

2013 Southern Automotive Conference

Automotive OEMs



Communities



Universities & Colleges



Automotive Suppliers

Center for Automotive Research

Ann Arbor, MI

October 4th, 2013

CAR's Automotive Industry Affiliates



HONDA



NISSAN



TOYOTA



3M



AISIN



AMERICAN AUTOMOTIVE POLICY COUNCIL



APRISO

AUTO ALLIANCE
DRIVING INNOVATION*



BÖLLHOFF
Joining together!

BorgWarner



BOSCH
Invented for life



Continental

CHEP | Automotive and Industrial Solutions

DELPHI DENSO



Automotive Systems



EATON

ERNST & YOUNG
Quality In Everything We Do

EISENMANN EWI

faurecia

Freudenberg-NOK
Sealing Technologies



Johnson Controls

KOSTAL
NORTH AMERICA

MAGNA

THE MAGNI GROUP, INC.

McKinsey & Company

Macomb Community College
Education • Employment • Economic Development



Mitsui USA

MOMENTIVE



ONREL
NATIONAL RENEWABLE ENERGY LABORATORY



PTC



سابك
sabic



SCHULER



Steel Market Development Institute

TATA TECHNOLOGIES

TREXEL INC.



Industry Collaboration & Partnerships

The Center for Automotive Research brings together industry stakeholders for thought leadership and industry education.

CAR collaborative research & working groups...

- Automotive Communities Partnership (ACP)
- Program for Automotive Labor and Education (PALE)
- Connected Vehicle Working Group
- Advanced Automotive IT Solutions Consortia
- Electric Vehicle Working Group
- United Tooling Coalition (UTC)
- Coalition for Automotive Lightweighting Materials (CALM)
- Southern Automotive Research Alliance (SARA)



The New Big-3 *Technology Shock !*



Materials

Potential growth of
100,000 jobs for
mobility technology
by 2025



Powertrain

Connectivity



High-Tech Automotive Systems

Ripple Effects Through the Supply Chain

Materials and Processes

- Next generation high strength steels
- Foamed metals
- Aluminum and magnesium alloys
- Corrosion protection
- Bio-based materials
- Advanced plastics and composites
- Mold in color/Films/Other for plastics
- Alternative automotive trim cover insert and/or bolster fabrics
- Recycled low cost filler materials
- Coating technology
- Non-destructive testing methods
- Robotics simulation software
- Forming high strength steels
- New laser technology for trimming, piercing and cutting
- New joining technologies
- Tool rapid heating and cooling
- Muti-material joining technologies
- Low cost fine blanking alternatives

Source: CAR 2013

Powertrain and Fuels

- Gasoline direct injection
- Turbochargers and superchargers
- Dual-clutch transmissions
- Higher-speed automatic transmissions (8- or 9-speed)
- Continuously variable transmissions
- Vehicle electrification: motor assist, hybrid electric vehicles, plug in hybrid electric vehicles, extended range electric vehicles, or battery electric vehicles
- Alternative fuels: natural gas, biofuels (E85 and B20), and hydrogen

Advanced Driver Assistance

- Radar, light detection and ranging (LiDAR), and cameras
- Forward collision warning systems
- Automatic emergency braking and steering
- Back-up and rear-view assistance systems
- Lane departure and lane-keeping assistance systems
- Adaptive cruise control and adaptive cruise control with lane-keeping
- Blind spot and pedestrian detection systems
- Parking assistance and automated parking systems
- Adaptive headlights and adaptive high beams

Connected Vehicles

- Dedicated Short Range Communications (DSRC); 3G, 4G, LTE Cellular; Wi-Fi; Bluetooth; and Global Positioning System
- Infotainment (e.g. Sync, Uconnect, and Cue)
- Human machine interface
- Collision warning and avoidance
- Lane departure warning
- Blind spot and pedestrian detection
- Road condition and event notification
- Adaptive route guidance with real-time traffic information
- Signal phase and timing
- Tolling and E-payment
- Location-based Services
- Efficiency monitoring and carbon footprint accounting
- Infrastructure investment planning and condition monitoring
- Fleet management
- Prognostics and diagnostics

Automotive Impact – 50 States

(why states want the auto industry in their backyard)

- **8 million private sector jobs**
- **\$500 billion annual compensation**
- **\$70 billion personal tax revenue**

