Breakout Session 9 Effects of Vehicle Automation on Energy-Usage and Emissions

Summary of Key Findings and Lessons Learned

- VMT will likely increase in response to AV Technology, assuming private travel.
  - Energy efficiency and emission intensity will likely decrease.
  - Energy consumption and emissions may increase, in aggregate.
- The gasoline tax’s usefulness will decrease as fuel sources and efficiencies change.
- CACC and Platooning systems will theoretically improve fuel economy and lane capacity.
  - How human drivers will actually respond to such systems, in mixed traffic, is not certain.
- Current fuel economy regulations do not well capture autonomous technology.
  - Safety technology can not be considered for off cycle credits.
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Recommended Action Items

• Discuss how to weight the goals emission end energy absolute reduction vs. intensity reduction.
• Investigating and debate the potential of a VMT tax.
• Investigate whether CACC and Platooning systems can be gamed, in mixed vehicle environments, in a way that significantly reduces net performance.
• Investigate methods for regulating fuel economy of Autonomous Vehicles.
  • Investigate how to calculate the external benefits of these technologies.
  • Debate whether external benefits should count towards fuel efficiency regulations.