2020 Mobile Source Strategy

Webinar – October 7, 2020

Unanswered Questions/Comments and Staff Responses

	Question/ Comment	Commenter
1	I could not find any liquid fuel (gas and diesel) proposals in the MSS, even though there are many many gas and diesel mobile sources in use for decades to come. Does CARB have any plans for liquid fuels? RESPONSE: The Low Emission Diesel Requirement measure included in the 2016 MSS, as is discussed in Chapter 2 of the Workshop Discussion Draft 2020 MSS, is still under development and will provide reductions from ongoing use of liquid diesel fuel. Fuel/energy assumptions used for the 2020 MSS can be found in Appendix A: Upstream Energy Emission Factors for Scenario Modeling. However, the information presented is for informational purposes. For climate planning, assumptions and forecasts for transportation fuels will be revisited in the 2022 Scoping Plan. For air quality planning and SIPs, strategies to address criteria emission reduction needs from energy production facilities (i.e. stationary sources) will be addressed by the air districts during the development of regional attainment plans.	Steven Douglas, Autos Innovate

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2	Related to Mr. Cunningham's response to the grid issues, is there any data available correlating the overall increased electrical demand and the countermeasures ideas for the smart grid etc? (and the impact it could have on SORE portable generators?) RESPONSE: Although we do not have a correlation developed, the 2020 MSS LDV scenario electricity demand is projected to be 22,192 GWh/year in 2030, and 53,412 GWh/year in 2045 statewide. With increased vehicle electricity demand on the grid, CPUC and CEC are employing multiple strategies to create a smarter integrated grid. CPUC has issued guidance to the investor owned electric utilities (IOUs) to create time of use rates to help direct drivers to charge their vehicles at non-peak electricity demand times. CPUC is also in the process of developing guidance on vehicle to grid integration policies so that IOUs may develop programs to use vehicle batteries to help minimize the impact to the grid. CEC is in the process of updating the vehicle to grid integration roadmap so that the State would have a cohesive pathway forward to developing a more integrated grid. CPUC is working with utilities like PG&E on wildfire mitigation plans to make the grid more reliable and resilient, and reducing public safety power shutoff (PSPS) impact. These plans are developed in response to Senate Bill (SB) 901 requiring all California electric utilities to prepare plans on constructing, maintaining, and operating their electrical lines and equipment to minimize the risk of catastrophic wildfire. Besides those, CPUC is continuing taking actions to mitigate the impacts of PSPS events. These actions include: • On June 11, 2020, the CPUC adopted short-term Actions to Accelerate Microgrid Deployment and other resiliency solutions in Decision 20-06-017. • On June 5, 2020, the Commission adopted updated and additional PSPS guidelines to mitigate wildfire risk and the impact on customers when a utility considers implementing a PSPS. These guidelines were approved in Decision 20-05-051 which is Phase 2 of Rulemaking 18-12-005. The CPUC opened this rulemaking to examine de-energization of power lines (PSPS). • On May 28, 2020, the CPUC enhances community engagement and collaboration for utility PSPS events. (Fact sheet here) The reduced impact of PSPS event can certainly further reduce the usage of SORE portable generators in California as well. More information on these programs can be found at: https://www.cpuc.ca.gov/psps/.	Doug Hartley, Honda Motor Co

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3	Regarding the capital cost to transition based on technology type, is that in addition to the existing average product cost or in place of the existing product cost or (in the case of full electrification) the replacement of the power source (ie that cost is offset by the cost of the ICE)? RESPONSE: The capital costs to transition the fleet that are discussed in Chapter 4 of the Workshop Discussion Draft 2020 MSS are the current costs, expressed as a range or average, of the relevant vehicle/piece of equipment, based on data collected by CARB programs. These estimates are not intended to express incremental costs above/beyond conventional technologies, and do not account for potential fuel cost savings, or fueling and/or charging infrastructure costs as these items are the subject of other reports being developed through collaboration between CARB and other State agencies.	Doug Hartley, Honda Motor Co
4	What assumptions are enabling reductions in Preempt equipment? Incentives to encourage fleet turnover, or something else? Thank you. RESPONSE: As CARB does not have authority to set standards for federally-preempt equipment, we plan to work closely with U.S. EPA and/or petition them to adopt more stringent standards for federally-preempt engines. (For more background on what federal preemption means, see this website: https://ww3.arb.ca.gov/msprog/offroad/preempt.htm)	Patrick Uhlenhake, John Deere