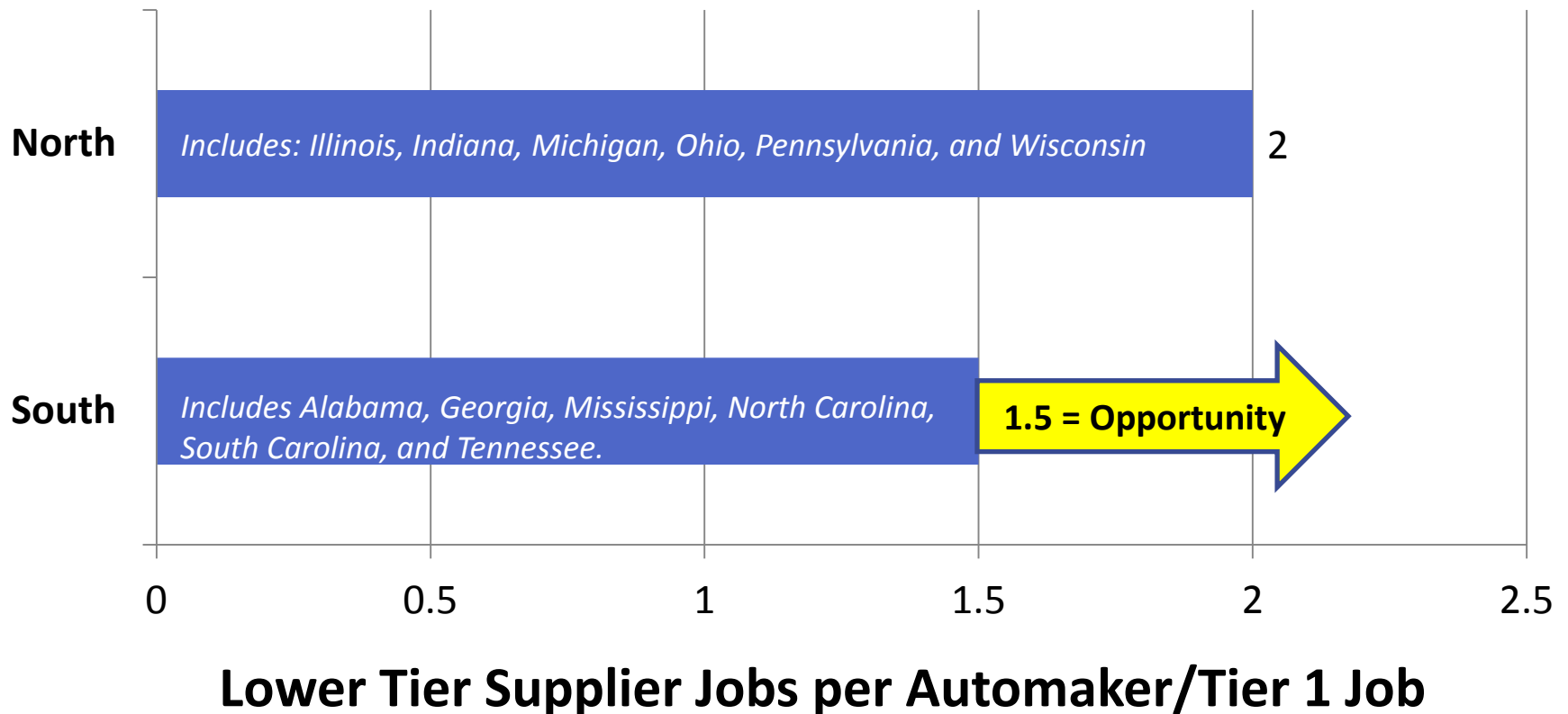
U.S. automotive industry's total U.S. operations, including:

- Vehicle development
- Production
- Parts manufacturing
- Sales and service of new vehicles

North American Automaker Investments (2010 – 2012)



Lower Tier Labor Force Density to Support Automakers and Tier 1 Suppliers



Southern Automotive Research Alliance (SARA)

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SARA Objectives

Accelerating the Growth of the U.S. Automotive Manufacturing Industry:

