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Jerilyn Mendoza
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SoCalGas Response to AB 32 Scoping Plan:

“We’re Decarbonizing the Pipeline”

- SCG appreciates that ARB’s new AB 32 Scoping Plan replaces most of its electricity-specific language with technology neutral language. We have always supported a technology neutral approach to emission reductions, and believe the best and most cost effective way to achieve mid-and-long-term GHG reduction targets will be realized by letting the market decide the mix of future energy technologies.
- Setting carbon-based standards and goals is a much better approach than technology mandates – and will help allow a broader array of low carbon energy resources contribute to the state’s mix of carbon reduction energy strategies.
- We also appreciate the approach towards setting a midterm target which will help the state integrate GHG reduction efforts with criteria pollutant reduction efforts.
- But while the revised draft is more technology neutral than the previous draft, ultimately the vision for 2050 communicated in the plan relies primarily on an unrealistic vision of the electrification of most energy end uses.
- SoCalGas believes that there are important natural gas pathways that help us achieve the 2050 GHG reductions goals faster and more economically. We are focused on “decarbonizing the pipeline” just as CARB is focused on “decarbonizing electric generation”.
- Decarbonizing our natural gas delivery systems keeps intact the inherent energy efficiencies of direct uses of natural gas, at a lower carbon content -- without creating the dramatic increase in electric demand and cost which makes decarbonizing electric generation a challenge.
- How do we accomplish this?
 - *By pursuing new gas technologies in the transportation sector;*
 - *By developing smaller, scalable electric generating technologies to integrate with renewables, evening out their delivery to the grid;*
 - *By pursuing distributed generation -- with fuel cells and micro turbines and state of the art CHP systems;*
 - *And by increasing the efficiencies of all our natural gas technologies most everyone relies on – for water and space heating and cooking; and for commercial and industrial processes that grow our economy;*
 - *And, we accomplish this by focusing on the development biogas, and hydrogen reformation and production. We move from geologic methane toward bio-methane, and synthetic methane and hydrogen blends.*
- Our vision is consistent with the ARB’s “decarbonizing” vision -- but we take a different approach to achieving the plan’s anticipated GHG reductions -- one we believe is more timely and less costly than the ARB approach.
- We do note that methane emissions from all sources are a significant focus in the new draft. As work to quantify and control emissions from anthropogenic sources progresses, we will remain a part of that process.
- An inclusive and comprehensive inventory of both anthropogenic and non-anthropogenic sources of methane is necessary to develop an effective methane emissions control strategy. Part of that will need to be a science based study of actual emissions from natural gas systems.
- To that end, we are working with the Environmental Defense Fund on a fact-based, nationwide emission analysis of the entire natural gas system. And here in California, we will work with ARB on a statewide assessment that will allow us to develop control measures based on sound science.

PATHWAYS TO NEAR-ZERO-EMISSION NATURAL GAS HEAVY-DUTY VEHICLES

California policy makers face significant challenges to meet the state's greenhouse gas (GHG) reduction targets for 2050. One such challenge is that the state's GHG reduction plan fails to meet air quality standards for ozone, governed by federal law. Air quality regulators must take immediate steps to dramatically reduce emissions from the largest contributors to air pollution: diesel-fueled heavy-duty vehicles and equipment. Emerging near-zero-emission natural gas technology can provide the quickest, most cost effective solution to securing the emission reductions needed.

Background

California has made significant strides cleaning up harmful emissions from stationary sources and light-duty vehicles. Emission reduction goals for criteria pollutants and GHGs are becoming increasingly stringent, however, making it more challenging for California's most impacted air basins to meet federal clean air requirements. Heavy-duty diesel trucks and equipment are, by far, the largest contributors to the nitrogen oxide (NO_x) and toxic air contaminant emissions inventories of the South Coast and San Joaquin Valley ozone non-attainment areas, and are major sources of GHGs. Thus, in order to meet Federally-mandated air quality deadlines, these regions must quickly phase in heavy-duty vehicles that are 75% to 90% cleaner than current emission standards.