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5	This is Hadi Hajimiri, founder of Popion Mobility. The funding projects expenditure of $15-29 billions across the various sectors to push towards zero/low emissions. It appears that most of the incentives are spent on per vehicle basis to cover vehicle procurement. As you may know, fuel infrastructure costs could be comparable to vehicle costs. For example for the heavy-duty trucks/buses segment, charging infrastructure could cost even more than the vehicle costs themselves (LA MTA example). Are there other similar volume sources of funding to cover infrastructure (from CEC for example)? RESPONSE: As was specified in the Workshop Discussion Draft 2020 MSS, fueling and/or charging infrastructure costs were not estimated or reflected in Tables 4 and 5 as these items are the subject of other reports being developed through collaboration between CARB and other State agencies. That being said, certain CARB programs have provided funding for ZEV infrastructure in the past, including the Hybrid and Zero-Emission Voucher Incentive Program (HVIP), and some advanced technology demonstration and pilot projects. Additionally, as a part of the Volkswagen Environmental Mitigation Trust that was the result of a settlement with CARB, Volkswagen has agreed to invest $800 million over a 10-year period for ZEV infrastructure, education, and access in California. Electrify America will invest $200 million in four installments over the next 10 years. Further, while not direct funding, 2018 amendments to CARB's Low Carbon Fuel Standard added a ZEV infrastructure crediting provision to the support the deployment of ZEV infrastructure. There are also programs and potential sources of funding for ZEV infrastructure in California aside from those managed by CARB, the foremost of which is the California Energy Commission's (CEC) Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program). Additionally, CEC manages the California Electric Vehicle Infrastructure Project (CALeVIP) to provide streamlined incentives for electric vehicle charging infrastructure, and through 2019, CEC has allocated $71 million for charger rebates. The California Public Utilities Commission (CPUC) authorizes investor-owned electric utilities to undertake transportation electrification activities; to date, CPUC has approved over $780 million for transportation electrification programs under SB 350.[1]	Hadi Hajimiri, Popion Mobility

[1] California Public Utility Commission, Approved SB350 Projects. Accessed July 27, 2020: https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442457944

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6	Is Carb considering a mixed approach of ZEV and Carbon Neutral Fuels in the HD market in 2035+? RESPONSE: The on-road heavy-duty scenario in the 2020 MSS assumes 100% of CA purchases as zero emission vehicles (ZEVs) by 2035. As part of the 2020 MSS, both the emissions associated with the operation of the vehicles (i.e. tank-to-wheel emissions, TTW) and upstream energy production (i.e. well-to-tank emissions, WTT) were assessed. In order to estimate WTT emissions, staff developed WTT emission factors for each of the five transportation fuel types in the MSS, including gasoline, diesel, electricity, hydrogen, and compressed natural gas (CNG). In this assessment, we considered biofuels and renewable fuels (e.g. renewable diesel), in addition to fossil fuels. More information on upstream emissions can be found in Appendix A of the Workshop Discussion Draft 2020 MSS. In addition to the 2020 MSS on-road heavy-duty scenario, an alternative concept is also exercised. This concept applies cleaner ICE vehicles, instead of ZEVs to achieve NOx reductions needed to meet the 2031 and 2037 South Coast Ozone SIP targets. Under this alternative concept, ZEV phase-in schedule follows the mandated requirement by the ACT rule instead of the ambitious MSS ZEV phase-in schedule. While this alternative scenario achieve the same level of NOx reductions in 2031 and 2037, compared to the MSS scenario, it will result in a much higher number of cleaner ICE engines in 2045 and almost additional 1.4 billion diesel gallons equivalent of fuel being consumed in 2045	Matei Alexandru, Jacob's Vehicle Systems
7	Slide 70 (Funding Needed) shows Incremental Statewide 2025 Population and total funding appears to be based on that value. What is "incremental population" and why isn't funding based on total population? RESPONSE: Slide 70, and Table 4 in Chapter 4 of the Workshop Discussion Draft 2020 MSS, estimate the funding that would be needed to incentivize the full incremental population of vehicles and equipment necessary over the next five years to achieve the future scenario technology trajectories. The incremental population is the difference in population for the relevant technology type and category between the baseline and 2020 MSS scenario trajectories (for MD and HD on-road vehicles, this is specific to the population from accelerated turnover). Incremental populations are used to estimate the funding needed because the baseline modeling accounts for natural turnover that would occur to meet existing regulatory timelines; natural turnover would, in most cases, not be funded through existing CARB incentive programs.	Mark Poublon, Fiat Chrysler Automobiles

