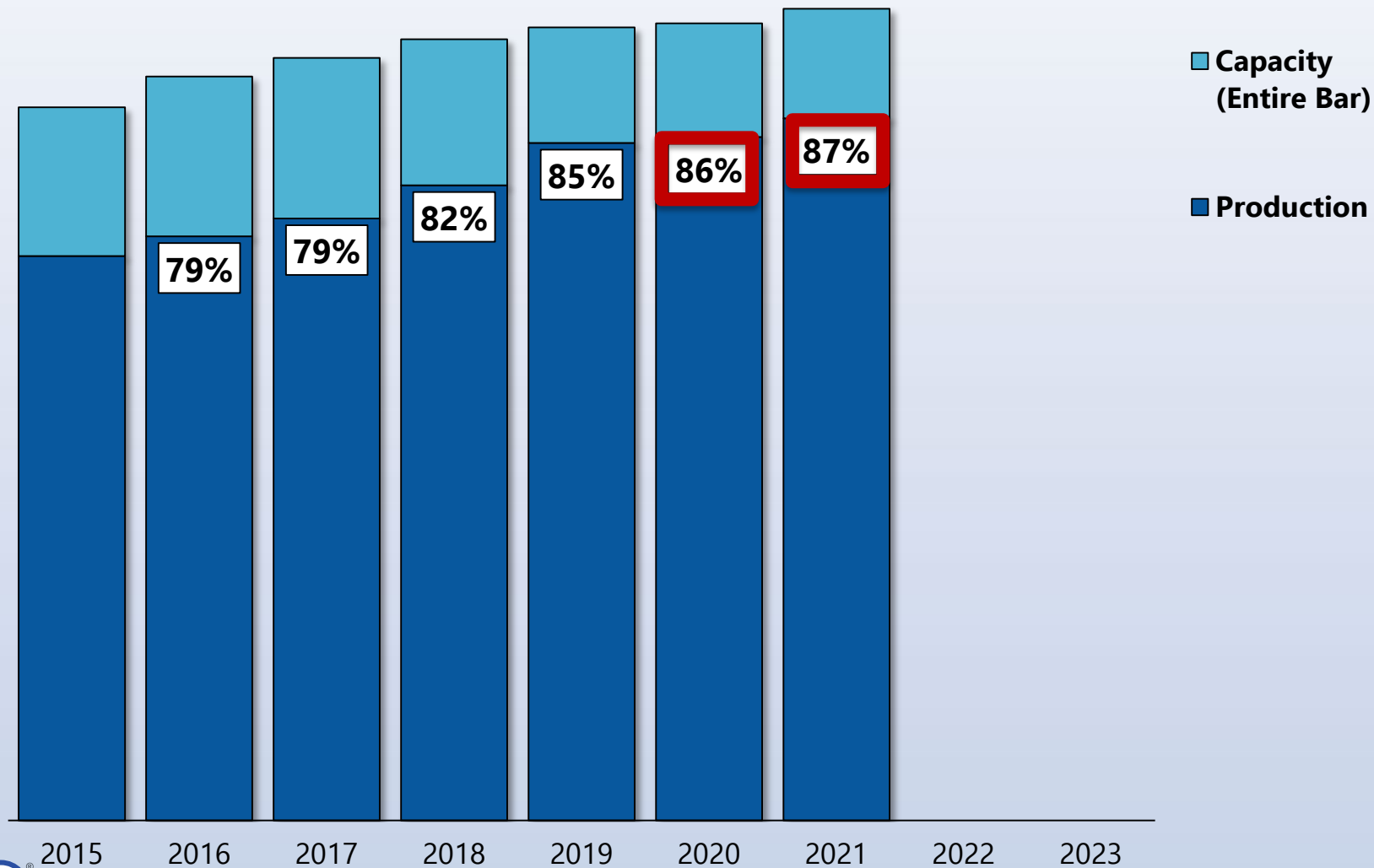
Industry Reacts with Spunlaid

North American Capacity, Tonnes, 2015–2021 with AAGR



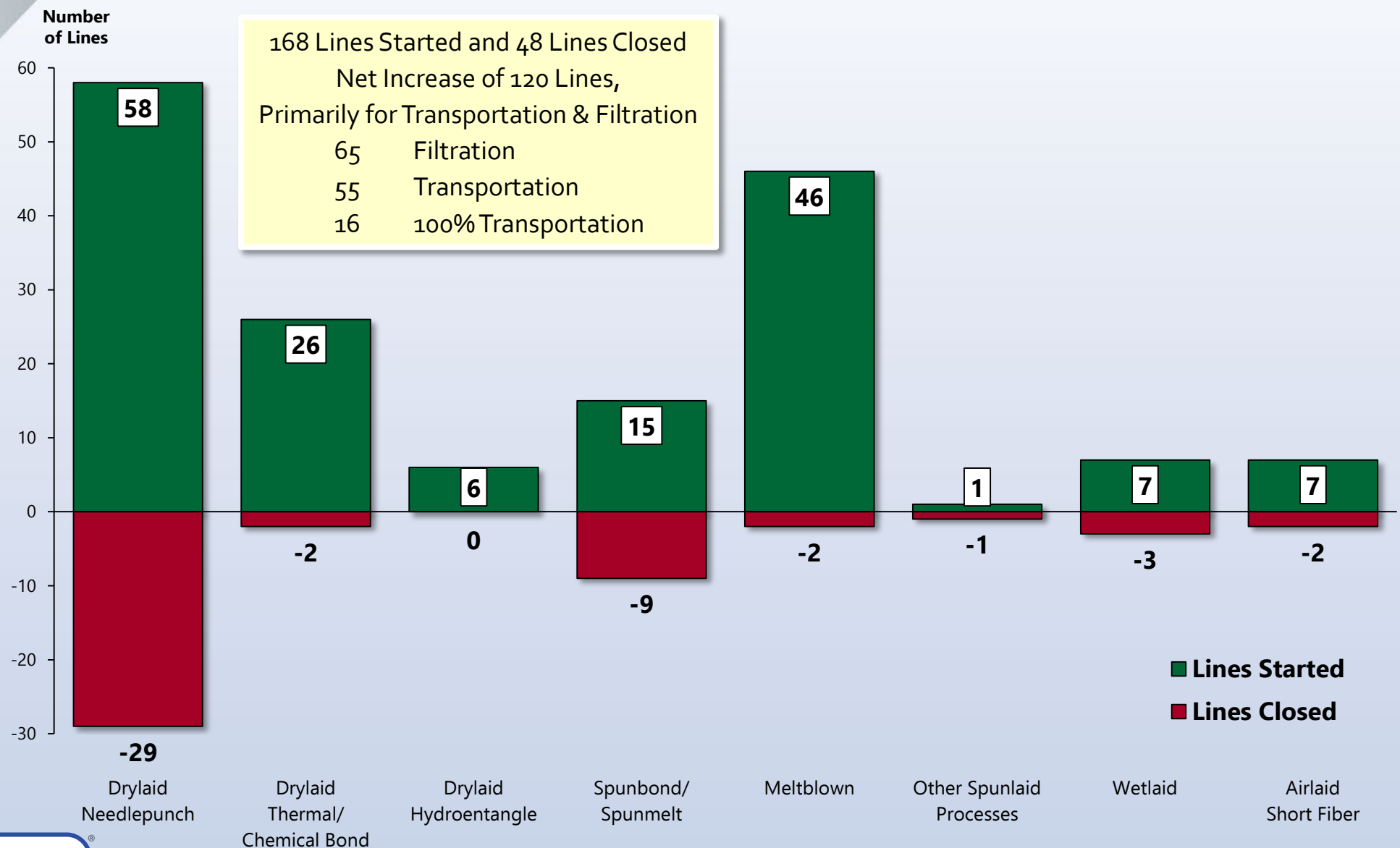
Operating Rates Diverge

