



2024

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Carolina
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THANK YOU TO OUR PARTNERS!



SOUTH DEPT. OF
COMMERCE
CAROLINA
LAUNCH TO LEGACY

SUSTAIN SC
commerce + conservation



2024 Recycling Day at the Statehouse

3:00-5:00 pm – Presentations

- Mary McClellan, Executive Director, Carolina Recycling Association
- Anna DeLage, Director, Recycling Market Development, SC Dept of Commerce
- Ed Marr, Horry County Solid Waste Authority & RMDAC Member
- Rob Smith, Principle Lobbyist, Moore & Van Allen
- Kevin Kassekert, COO, Redwood Materials
- Matt Venuto, Industrial Recycling Manager, CRC Metal Recycling; President, SCRA
- Cynthia Davis, Ph.D., Senior VP, Sustain SC
- Joey Von Nessen, Ph.D., Research Economist, Darla Moore School of Business USC
- (Invited) Senator Wes Climer, Senate Agriculture and Natural Resources
- South Carolina Lieutenant Governor Pamela Evette

5:00-7:00 pm – Reception & Networking with Legislators

2024 Recycling Day at the Statehouse

Introductions

Tell us your name and where you are from!

Notes:

*Attendee List will be distributed after the event with all attendees and the Members of the Statehouse.

**Presentations will be shared with all attendees as well



2024 Recycling Day at the Statehouse

Welcome Anna DeLage, Director, Recycling Market Development,
SC Dept of Commerce

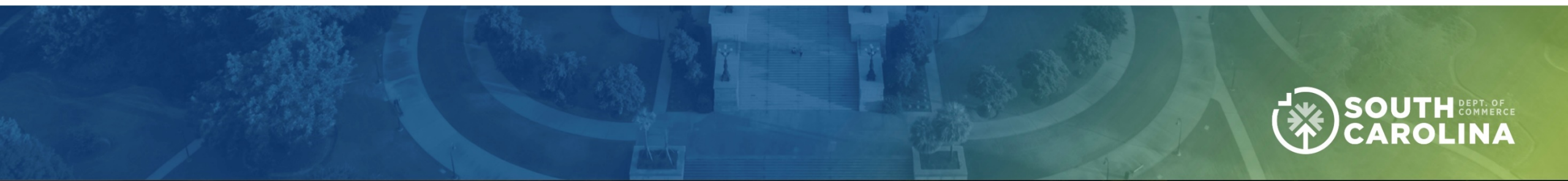




SC DEPARTMENT OF COMMERCE RECYCLING MARKET UPDATE



SOUTH DEPT. OF
COMMERCE
CAROLINA
LAUNCH TO LEGACY





RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL

R M D A

C



Chair
Wes Westbrooks
BMW
State Representative



Vice Chair
Tina Green
Mumford Industries
Recycling Industry



Norman Chandler
Republic Services
Solid Waste Industry



Ed Marr
Horry County Solid
Waste Authority
County Government



Kevin Richardson
City of Rock Hill
Municipalities



Angel Lara
Mid-Carolina Steel
Scrap Metal Industry



Brad Dutton
Dutton Polymer Group
Plastics Industry



Carol James-Gilchrist
Sonoco Recycling
Paper Industry



Jean Cecil Frick
NP Strategy
General Public



Chris Fisher
Fisher
Recycling
Glass Industry



Dr. Andrew Spicer
Ph.D.
Darla Moore School
of Business
Higher Education



Chad Prescott
Mid-Carolina Steel
Aluminum Industry



Jay Spears
Continental Tire
Tire Industry



Adam Padgett
Green Energy Biofuel
Petroleum Industry



Glenn Odom
Emeritus Member
Wellman Plastics
Recycling Industry



2023 RECYCLING INDUSTRY SNAPSHOT



\$13.6B
Annual Industry
Economic Impact
(2022 Economic Impact Study)

\$1.75B
Capital Investment

2,178
New Jobs

10
Companies

5 YEAR CAPITAL INVESTMENT


2019-2023



\$6.6B
Capital Investment

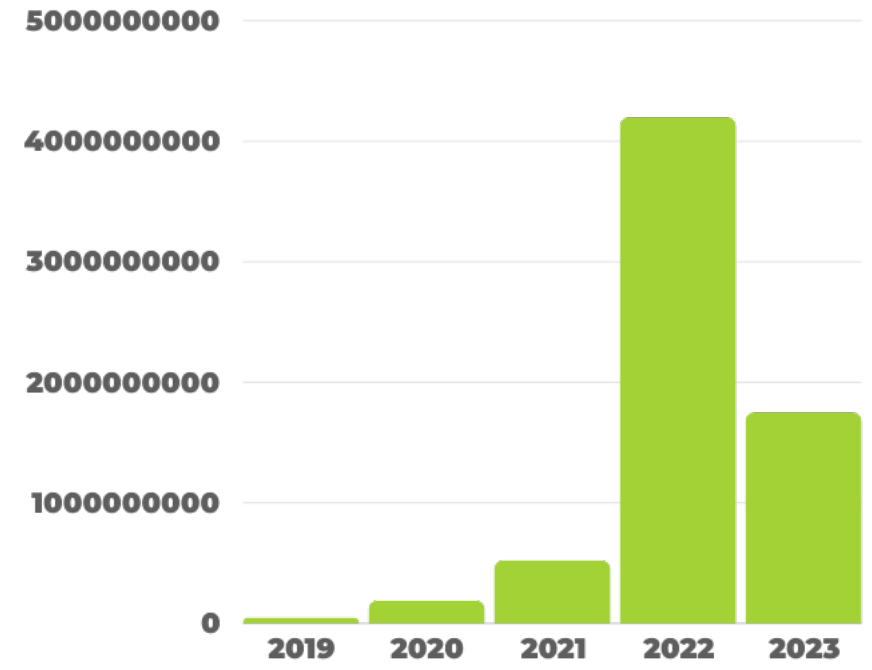


5,008
New Jobs



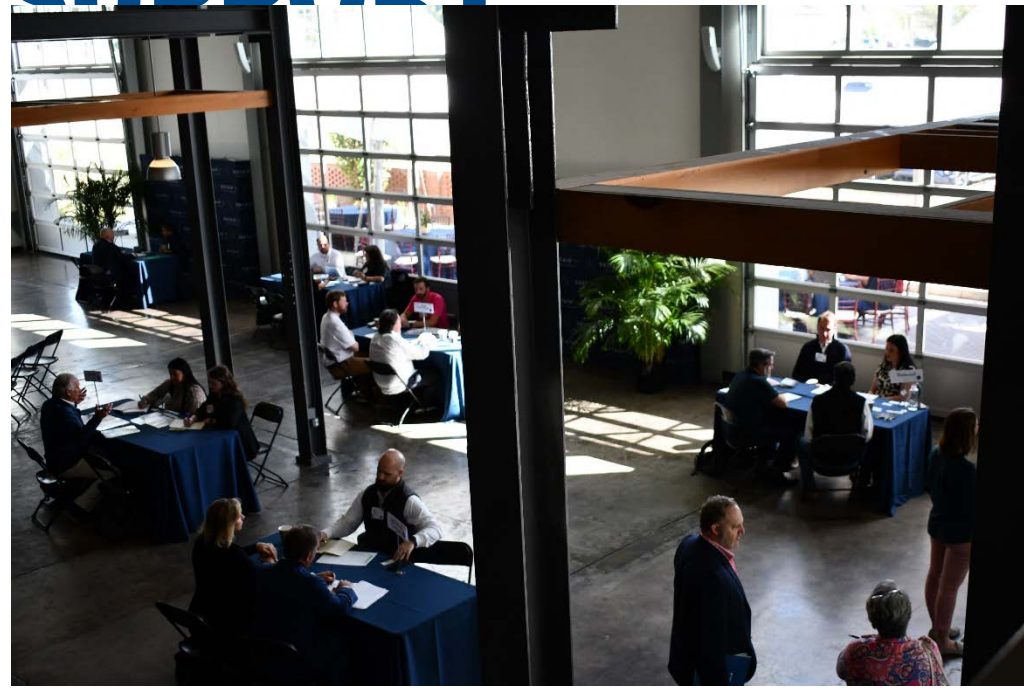
38
Companies

YEAR	CAPITAL INVESTMENT
2019	\$50 Million
2020	\$119 Million
2021	\$523 Million
2022	\$4.2 Billion
2023	\$1.75 Billion





TOOLS: RECYCLING BUSINESS SUPPORT



- Recycling Consultation
- Stakeholder Engagement
- B2B Matchmaking
- Recycling Market Development Advisory Council

CAROLINAS PLASTICS RECYCLING COUNCIL

2024 Road Show

Session 1: Collaboration Across the Plastic Recycling Value Chain

March 6 Atlantic Packaging | Charlotte, NC

Session 2: Understanding Evolving Plastic Markets

May 29 Milliken | Spartanburg, SC

Session 3: Innovative Trends & Technologies

Session 4: Policy Goals for Sustainable Plastics Recycling Markets



CIRCULARITY IN EV BATTERIES



- ISRI hosts Circularity & Electrification Action Summit in 2023 Greenville, SC
- DHEC Launches Be Battery Smart Campaign
- SC Commerce team brings EV stakeholders together

SC SCRAP TIRE SUSTAINABILITY COALITION



- Evaluate South Carolina's Tire Recycling Fee
- Market Development
- Tire Illegal Dumping Education



RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL

RECYCLING EDUCATION SERIES



CMC Steel
January 2023

**York County
Material Recovery Facility**
July 2023





RECYCLING MARKET DEVELOPMENT ADVISORY COUNCIL

RECYCLING EDUCATION SERIES



Continental Tire

September 2023

An aerial photograph of a city, likely Asheville, North Carolina, featuring a prominent waterfall and a suspension bridge. The image is overlaid with a blue-to-green gradient. The text "ANY QUESTIONS?" and "THANKS FOR LISTENING" is centered in white, bold, sans-serif font.