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8	Comparing slides 70 and 71, small off-road engines (SORE) are excluded from the "Funding Needed" slide. Was exclusion of SORE an oversight, or intentionally omitted? (If the latter, why?) Slide 71 suggests it will cost $10-11 billion to transition SORE products. Is CARB's expectation that California residents will bear that cost? RESPONSE: SORE is not included in the Funding Needed slide on Slide 70, or within Table 4 of the Workshop Discussion Draft 2020 MSS, because the 2020 MSS scenario is based entirely on the amount of cleaner equipment that would be achieved under the draft proposal for the amendments to CARB's SORE regulation as presented at the June 2020 workshop, and does not include potential accelerated turnover from incentives. That being said, it is possible that incentive funding will be made available for the turnover of SORE in the future, and thus Slide 71 and Table 5 in the Workshop Discussion Draft 2020 MSS only shows the approximate current cost for each category and the population of the relevant fleet in the 2020 MSS scenario, and does not make assumptions about how much funding will be needed from the private vs. the public sector. In addition, while staff recognizes that incentives are currently used in some cases to fund SORE, most prominently through District programs for lawn and garden equipment, these programs are currently not funded through CARB incentive programs or with State funds – as such, incentive funding needed was not estimated for this category.	Jim Kliesch, Honda Motor Co
9	I echo the concerns raised by the Coalition for Clean Air about over-dependence on incentive funding, and appreciate the focus on development on more ambitious standards to maintain pathways to attainment of clean air and climate standards. RESPONSE: Thank you for your comment. While incentive funding is critical to achieving emissions reductions from vehicles and equipment under accelerated timelines that cannot be achieved through regulatory development, it is important to note that a vast majority of the reductions needed to meet federal ozone and PM2.5 standards, as were accounted for in recent SIP submittals, will come from the combination of ongoing implementation of CARB's existing control program and regulatory measures identified in the 2016 State SIP Strategy. That being said, CARB continues to push forward to identify new regulatory and programmatic mechanisms to control emissions from all mobile sources in California.	William Barrett, American Lung Association

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10	what is the timeline for development of the State SIP for the 70 ppb 8-hour ozone standard? RESPONSE: CARB staff is actively planning for the development of next State SIP Strategy. More formal development of that document will begin at the end of this year, once the 2020 MSS has been completed. Staff will be working closely with the local air districts and will be working to develop a draft of the next State SIP Strategy, including draft measures and commitments, for release in 2021. Development will continue in concurrence with development of the regional attainment plans that require emission reductions beyond those in the baseline emissions inventory, and will be completed in time for submittal to U.S. EPA in advance of the August 3, 2022 ozone SIP deadline.	Brent Newell, Public Justice
11	Two part question: Will there be another workshop where we spend more than a few minutes discussing the META tool, considering the fact that it is being used to inform the development of the MSS? In order to maximize public transparency, will you be posting all comments on the META tool on the 2020 MSS web page? RESPONSE: No additional workshop for META tool alone is planned at this point. However, please feel free to reach to us if you have any detailed META questions. Also, a recording of the October MSS workshop is available online, where you can revisit the demo that staff provided on META tool. Following our beta tool release, we answered numerous questions on tool functionality and major scenario assumptions. We also incorporated feedback we received on the beta version into the newest draft version of META, which is available here (under Release of DRAFT Mobile Emissions Toolkit for Analysis (META) - October 2, 2020): https://ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy We will consider incorporating other suggestions as we move forward.	Tiffany Roberts, WSPA