North American Capacity, Production & Operating Rate, Tonnes, 2015–2021



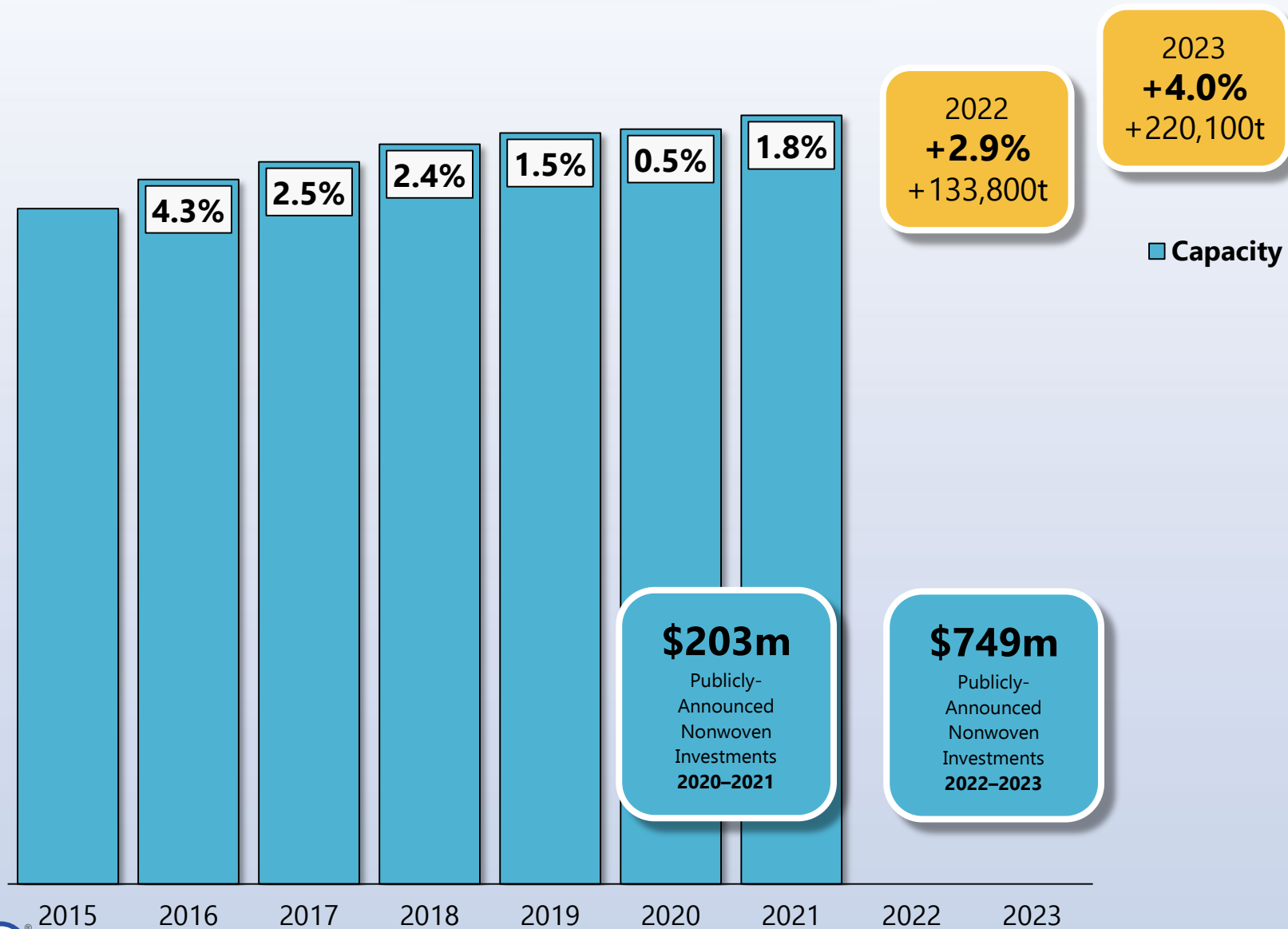
Lines Start... and Lines Close

North America Capacity Changes by Line Type, 2015–2021