Solution to California's Need:

Near-Zero-Emission, Natural Gas-Fueled Heavy-Duty Vehicles

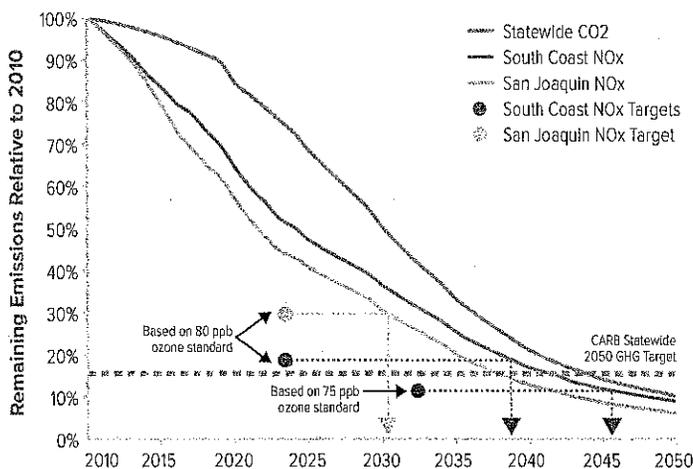
The vast majority of California's ozone pollution is a result of activity in the heavy-duty transportation sector. Fortunately, alternative fuels in heavy-duty vehicles have already found a substantial foothold in the market and are poised to achieve the emission reductions

necessary to push California toward attainment of its air quality and climate protection objectives. Natural gas-fueled engines for trucks, buses, and off-road equipment can provide an immediate and cost-effective solution as central feature of California's smog reduction and climate mending programs, while dramatically decreasing the mass of cancer-causing chemicals in our air.

Today's commercially available natural gas engines already emit NO_x at levels well below the current (2010) federal heavy-duty engine standard. Moreover, heavy-duty natural gas engine technology is on a developmental trajectory to achieve dramatically lower emission reductions in the near future. Natural gas engines are being tested today that emit 0.05 grams of NO_x per brake horsepower hour (g/bhp-hr). This is 75% lower than today's stringent 0.2 g/bhp-hr emission standard. These engines will be commercially available in the 2015 – 2017 time frame. In addition, technology is also being tested today that will enable heavy-duty natural gas engines emit less than 0.02 g/bhp-hr. These engines, which should be commercially available by the end of the decade, are so clean their tailpipe emissions are equivalent to those that would come out of the smokestack of a modern natural gas power plant generating electricity for a vehicle of comparable size.

Current GHG Paths Miss Ozone Goals

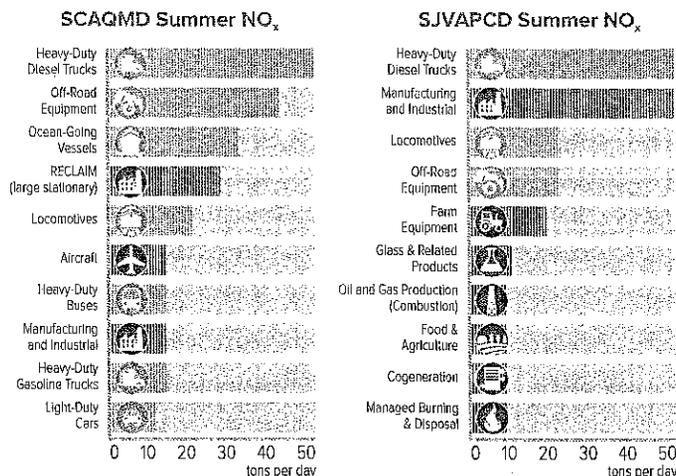
Source: Curves based on CARB Vision for clean air Scenario 3 in CARB vision model, available at <http://www.arb.ca.gov/planning/vision/vision.htm>



California's two worst non-attainment areas need rapid, dramatic NO_x reductions sooner.

Top 10 NO_x Source Categories (2023 Projection)

Mobile Sources with Good Potential for Natural Gas Conversion



The largest sources of smog-causing gases come from heavy-duty trucks.