Future Mobility Themes: Summarizing today's MSTRS discussion

Rich Kassel

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Caveats…and thanks!

- This is a first-cut at a ton of great material – thank you all for all your incredible work and participation!
- This is just an overview of themes that were common to multiple groups, not a comprehensive list of every good idea
- Additional details and recommendations are in each work group presentation and report, and will be captured in the final summary report later this summer
- ***THANKS AGAIN FOR ALL YOUR WORK AND PARTICIPATION!!!***

10 Themes Common to (mostly) all of the groups

1) **To meet our GHG, criteria pollution, and other Future Mobility goals, we will need to decarbonize the entire sector – which will mean accelerating the use of zero-emission technologies, decarbonizing the liquid fuels and the engines that will continue to be used in many applications, and finding ways to move people and goods in as sustainable and equitable a way as possible**
   - Certain vehicle classes and applications will electrify relatively quickly (e.g., passenger vehicles, transit buses, school buses), but even in the best case scenario, millions of cars and most heavy-duty, nonroad, marine, locomotive, and aviation engines will still use ICEs in midcentury
   - The next ten years are critical—strategies that accelerate rapid deployment at scale will bring cleaner air, improved health, and reduced GHG emissions faster in the short-run and in the long-run
2) **Good data and analysis will be critical to meeting our Future Mobility goals**
   - We will need better, updated, more nimble databases, emissions models and monitoring, as well as new analytic tools designed to answer the questions we are asking
   - Examples of areas to consider include updated MOVES model (e.g., for ultrafine PM and aerosols, emissions from brakes and tire wear, etc.), life-cycle analyses, personal and community exposure in EJ and near-highway environments, telematics data, consumer choices for both personal mobility and their package delivery, logistical/operational improvements in goods movement, more holistic fuel/vehicle systems approaches (e.g., V2G integration), fleet averages that consider ZEVs accurately, land use models that consider pedestrian and bike safety, community mapping to understand EJ impacts, evaluating the impact of Covid-19 on transportation, cost-benefit analyses, good understanding of grid, infrastructure, model availability and related issues, etc.

3) We will need to integrate principles of social equity, environmental justice, and mobility justice in ways that have never been done before

- Prioritize investments and programs in a way that increases social equity, affordability, accessibility, and mobility justice to create economic opportunity
- Use DERA and other tools to prioritize pollution hotspots, disproportionate burdens, transportation justice, workforce development (e.g., EV maintenance), increase scrappage of oldest, dirtiest vehicles
- Adopt new approaches to longstanding EJ issues, including compliance and enforcement (e.g., consider ports as stationary sources; coordinate with OAQPS, OECA, etc.)
- Improve real-time and other emissions monitoring to better understand exposure personal and community exposure

4) We will need increased collaboration across agencies and levels of government

- EPA should continue to assert the leadership role on fuel and vehicle issues
- As we move from regulating tailpipe emissions to broader, more holistic approaches to moving people and goods sustainably, increased collaborations with DOE, DOT, HUD, DOL, state and local governments, standard-setting bodies, industry, NGOs, community groups, and others will become more important than ever before

5) **We will need to consider solutions that are outside OTAQ's traditional regulatory authority**

- Additional or new regulatory, non-regulatory, and other strategies will be necessary to mitigate the externalities we can already foresee – upstream/stationary source emissions, battery mining and recycling issues, disproportionate impacts on communities of color, environmental and other impacts related to our people and goods movement mode choices, and others

6) **Fuel-neutral, technology-agnostic performance standards will continue to be critical for both fuels and vehicles**

- Examples provided include finalizing Low-NOx rule for MY27, as well as future low-carbon fuel performance standards, low-carbon biofuels standards, gasoline/diesel standards, Phase 3 HD GHG rule, other vehicle emission and efficiency standards

7) **Incentive, public education, and outreach programs will continue to be critical to accelerate deployment**
   - SmartWay, 21st Century Truck Partnership, Energy Star, partnerships to promote sustainable communities, and others
   - New sources of funding should be identified and secured
   - OTAQ should consider ways to coordinate with DOE, DOT, and charging entities (e.g., Electrify America, utilities) to increase funding, visibility, consumer education, etc.
8) **We will need to consider new approaches to solve new problems and old problems (e.g., legacy vehicles), some of which are beyond EPA's traditional role**
   - Examples of ideas to consider beyond traditional tailpipe emission standards include an EV efficiency standard; new roles for high-octane fuels; evaluating the use of hydrogen for biofuel production; strategies to increase vehicle occupancy; shifts towards shared vehicles, "right-sized" vehicles, micro-mobility, and more active transportation modes; integrating automated vehicles; CA's Clean Mile Standard; engaging in transit, land use, and related issues that impact congestion, mobility and VMT; and others
   - We will need to consider how to integrate transportation issues that are not directly emissions-related but are part of a holistic approach to transportation, such as safety, affordability, reliability, access to jobs, and other issues

9) Additional strategies will be needed for hard-to-electrify components of the legacy and future fleets

- Almost every group noted the need for nonroad strategies to complement strategies for highway vehicles
- Examples include long-haul trucking, construction and agricultural nonroad engines, marine, locomotive, and aviation
- R&D support and other strategies will be needed to explore new low-carbon, carbon-neutral, or even carbon-negative fuels, such as hydrogen, e-fuels, or advanced biofuels

10) There is no “silver bullet”

- Meeting our near-term, mid-term, and long-term climate, health, and equity goals will require an integrated, holistic, data-driven, approach that uses new and existing tools, approaches, and strategies