ANY QUESTIONS?
THANKS FOR LISTENING

2024 Recycling Day at the Statehouse

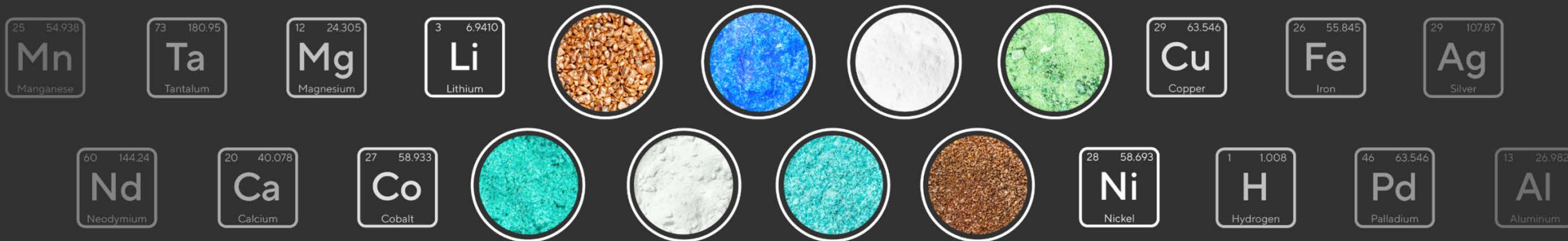
Welcome Ed Marr, Horry County Solid Waste Authority & RMDAC Member



2024 Recycling Day at the Statehouse

Welcome Kevin Kassekert, COO, Redwood Materials



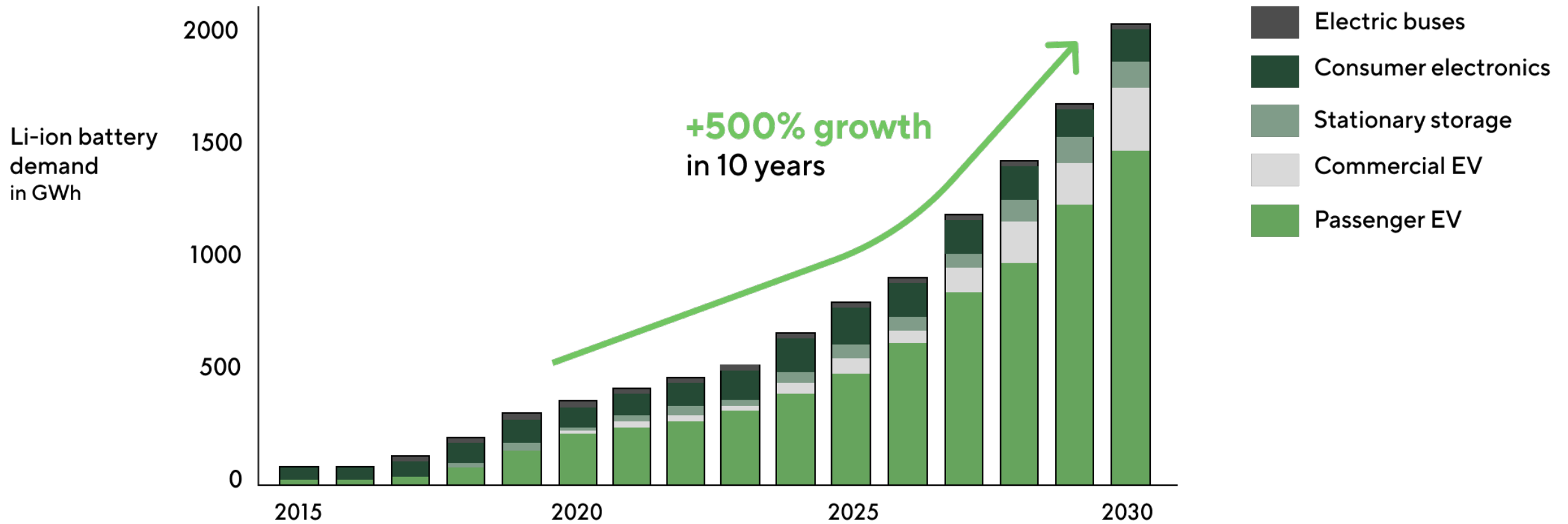


REDWOOD MATERIALS

Building a circular supply chain to
power a sustainable world

MASS ELECTRIFICATION DEMANDS MORE BATTERIES

Lithium-ion battery demand growth by transit type in the US from 2015 to 2030, estimate in gigawatt hours



Source: Bloomberg New Energy Finance





REDWOOD'S MISSION

Build a circular supply chain to power a sustainable world;
accelerate the reduction of fossil fuels

Redwood focus:

- Increase supply of battery materials
- Reduce cost of batteries
- Reduce environmental impact of batteries



Redwood's focus is critical to the
future of transportation and the
electric grid