A plan for the Southeast United States region

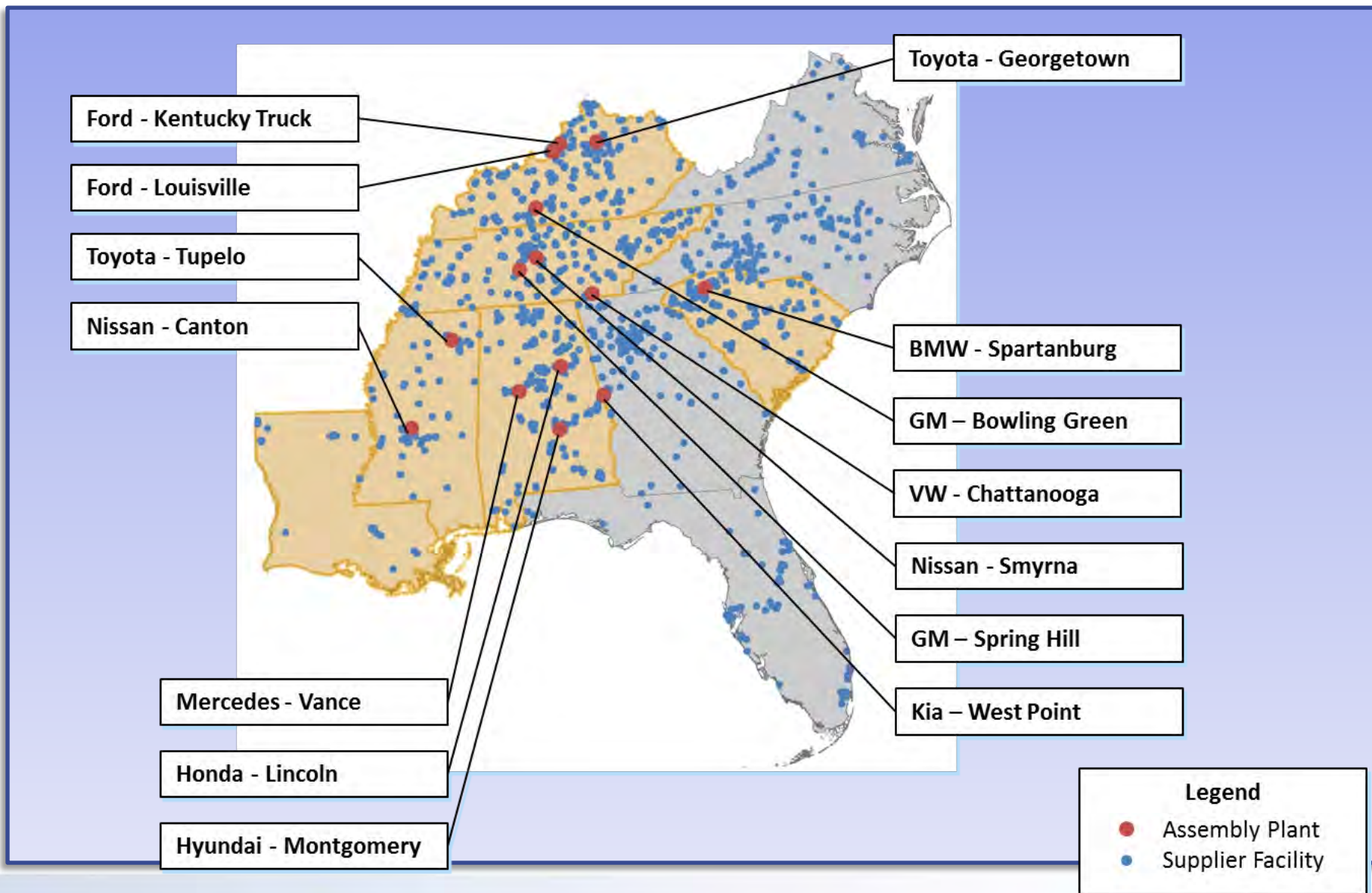
Objectives:

Identify actionable, industry-driven recommendations for further growth and development of the southern automotive industry. Key research criteria will emphasize:

- What do current companies need to create more jobs?
- What do international companies need to invest in the region?
- How to achieve greater supplier density, and capture a greater share of the automakers' global supply chain production and investment?
- Recommend academic initiatives to enhance cooperative relationships that strengthen support of industry.

An evaluation of current and future white-space will focus on industry needs vis-à-vis supply chain, research and development support, workforce development, technologies, and policy matters.

SARA Region Automotive Assembly & Supplier Facilities



Southern Automotive Research Alliance (SARA)

Support & Participation by:



Alabama



Kentucky



Louisiana



Mississippi



South Carolina



Tennessee



Timeline & Next Steps:

Key Milestones to date:

- March 2013 – Regional Workshop, Washington D.C.
- April 2013 – CAR Formalizes Proposal based on outcome of March workshop
- May-July 2013 – Refinement of research plan and agreement of 6 states
- Aug. 2013 – CAR Announces Launch of SARA Research Initiative
- Sept. 2013 – Planning & Alignment Workshop, Atlanta, GA

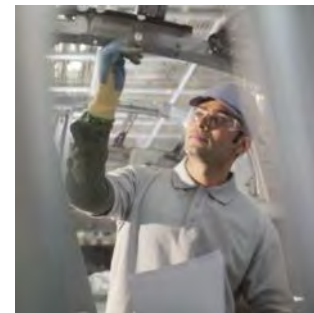
Next Steps:

- One-on-One Meetings w/each participating State/Group
- Interviews with OEMs and Major Suppliers
- Secure Group Portal for Updates and Information Sharing
- Regular Monthly Status Update Calls

Events & Quarterly Group Meetings:

- Q4, 2013 – Meeting at Southern Automotive Conference – Biloxi, MS
- Q1, 2014 – Meeting & Presentation at South Carolina Auto Summit - Greenville, SC
- Q2, 2014 – April Meeting, Spring Hill, TN
- Q3, 2014 – July/Aug. Meeting - TBD
- Dissemination activities TBD by Alliance

2013 Southern Automotive Conference



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