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12	The presentation does not provide much focus on the adequacy of the MSS in meeting the 2037 ozone standard for the SCAB. Will the final Strategy document present an analysis of the NOx emission target in 2037 in the SCAB, the NOx reduction from the MSS, the federal preempted vehicle emissions and the remaining NOx reductions needed to be provided by the SCAQMD? RESPONSE: According to 2016 South Coast AQMP, the preliminary projections, based upon ozone "isopleths" developed for the 2031 emission scenarios indicate that 2037 NOx carrying capacity to meet the 70 ppb 8-hour ozone standard in the Basin could be as low as 75 tpd. CARB used this value as a rough estimate of the attainment target. However, the final NOx emission target will be established by South Coast as part of the air quality modeling for the 70 ppb 8-hour ozone standard. As noted in the Workshop Discussion Draft 2020 MSS, CARB staff will continue to develop the concepts described in the 2020 MSS to translate them into measures that will be included in the State SIP Strategy being developed to support attainment plans for the 70 ppb 8-hour ozone standard. The State SIP Strategy, along with the next South Coast AQMP, will have detailed discussions on the level of emissions reductions needed from all sectors (mobile, stationary, and area sources) including federally regulated sources along with specific measures that will achieve those NOx emissions reductions. While the 2020 MSS defines the mobile source technology mixes needed, it does not include concepts/measures for stationary or area sources as will also be needed to achieve the 70 ppb ozone standard in South Coast by 2037.	Tom Cackette, Tom Cackette Consultanting
13	To clarify, did you just say that this slide deck will not be available online until sometime after the Oct 21 written comment deadline? RESPONSE: The presentation from the October 7, 2020 workshop on the 2020 MSS was made available prior to the workshop on our website here: https://ww2.arb.ca.gov/sites/default/files/2020-10/2020_MSS_October_Webinar_Presentation.pdf. Further documentation on the 2020 MSS will be updated as it becomes available on our website here: https://ww2.arb.ca.gov/resources/documents/2020-mobile-source-strategy.	Leah Silverthorn, CalChamber

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14	In the workshop discussion draft, there was a section on page 115-116 regarding recreational watercraft, but I did not hear it discussed today. Is that still a consideration for the 2020 MSS? RESPONSE: While the workshop presentation did not specifically discuss the watercraft scenario, it is still considered as one of the potential scenarios for the 2020 MSS to get additional emissions reductions. As discussed in the Workshop Discussion Draft 2020 MSS, the current scenario presents NOx emissions reduction of 0.6 and 2.5 tpd in 2031 and 2037, respectively.	Chad Nere, Honda Research and Development
15	Regarding OGVs, how does CARB intend to "Replace Tier 0/1/2 visits with Tier 3 or cleaner by 2031"? That scenario seems extremely optimistic given the lifespan of vessels and the high cost of replacement. RESPONSE: CARB plans to work with SCAQMD to incentivize cleaner vessel visits and this may include both Tier 3 vessels and Tier 2 vessel with retrofits. Although options are still being considered, it is clear many of the retrofitting devices (or potentially water-in-fuel emulsion in some cases) could be cost effective and achieve similar reductions as Tier 3 OGVs.	Greg Alexander, P2S inc
16	Thanks for your answer on TRU's Cory. We also have a similar difficulty with Forklifts where electric forklifts have not been built for the "rough terrain" category, which is primarily used by agriculture. This may not be cost effective or technologically feasible, and seems premature to move forward at this time. RESPONSE: CARB recognizes forklifts are used in many conditions, and although many may be well suited to electric operation, in other cases it will not be feasible. While the 2020 MSS uses a broad categorization, both incentive plans and any required actions (such as the consideration currently underway for forklifts) will carefully consider duty cycle, location of operations (field vs warehouse), size of engine, and more.	Chris McGlothlin, California Cotton Ginners and Growers Association