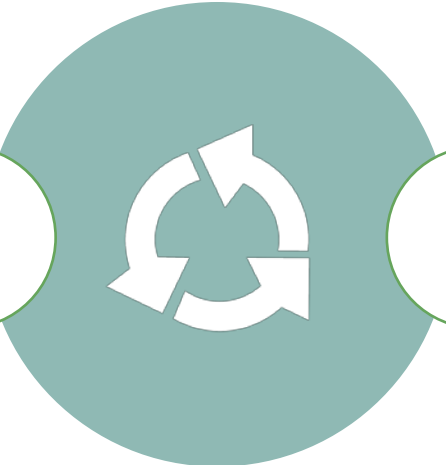




INCREASING BATTERY MATERIALS SUPPLY THROUGH CLOSED LOOP PROCESS



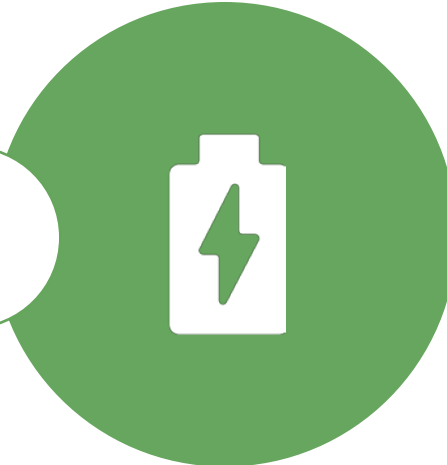
**COLLECTION
& SORTING**



RECYCLING



REFINING



**BATTERY
MATERIALS**



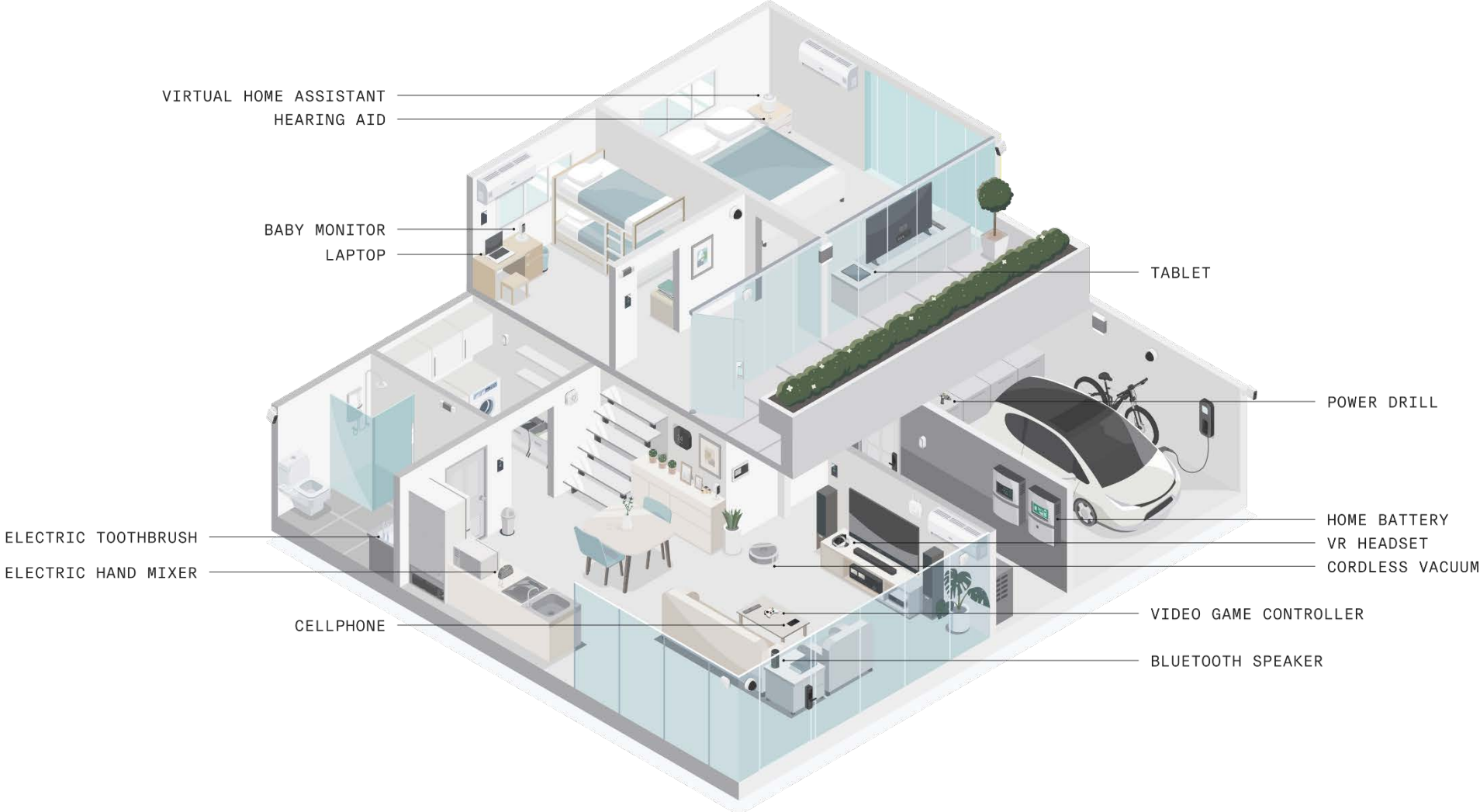
BATTERY MATERIALS CAMPUS 2

Ridgeville, South Carolina

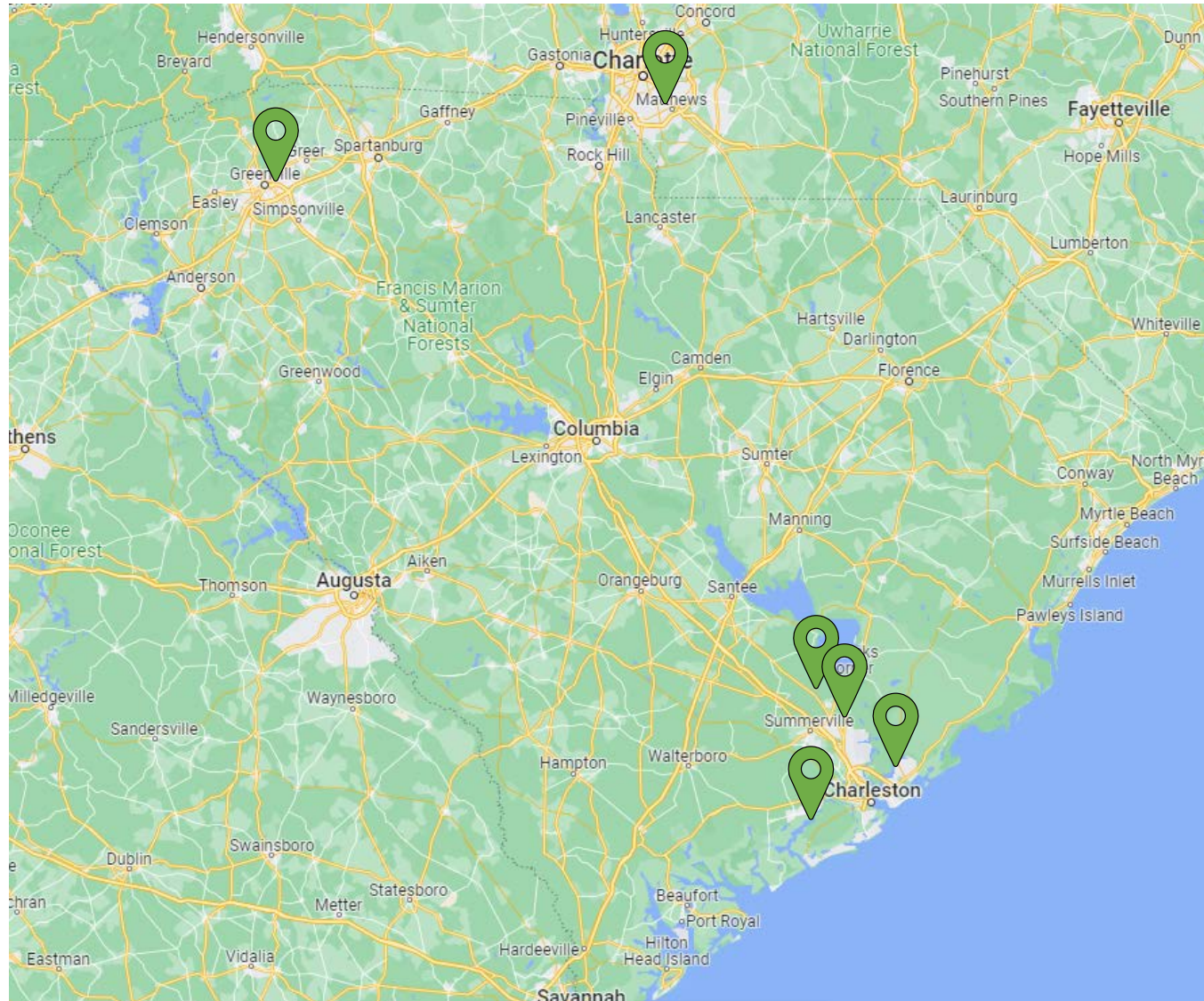
\$3.5B
1,500 JOBS
600+ ACRES
100 GWh/YEAR (1M EV EQUIVALENT)



THE LARGEST LITHIUM & COBALT MINES CAN BE FOUND IN JUNK DRAWERS



REDWOOD MATERIALS RECYCLING LOCATIONS IN SOUTH CAROLINA



Audi Charlotte
9300 E Independence Blvd.
Charlotte, NC

Audi Greenville
200 Duvall Dr.
Greenville, SC

Berkeley Electric Cooperative
1732 US Hwy 52
Moncks Corner, SC

Berkeley Electric Cooperative
2 Springhall Drive
Goose Creek, SC

Berkeley Electric Cooperative
North 7200 Hwy 17
Awendaw, SC

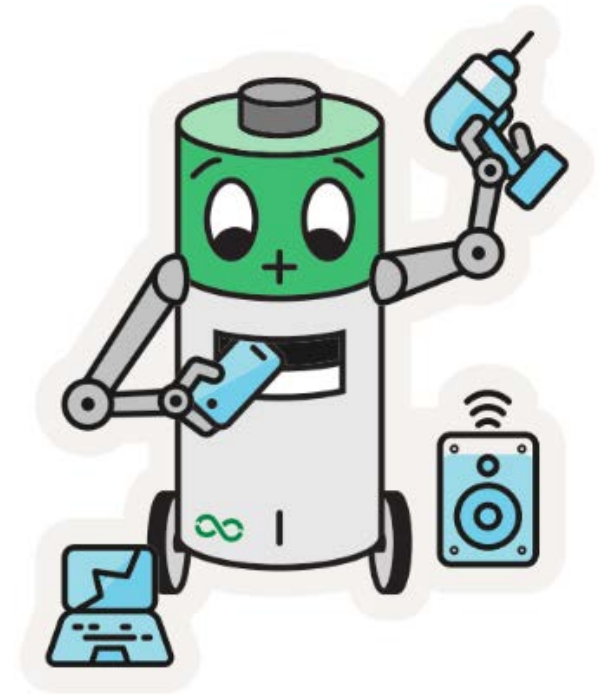
Berkeley Electric Cooperative
1135 Main Road
Johns Island, SC



K-12 ENGAGEMENT IN SOUTH CAROLINA



- Offering free battery recycling programs for K-12 schools
- Working in collaboration with SC DHEC to get the word out about the program
- **Incentives for students and teachers to participate!**
 - Drawings for participating teachers or schools to win money for supplies
 - All students participating get a sticker, pen or pencil
 - If students collect 1 lb. Of batteries per student/average, classes can win a pizza party, ice cream party or t-shirt.
 - Scholarships available for students that go above and beyond.



Interested schools or teachers can email education@redwoodmaterials.com to get started!

Let's close the loop together.

Thank you!



2024 Recycling Day at the Statehouse

Welcome Matt Venuto, Industrial Recycling Manager, CRC Metal Recycling; Vice President, SCRA



2024 Recycling Day at the Statehouse

Welcome Cynthia Davis, Ph.D., Senior VP, Sustain SC





SUSTAIN  SC

commerce + conservation



OUR MISSION

Connect the sustainability goals of business in South Carolina with local solutions for the benefit of our economy, environment, and people.



Our Team



Leslie Skardon,
CEO



SVP

Dr. Cynthia Davis, Ethel Bunch,
Founder





The Roadmap to Sustain SC

-  **Partnerships for Economic Prosperity and Quality of Life**
-  **A Resilient State: Sustain SC Land and Water Action Fund**
-  **The New STEM: Future Skills Workforce Accelerator**
-  **Capitalizing on the Sustainable Revolution**
-  **The Circular Economy: South Carolina's New Economic Opportunity**
-  **The Three-Legged Stool: Affordable, Reliable & Sustainable Energy**
-  **Global to Local: Meeting Goals at the Local Level**



Global companies like Coca-Cola Consolidated are harnessing the economic opportunity in South Carolina and helping build the circular economy by capturing plastic waste

commerce + conservation

together.

SUSTAIN  SC



2024 Recycling Day at the Statehouse

Welcome Joey Von Nessen, Ph.D., Research Economist,
Darla Moore School of Business USC



Unlocking Demand for the Circular Economy in S.C.