Significant Increase in Investment

North American Capacity, Tonnes, 2015–2023 with AAGR



Today's Discussion



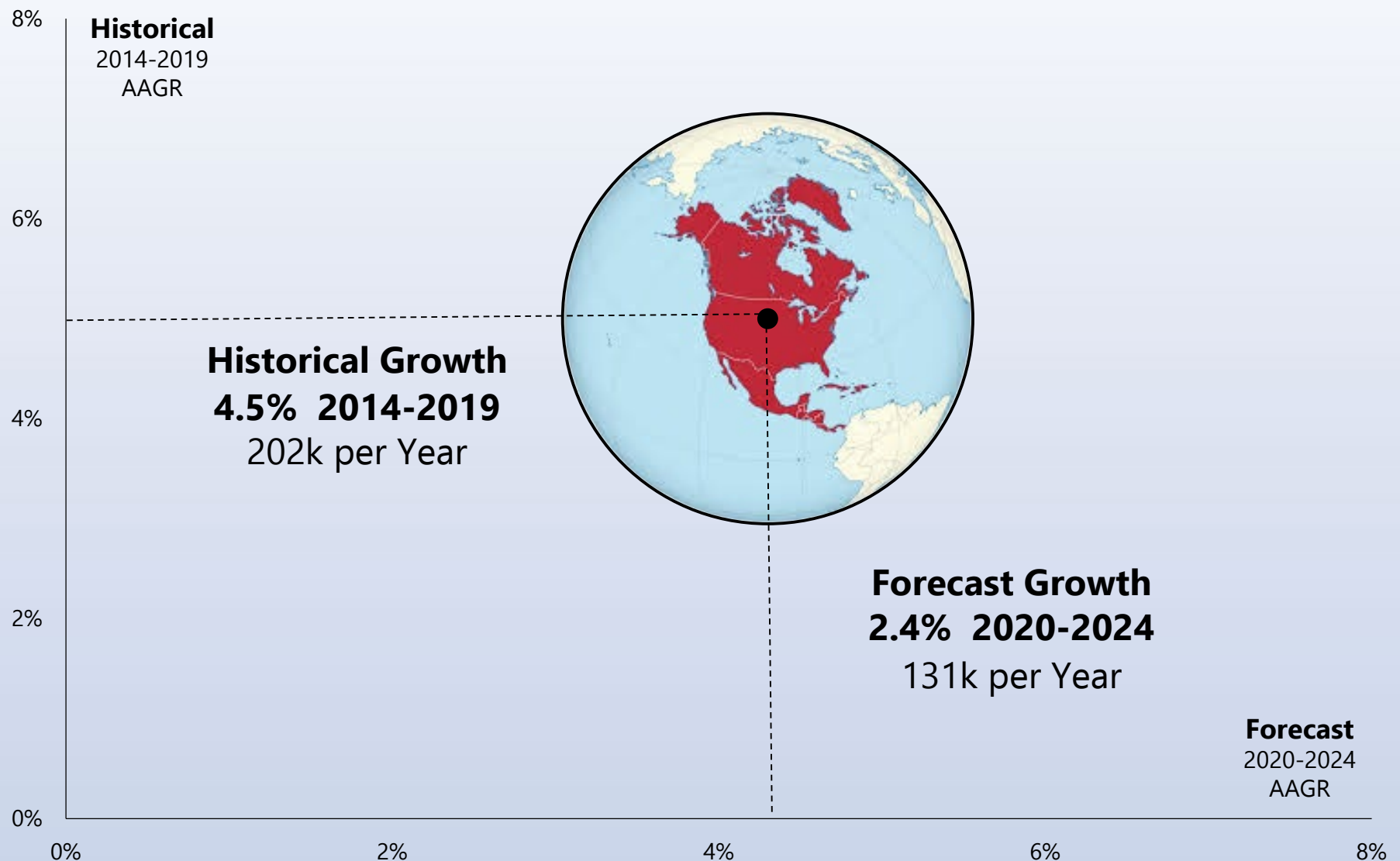
Demand Side Dynamics and Trends

- Existing Markets Expanding
 - Economic Drivers
 - Demographic Drivers
 - Product Innovation ●
- Taking Share from Other Materials ●
- Entirely New Uses (Markets) ●

