PLASTICS PARTNERSHIPS for AUTONOMOUS FUTURE

Gina Oliver
American Chemistry Council Plastics Division
Who are we?
4 disruptive technology-driven trends ... 

- Electrification
- Connectivity
- Autonomous driving
- Diverse mobility

... radically changing the mobility industry

- Shifting markets and revenue pools
- Changes in mobility behavior
- Diffusion of advanced technology
- New competition and cooperation

SOURCE: McKinsey
Plastics:

- Lighter yet stronger
- Virtually unlimited, sustainable Solutions
- Unique, flexible designs
- Essential enabler for AVs
Carbon fiber demand to reach $28 billion by 2024.
Sustainable Solutions

- Recycling & Recovery
- Sustainable, U.S. feedstock
- Bio-based possibilities

IF THE U.S. CONVERTED ALL OF ITS UNRECYCLED PLASTICS INTO FUEL, WE’D HAVE:

5.7 BILLION GALLONS OF GAS ANNUALLY = 9 MILLION CARS!

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Creating Partnerships

Faster, Smarter, Better
VISION:

By 2030, the automotive industry and society will recognize plastics and polymer composites as preferred material solutions.
Outline

- A look back to 2014 Roadmap
- Key roadmap drivers/trends: Then and Now
- Roadmap development process
- How to get involved
The Roadmap is build through expert input

Roadmap contributors

- OEMs
- Tier suppliers
- Materials developers
- Researchers
- Federal agencies

Vision

By 2030, the automotive industry and society will recognize plastics and polymer composites as preferred material solutions that meet, and in many cases set, automotive performance and sustainability requirements.
Why update the Roadmap now?

**Vehicle Autonomy**
- Urbanization
- Mobility/ridesharing services
- Vehicle-technology convergence
- Consumer preference

**Mobility/Ridesharing Services**
- Evolving vehicle ownership paradigms
- Urbanization

**Connectivity**
- Emerging 5G wireless technology
- Complex/competitive landscape with tech. giants/mobility providers
- Vehicle safety; DOT 2020 vehicle-to-vehicle (V2V) communication mandate?

**Steel/Aluminum Tariffs**
- Potential tax on competing materials options

**Safety, Cybersecurity**
- Autonomy, connectivity, mass reduction

**CAFE [Fuel Economy] Standards**
- Trump Administration seeking to roll back standards

**Alt. Powertrains/Electrification**
- Declining battery prices
- Consumer demand
- EU transport-related CO₂ regulations
Autonomous vehicles create big questions for materials

- **Vehicle use: 10% → 70%**
  - What does this mean for interior materials?

- **Drastic reduction in vehicle accidents**
  - What does this mean for vehicle crash requirements and safety features?

- **Vehicles need to see each other and be seen by each other**
  - What does this mean for paint and coatings?

- *As you envision autonomous vehicles of tomorrow, what do the materials need to do?*
Why should I care?

ACC’s Roadmaps have guided the investment of more than $400M in groundbreaking R&D
The Roadmap’s top priority was funded in <1 year

**Technology Development Center**
Establish an independent, pre-competitive technology development center where OEMs and suppliers can conduct laboratory work and test concepts at small volumes while collecting standardized data

- **Established:** January 2015
- **Funding:** $259 million
- **Focus:** Low-cost, energy-efficiency manufacturing of fiber reinforced polymer composites (CFRP)
What is the roadmapping process?

Structured interviews
Online surveys
Small focus-group workshops
Larger expert workshops
What is the roadmapping process?
How can you get involved?

1. **Today:** Contact Jared Kosters (jkosters@nexightgroup.com)
   - Conduct 1-on-1 interview at AVS 2018
   - Receive notices about online surveys & future events/roadmapping workshops

2. **Later:** Contact Gina-Marie Oliver (Gina-Marie_Oliver@americanchemistry.com) for questions about ACC engagement
As you envision autonomous vehicles of tomorrow, what do the materials need to do?