*Joseph Von Nessen, Ph.D.
Research Economist
March 19, 2024*

Defining Sustainability

Defining Sustainability



CARBON NEUTRALITY



SUSTAINABILITY FOR ALL



WATER QUALITY + QUANTITY



CIRCULAR ECONOMY

Source: Sustain SC

A Growing Market Demand

73%

Of global consumers report being willing to change consumption habits to lessen their impact on the environment

+20%

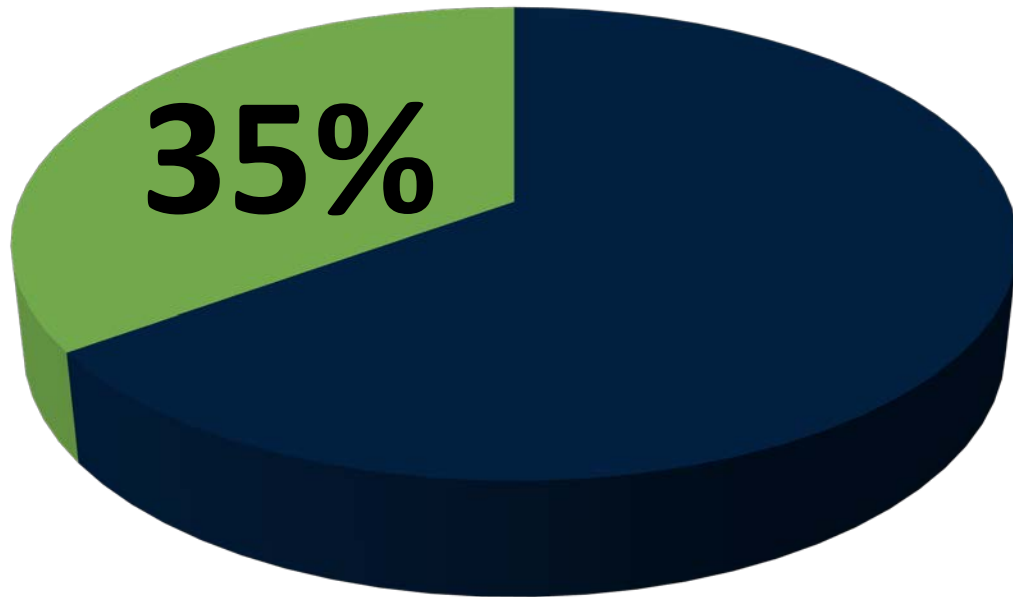
Growth in sustainable product sales since 2020



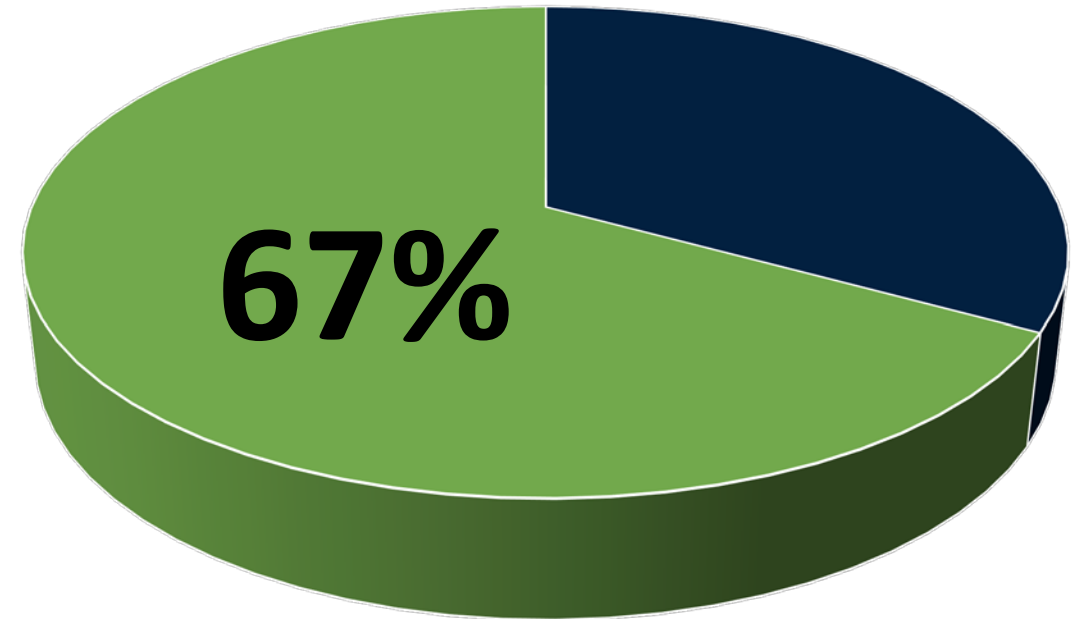
Source: Nielsen Media Research; 2023

Public Commitments

Pct. of Top 2,000 Publicly Traded Companies with Net Zero Commitments



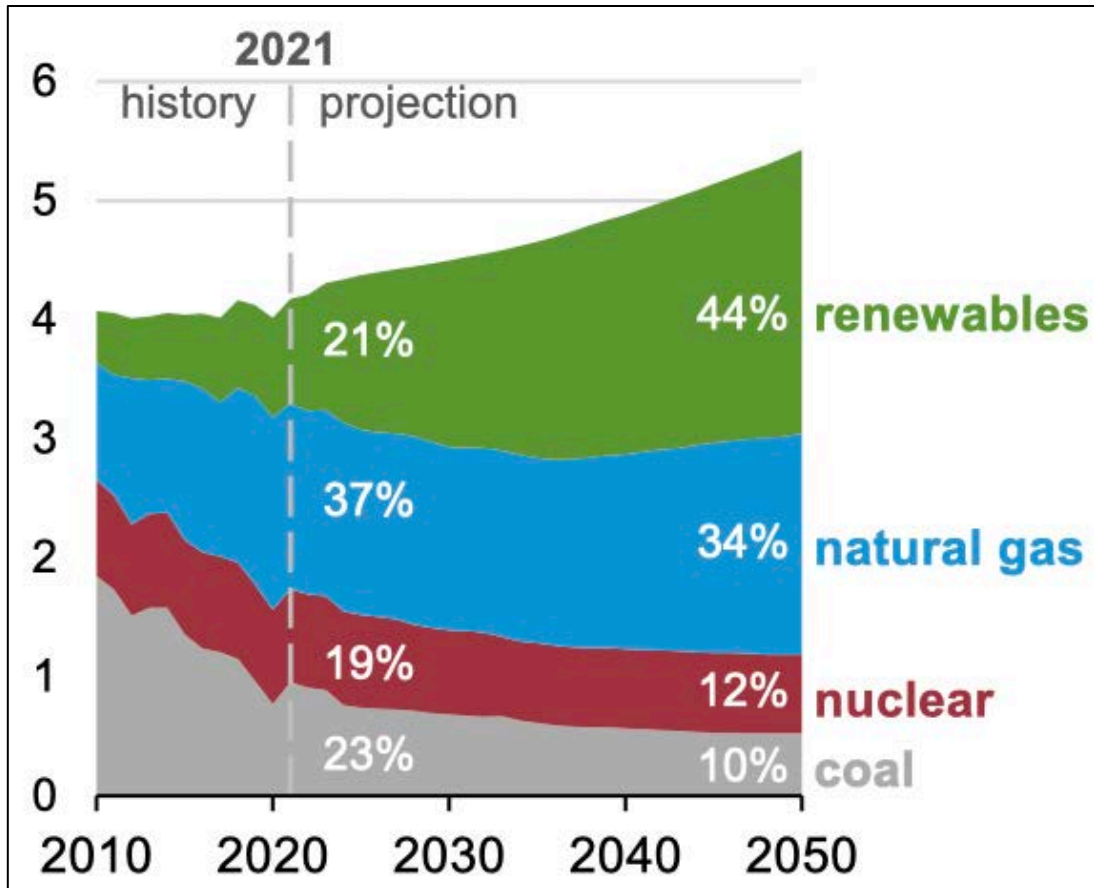
Pct. of S&P 500 Companies with Carbon-Emission Reduction Targets