Material / Machinery Development

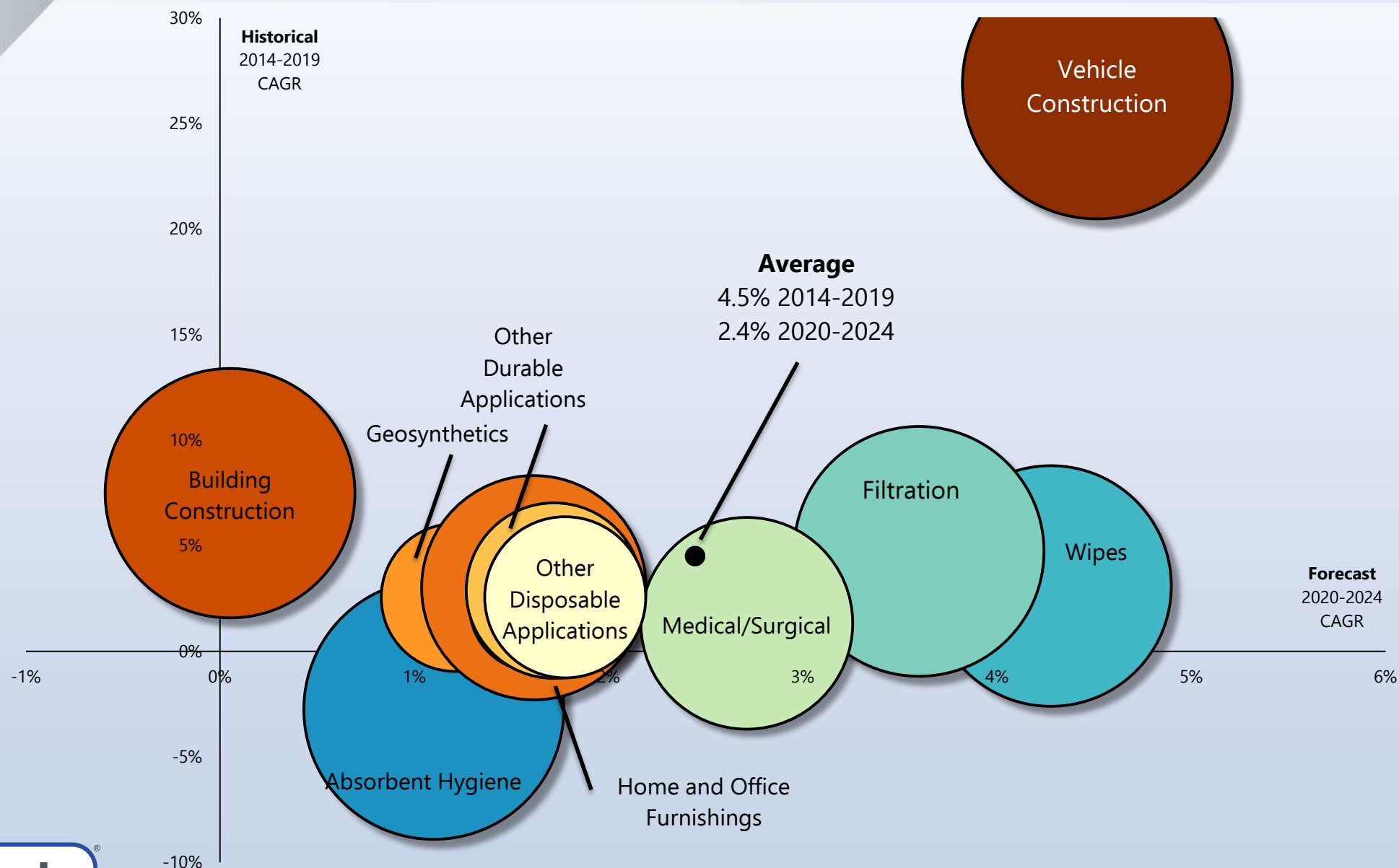
Slowing Growth in North America

Demand in Tonnes, Historical & Forecast AAGR, 2019



Considerable Range of Growth Rates

North America Historical & Forecast CAGR in Tonnes of Demand by End-Use, 2019



Closing

Strong Growth Industry, Although Slower

- Incredible Dynamic and Diverse
 - Economic Trends Driving Growth
 - Demographic Trends Driving Growth
 - Megatrends Driving Growth
- Engineered Material Solutions Always Needed
 - Innovation Driving Growth
 - Technology Driving Growth
- Significant Amount of Resin-Based Capacity Starting
- Rationalization of Assets

