BACKGROUND + METHODOLOGY

GLOBAL EPICENTER OF MOBILITY
REVOLUTIONIZING THE DETROIT REGION

Detroit Regional Partnership

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OVERVIEW

The Future Mobility Technology Study (FMTS) is a comprehensive report identifying the seven advanced mobility technologies with the strongest mid-term investment and employment growth potential in the Detroit Region. The study assesses projected technology growth in key mobility sectors through 2030, with a focus on how each sector could impact the Detroit Region through the lens of job creation and potential differentiated investment.

The assessment of the seven mobility technologies in the report considered how existing cluster capabilities across mobility sectors could be leveraged to drive growth in current industries while also directing resources toward emerging or adjacent sectors beyond automotive.

PURPOSE

The Future Mobility Technology Study provides business leaders and mobility stakeholders in the Detroit Region with valuable insights to help shape near-term growth strategies and strong investment opportunities. Additionally, this study is meant to assist GEM and its partners build upon efforts to transform the Detroit Region into a competitive and prosperous advanced mobility industry cluster, elevate talent and current employers in the Detroit Region, and attract new domestic and international businesses and technologies. An additional goal is to diversify the trademark mobility capabilities of the Detroit Region beyond internal-combustion engine (ICE) vehicles, where the region has a strong legacy, into new mobility sectors. These sectors include battery-powered electric vehicles (BEVs), medium and heavy commercial vehicles (MHCV), maritime, off-highway, aerospace, and emerging mobility technologies.

PROCESS

Our methodology was guided by S&P Global Mobility, a trusted leader in industry intelligence for more than a century. The study involved a thorough process of analysis and stakeholder engagement and began with an initial identification of more than 40 key mobility technologies, which were then narrowed to the 12 mobility technologies with the greatest potential for the Detroit Region.

This initial list of technologies was further refined through a series of convenings, seeking input from the six GEM projects, Detroit Regional Partnership Investors and stakeholders, and industry representatives. The process funneled critical system areas essential to the cluster, particularly within the global and regional ICE to BEV transition and Advanced Driver Assistance Systems (ADAS) growth trajectories. Seven technologies were ultimately selected for an in-depth supply chain analysis by the S&P Global Mobility team.

TIMEFRAME

MARCH 2024

Study kickoff

MAY 2024

Technology selection convening with GEM Pillars and DRP Partners

MAY 2024

Technology selection convening with Detroit Region economic development and government stakeholders

JUNE 2024

Technology selection confirmation convening with mobility OEMs and suppliers

SEPTEMBER 2024

Study completed, and final dissemination convening held

2025

Ongoing dissemination efforts

GLOSSARY

MOBILITY SECTOR DEFINITIONS

- **(LV) Light Vehicle:** Passenger cars, pickups and light commercial vehicles up to 6 tons
- **(MV, MHV) Medium & Heavy:** Trucks above 6 tons and bus chassis
- **Construction, Agriculture, Mining & Off-road:** Tractors, off-road vehicles and All-Terrain Vehicles (ATVs)
- **Aerospace:** Aircrafts - Piston airplanes, turboprop airplanes, business jets, helicopters, and electric Vertical Takeoff and Landing (eVTOL) vehicles
- **Maritime:** Recreational boats - personal watercraft, wake sport, fishing & pontoon and others
- **First Mile/Last Mile (FMLM):** Commercial drones

STUDY ABBREVIATIONS AND TERMS

- **ADAS:** Advanced Driver Assistance Systems
- **BEV:** Battery Electric Vehicle
- **CAGR:** Compounded Annual Growth Rate: The CAGR in vehicle production measures the average annual rate at which vehicle production grows (or declines) over a set period, assuming the growth compounds steadily each year. It smooths out year-to-year fluctuations and provides a clear view of long-term production trends, helping compare growth across different markets, technologies, or regions.

$$\text{CAGR} = \left(\frac{\text{VEHICLE PRODUCTION AT END OF PERIOD}}{\text{VEHICLE PRODUCTION AT START OF PERIOD}}\right)^{\frac{1}{\text{NUMBER OF YEARS}}} - 1$$

- **DRP:** Detroit Regional Partnership
- **FCEV:** Fuel Cell Electric Vehicle
- **FMTS:** Future Mobility Technology Study
- **GEM:** The Global Epicenter of Mobility is comprised of six pillars and lead organizations:

PILLAR	LEAD ORGANIZATION
GEM Central	DRP
Talent Transformation	SEMCA: Southeast Michigan Community Alliance
Start-Up Support	TechTown Detroit
Testing & Proving	Michigan Office of Future Mobility & Electrification
Supply Chain Transformation	Economic Growth Institute at the University of Michigan
Site Readiness	DRP

- **Penetration Rate:** The percentage of vehicles produced that has adopted or is using a specific technology
- **TAM:** Total Addressable Market: the total number of vehicles produced on which a given technology can potentially be deployed. Applying the appropriate technology penetration rate to the TAM results in the number of vehicles produced that will use the technology in question.