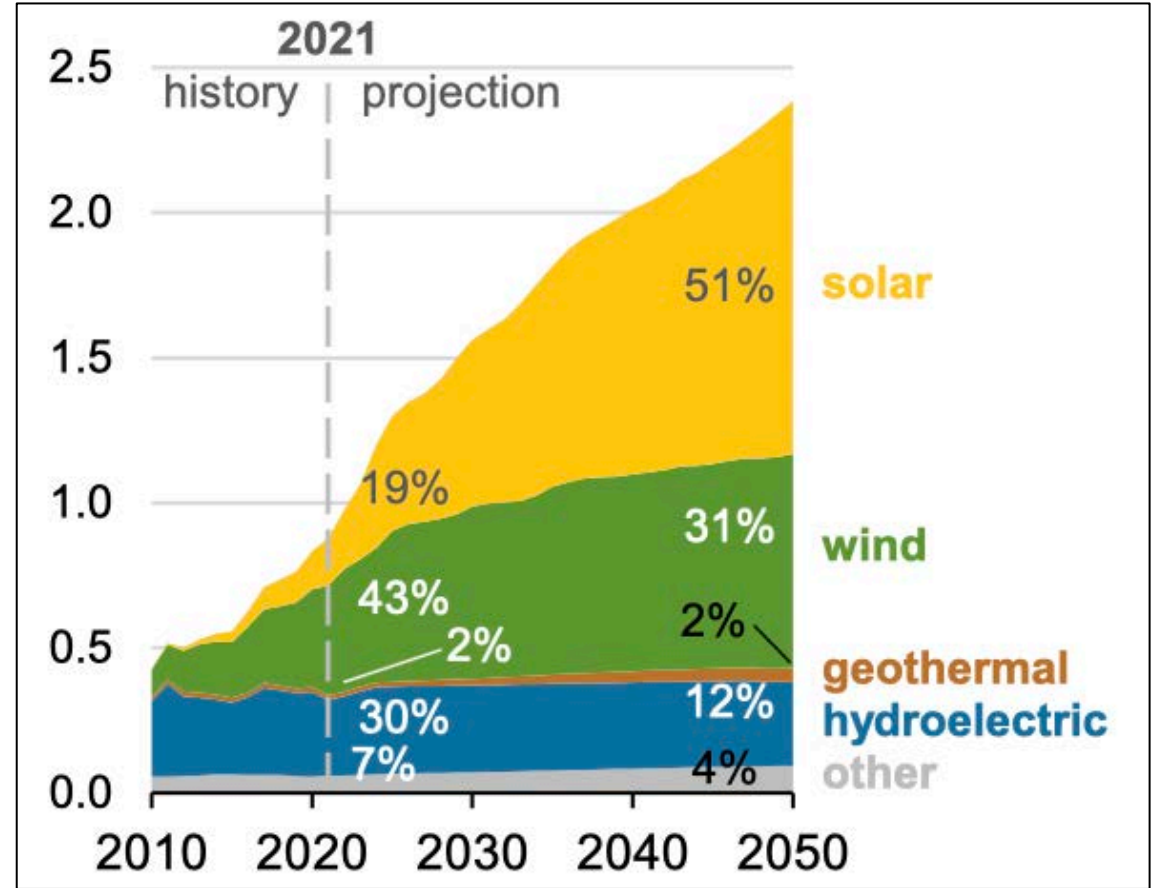
Source: Harvard Business Review; August 2022

U.S. Electricity Generation

Total Electricity Generation

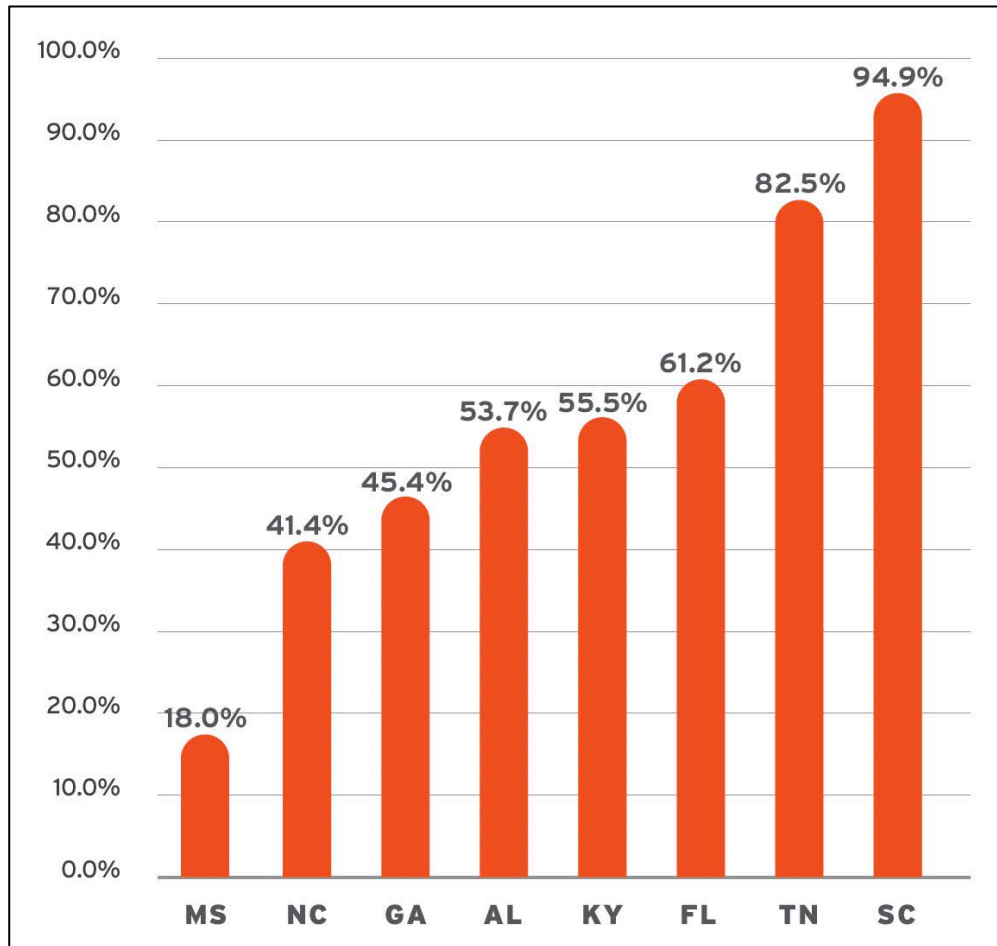


Renewable Electricity Generation



Source: U.S. Energy Information Administration, Annual Energy Outlook (2022)

Total Advanced Manuf. Growth by State: 2010-2022



Total Employment Growth

S.C. Adv. Manuf.: +94.9%

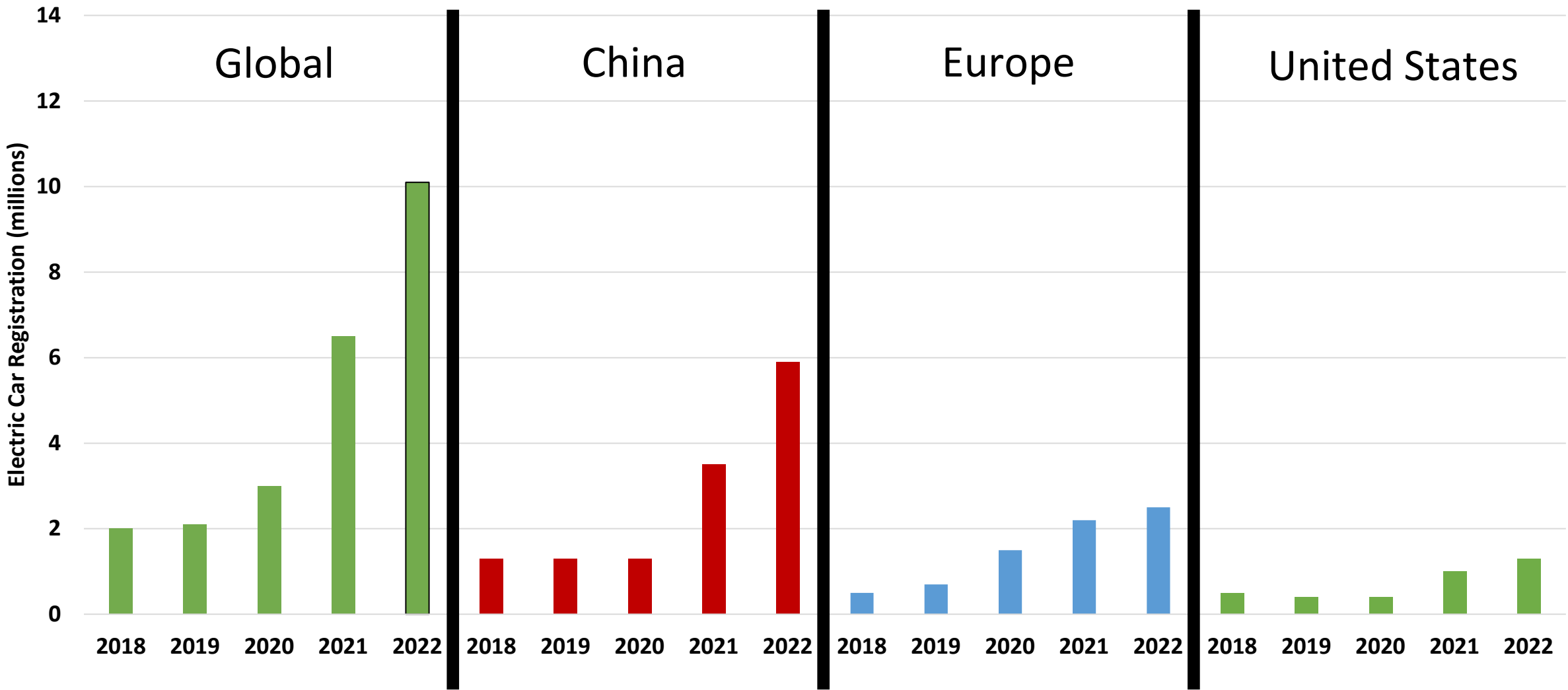
South Carolina: +27.4%

South Carolina is the leader among all states in exports of:

- Completed passenger vehicles (9th consecutive year)
- Tires (7th consecutive year)