Thank You

Questions

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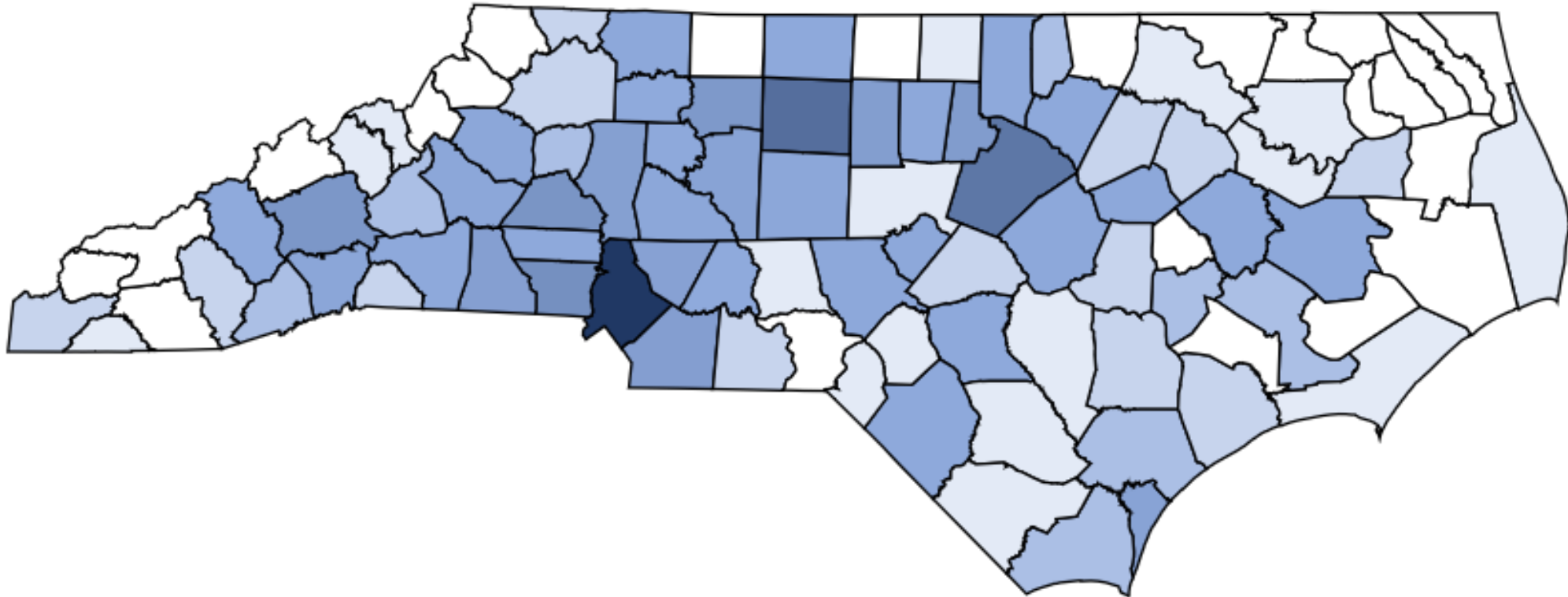


**Association of the
Nonwoven Fabrics Industry**
ADVANCING ENGINEERED MATERIAL SOLUTIONS

North Carolina: The #1 State for Nonwovens



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ADVANCING ENGINEERED MATERIAL SOLUTIONS



Overall

- 991 NC Organizations in NW in 1,039 locations
- 60,500 Employees
- \$2.2 Billion in Payroll

Nonwovens in North Carolina

- 750,000 tonnes of production in 2021
- 15% of North American Production
- 41 Nonwoven Companies with 142 Nonwoven Lines
- Main End-Uses
 - Home & Office Furnishings (i.e., Floor Coverings, Bedding, Furniture)
 - Automotive Components
 - Absorbent Hygiene and Wipes
 - Filtration Media

Why is North Carolina so Attractive for Nonwovens Investments?

- Solid Infrastructure:
 - Low cost, readily available power
 - Well-maintained road & rail systems
- Educated, diligent workers
 - Manufacturing oriented: furniture / textiles
- Welcoming Business Climate
 - Taxes
 - Quality of Life
 - Higher Education focus

Why is North Carolina so Attractive for Nonwovens Investments?

- Education Infrastructure: Textiles/Paper/Materials
- Nonwovens Institute in College of Textiles at NC State Univ.
- INDA headquarters and home to many members
- Active & Interested Economic Development Assistance

Latest Developments in Nonwovens

- Sustainability-Driven Innovation
 - Responsible Inputs: Plant-Based vs. Petroleum-Based
 - Responsible End-of-Life: Recycled content/Recyclable or “quickly” biodegradable in any environment
- Increased Interest in IAQ
- Lightweighting/less material
- Increased transparency on what's in/what's not

Summary

- Nonwovens is a Healthy, Growing Industry making products that improve lives
- Nonwovens are versatile; adapt to ever-changing needs
- North Carolina is a great state for nonwovens!

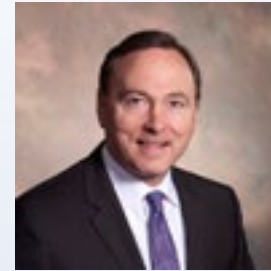
Meet the INDA Team



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Dave Rousse

President Emeritus

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Brad Kalil

**Director of Market
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Insights**

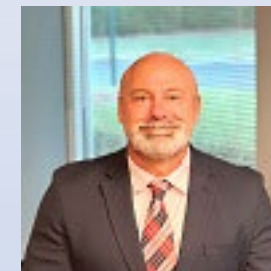
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Thank You