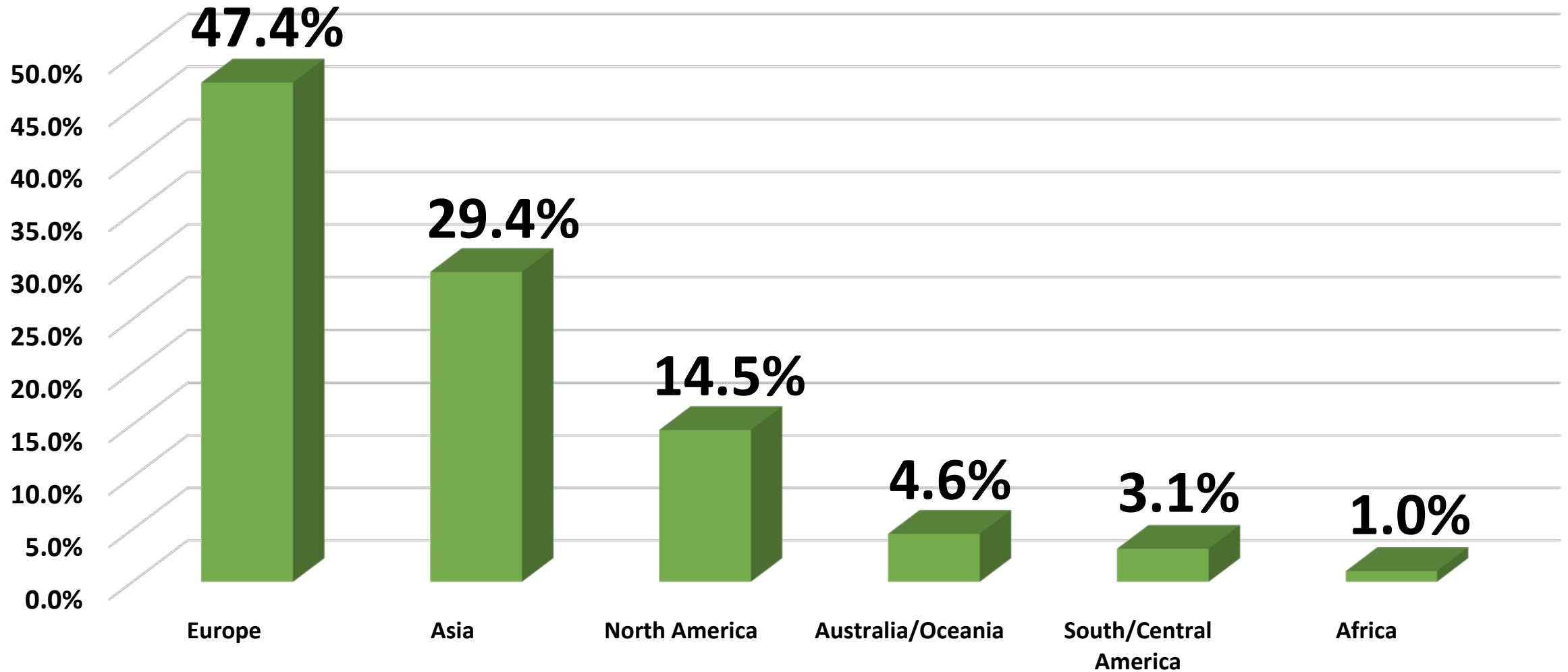
Source: U.S. Bureau of Labor Statistics

Electric Vehicle Registrations, by World Region



Source: International Energy Agency; 2023

Pct. of S.C. Motor Vehicle Exports by Destination



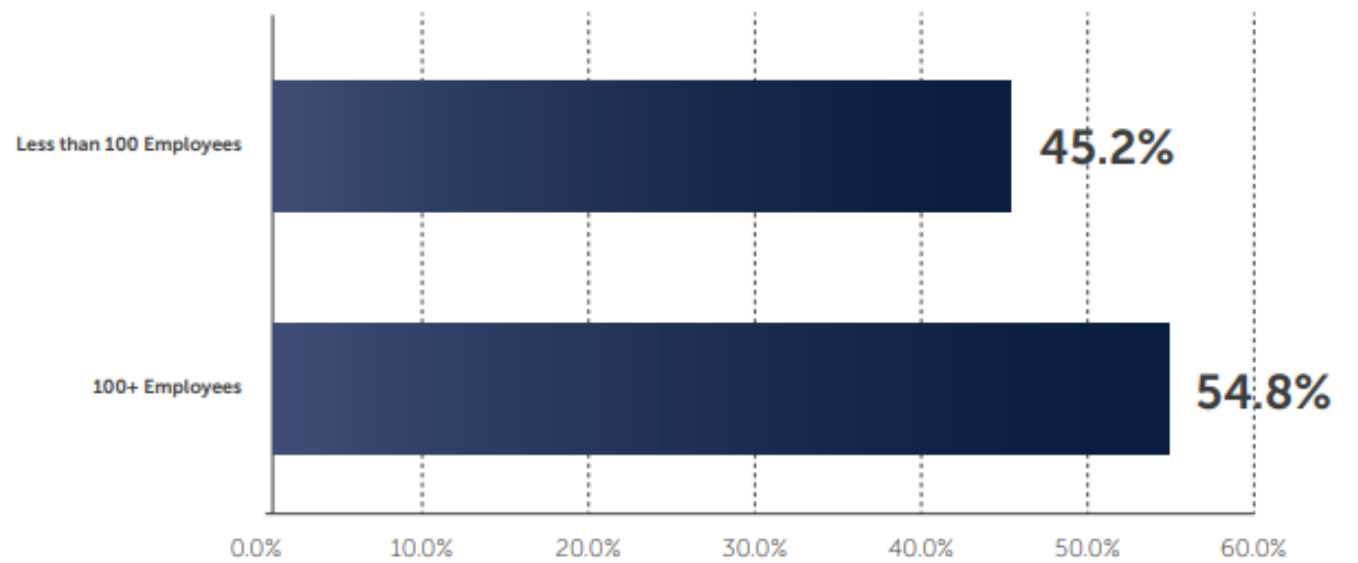
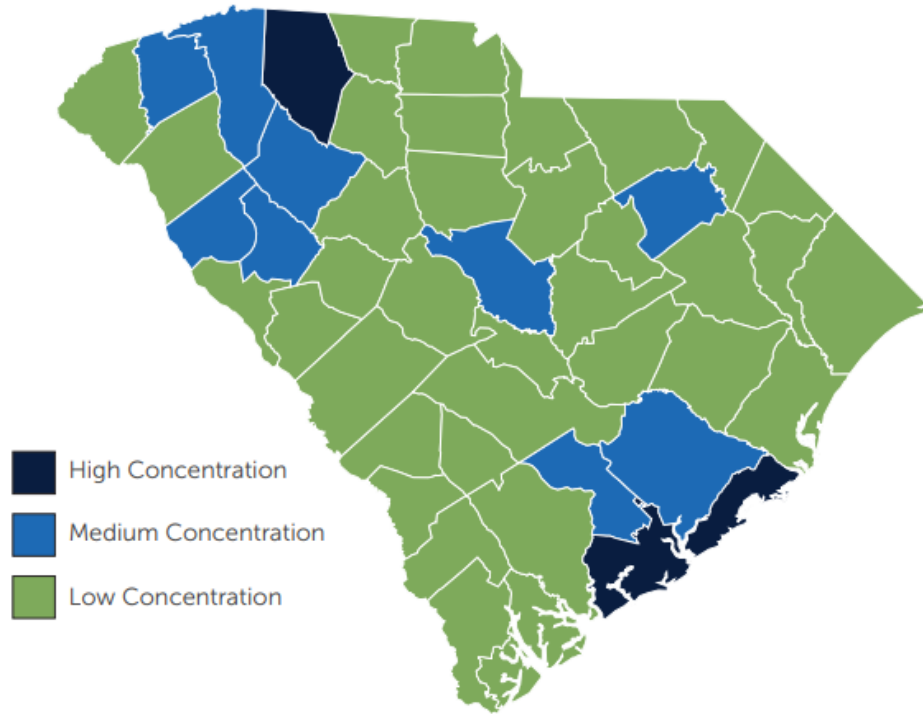
Source: U.S. Census Bureau, April 2022

Primary Objective

Determine the extent to which access to various sustainable energies, innovations, and technologies could impact the long-run growth of businesses in South Carolina




Location and Size of Survey Respondents




*Approximately **46 percent** of survey respondents indicate that their revenue projections over the next decade would be negatively impacted without sufficient access to sustainable technologies*

1

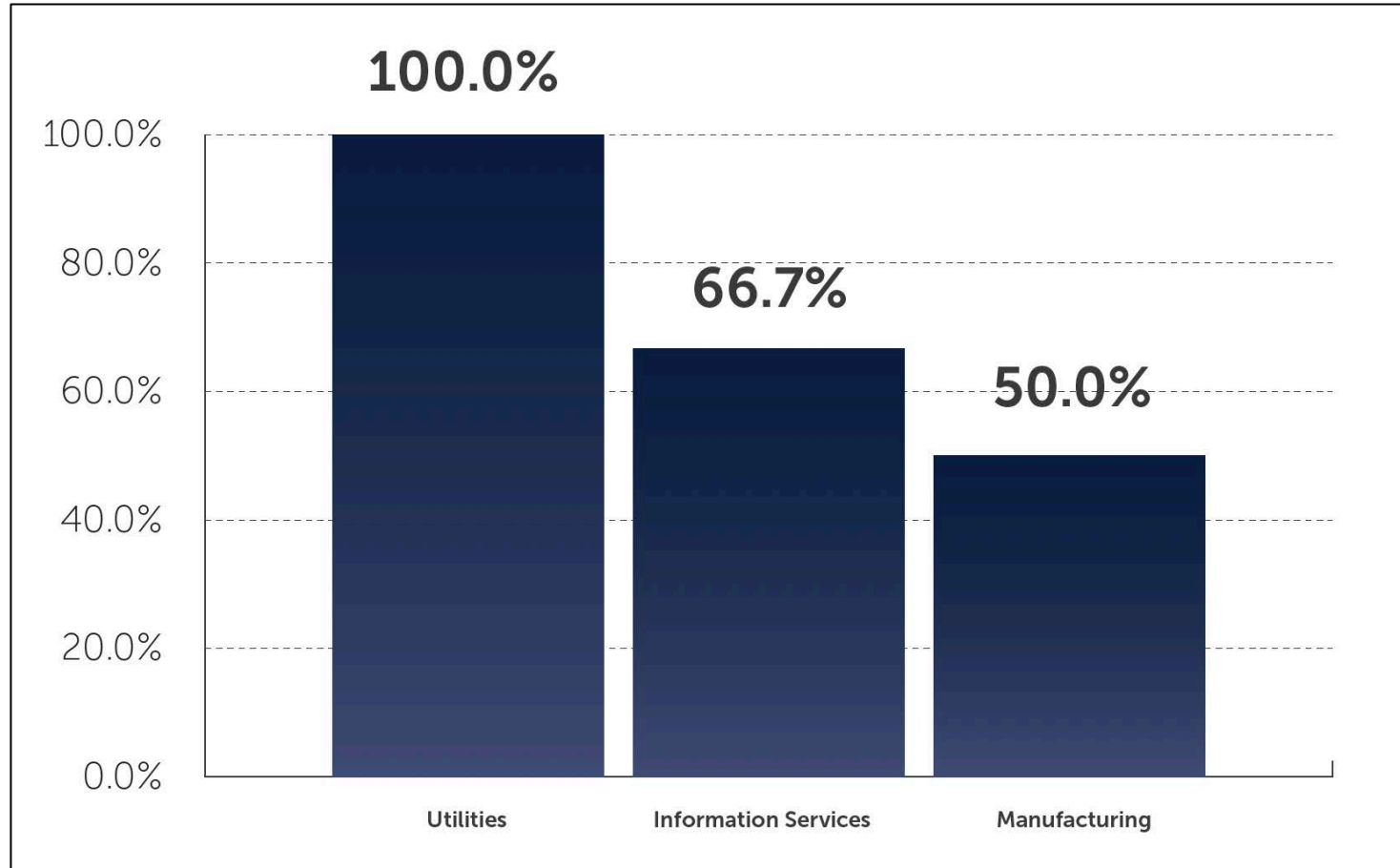
Which Technologies?

TECHNOLOGY/INNOVATION CATEGORY	PCT.
 Landfill and/or Organic Waste Innovations	51.7%
Electric Vehicle Infrastructure	44.8%
Battery Storage Innovations	39.7%
Water Use Reduction Innovations	39.7%
Technological Innovations in Transport	34.5%
Technological Innovations in Materials Used in Production	31.0%
Digital Infrastructure for Sustainability and Use of Artificial Intelligence	31.0%
Sustainable Development in Goals Reporting	27.6%
Sustainable Chemical Innovations	20.7%
Green Steel/Aluminum	20.7%
Sustainable Agricultural Practices and Technology	12.1%
Green Cement	3.4%

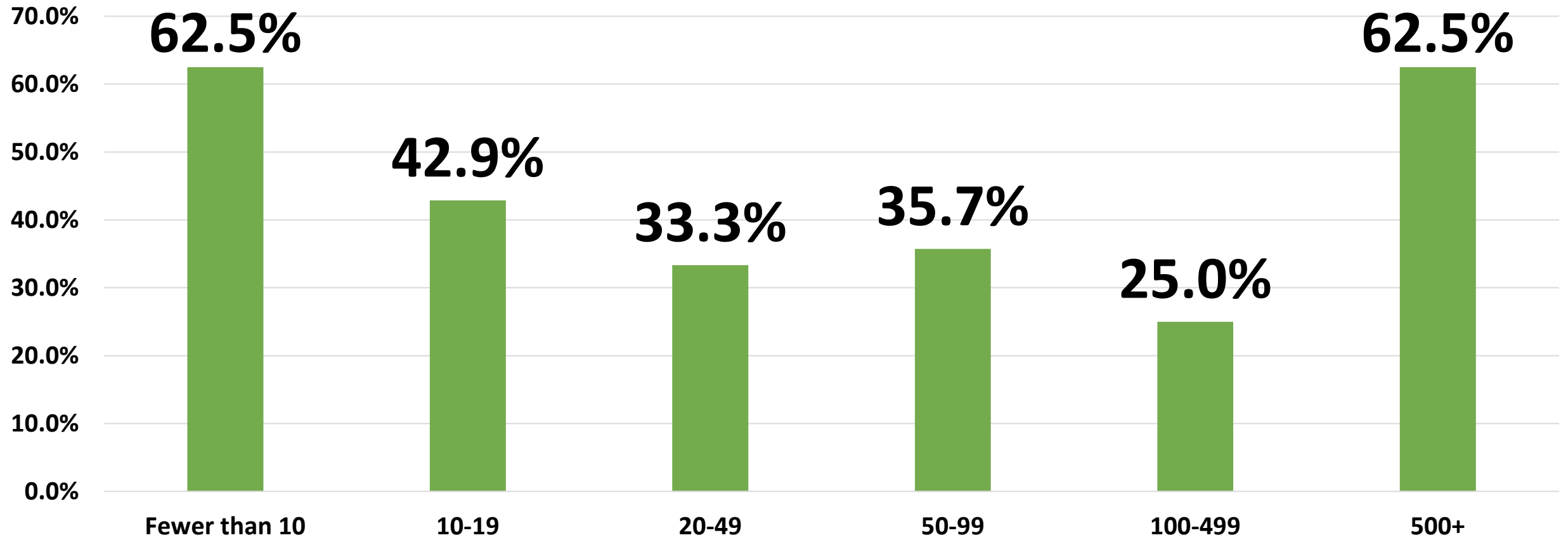
Which Energy Sources?

CLEAN ENERGY CATEGORY	PCT.
 Solar	83.9%
Renewable Natural Gas	48.4%
Wind	41.9%
Hydrogen	38.7%
Nuclear	32.3%
Geothermal	19.4%

Pct. of Survey Respondents Reporting Access to Sustainable Technologies as Major Contributing Factor to Revenue Growth Forecasts, by Industry



Pct. of Survey Respondents Reporting Access to Sustainable Technologies as Major Contributing Factor to Revenue Growth Forecasts, by Employment Size

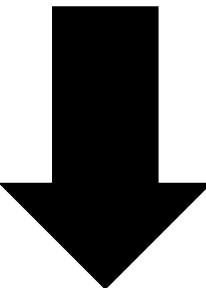


How Would Firm Revenue Projections be Affected?

Annual Revenue Projections Among Firms Requiring Sustainable Technologies



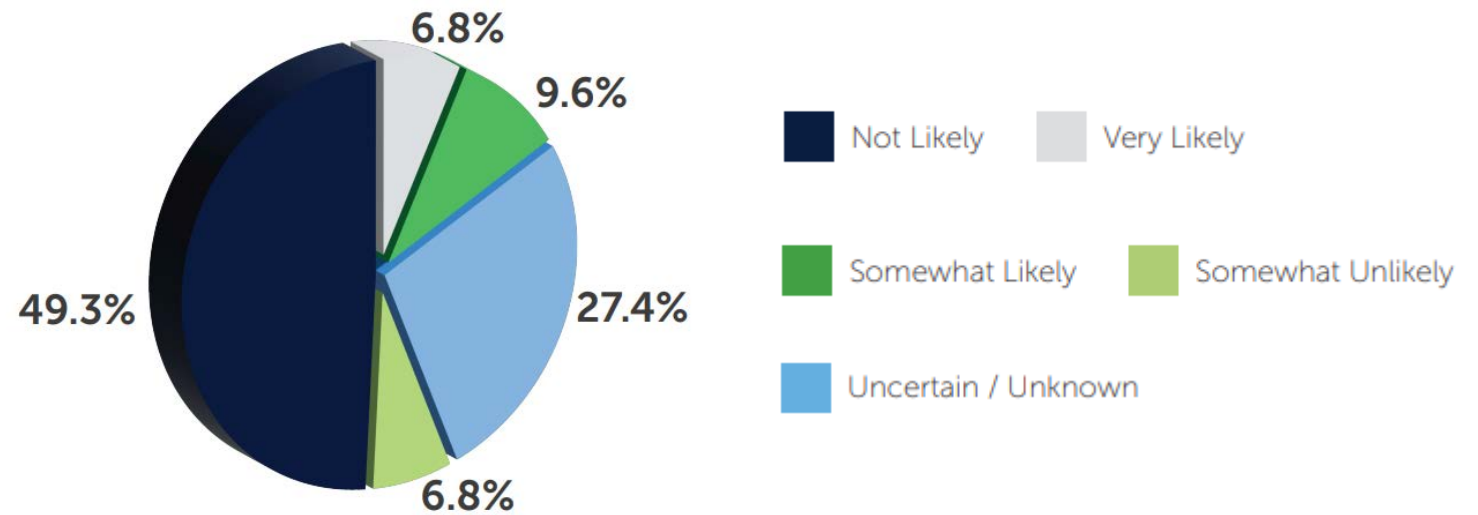
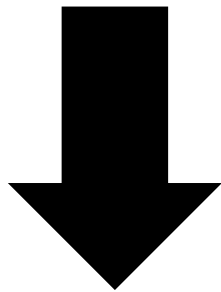
With Access to Sustainable Technologies **+4.6%**



Without Access to Sustainable Technologies **+3.1%**

Firms Relocating Outside S.C.

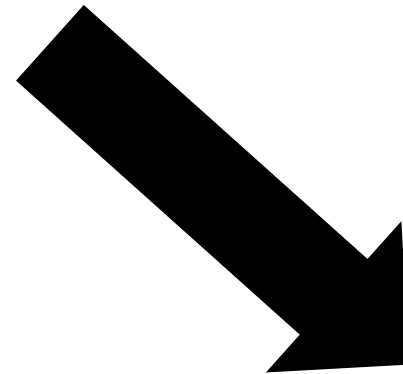
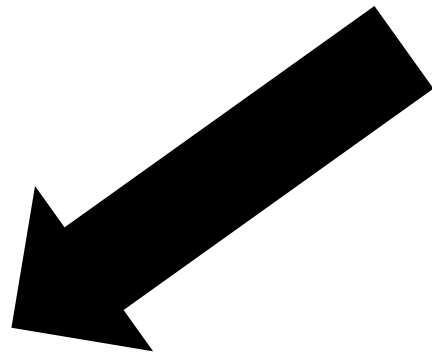
6.8%



Percentage of surveyed firms that report that they **would be “very likely” to relocate their existing South Carolina facilities elsewhere** if they are unable to meet their sustainable technology requirements

Economic Impact Analysis

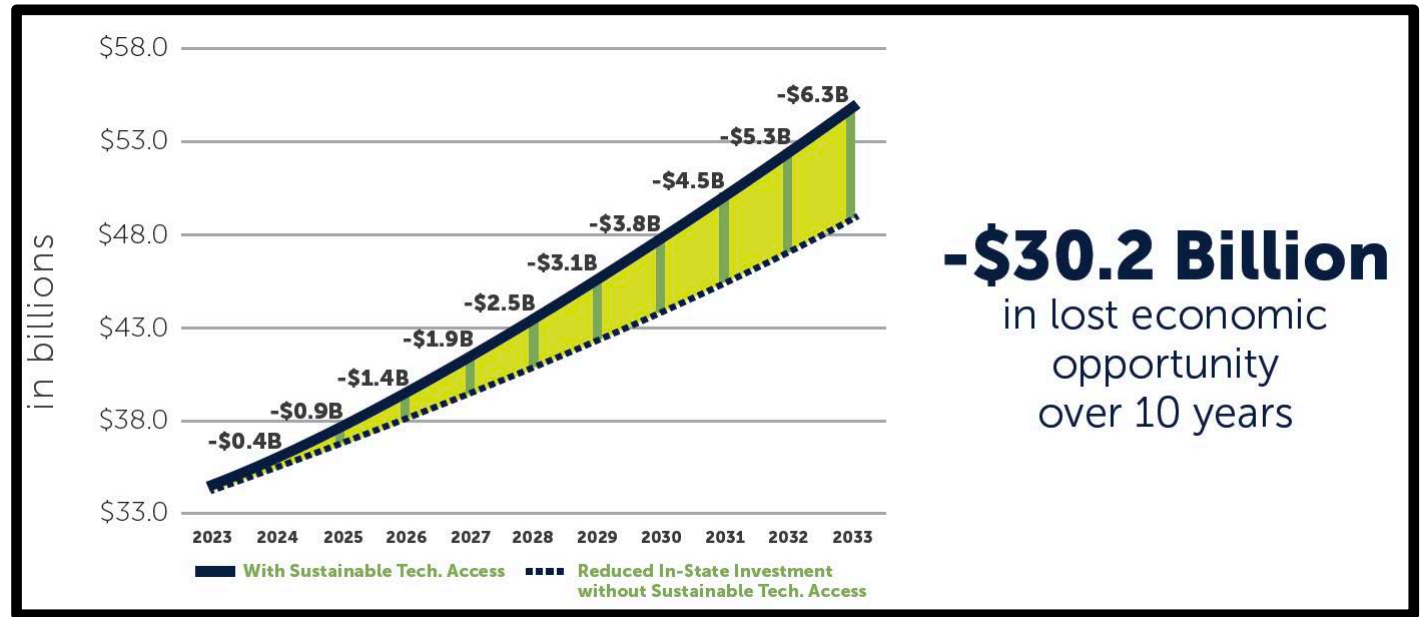
Direct Effects



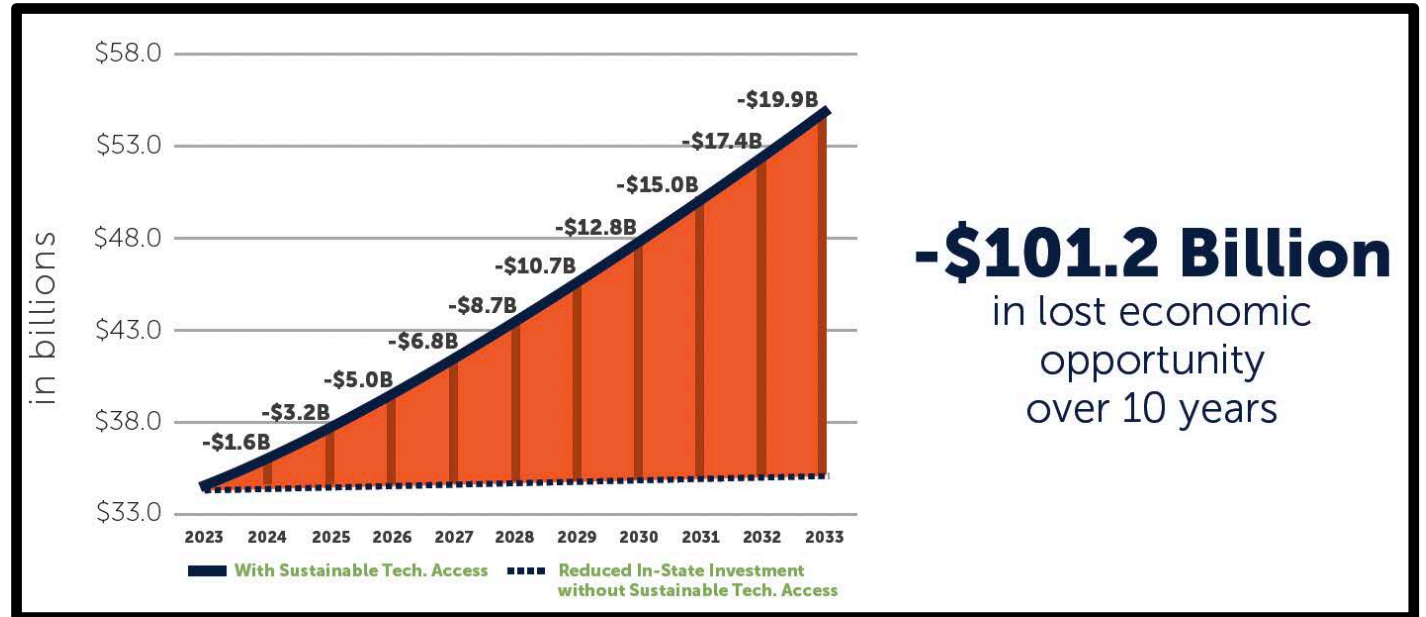
Indirect Effects
(Supply Chain Multiplier)

Induced Effects
(Household Spending Multiplier)

Potential Reductions in Firm Revenue Growth



Potential Reductions in Future In-State Investment





Industry Feedback: Manufacturing Sector

“We’ve invested so much in South Carolina that it’s unlikely we would relocate elsewhere. However, without having access to renewables that would allow us to meet our sustainability goals, our company would probably look outside the state when making future investment decisions.”

Source: Quotation provided anonymously as part of a series of company interviews that accompanied administered surveys

The Bottom Line

- *The demand for sustainable technologies is rising as consumers are increasingly likely to prefer to purchase products and services from businesses that meet specific sustainability goals.*
- **Approximately 46 percent of survey respondents indicate that their revenue projections over the next decade would be negatively impacted without sufficient access to sustainable technologies.**
- **The sustainable technologies in highest demand by survey respondents are those directly related to recycling and waste disposal.**
- *A lack of sufficient access to sustainable technologies could generate losses of between \$30.2 billion and \$101.2 billion in total economic activity for South Carolina over the next decade.*
- *Investments in sustainability will be increasingly important to maximize the economic competitiveness of South Carolina.*

Thank You!

2024 Recycling Day at the Statehouse

Welcome Senator Wes Climer, Senate Agriculture and Natural Resources



2024 Recycling Day at the Statehouse

Welcome South Carolina Lieutenant Governor Pamela Evette



2024 Recycling Day at the Statehouse

Welcome South Carolina Lieutenant Governor Pamela Evette!

- Pamela S. Evette of Travelers Rest was elected as the 93rd Lieutenant Governor of South Carolina on November 6, 2018
- Founded Quality Business Solutions, Inc. (QBS), a payroll, human resources, and benefits services firm headquartered in Travelers Rest
- Awards Include: ATHENA Leadership Award, the Enterprising Woman of the Year Award, and the Women Presidents' Organization 50 Fastest-Growing Women-Owned/Led Companies Award
- Serves on the boards of directors of the St Francis Foundation and the National Association of Professional Employer Organizations (NAPEO)

