Air Resources Board

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April 26, 2017

Chairman John Shimkus
Ranking Member Paul Tonko
2125 Rayburn House Office Building
Washington, DC 20515-6115

Dear Chairman Shimkus and Ranking Member Tonko:

I would like to thank the Subcommittee on the Environment for the opportunity to testify at the hearing entitled "H.R.806, Ozone Standards Implementation Act of 2017" held on March 22, 2017. Enclosed are our responses to the additional questions from the Subcommittee on Environment regarding H.R.806. The responses are for the hearing record.

If you have any questions or would like to discuss further, please do not hesitate to contact me or the Interim Legislative Director, Ms. Sydney Vergis, at [redacted].

Sincerely,

[redacted]

Kurt Karperos
Deputy Executive Officer

Enclosure

cc: Sydney Vergis, Ph.D.
Interim Legislative Director

Committee on Energy and Commerce
Hearing of the Subcommittee on Environment on Wednesday, March 22, 2017 entitled
"H.R. 806, Ozone Standards Implementation Act of 2017."

Additional Questions for the Record
California Air Resources Board Responses

The Honorable John Shimkus

1. **What transportation measures is California considering to meet the 2015 ozone standards?**

    a. **Could implementation of plans to meet the 2015 ozone standard necessitate changes in the composition of gasoline?**

The California Air Resources Board (CARB) does not anticipate changing the composition of gasoline to meet the 2015 ozone standard.

    b. **If so, what would additional fuel regulations cost consumers on a per gallon basis?**

See above response.

2. **Has California estimated the cost of existing fuel regulations aimed at reducing ozone and other emissions on gasoline prices, and, if so, what are its estimates?**

California's Reformulated Gasoline (CaRFG) Program reduces emissions from gasoline-fueled vehicles and equipment to help meet health-based State and federal air quality standards (including ozone standards) and reduces health risk associated with exposure to toxic air contaminants. The program functions by establishing fuel quality specifications for gasoline sold in California.

Since the initial rulemaking in 1990, the program has gone through three distinct phases, and at each phase California has estimated the costs of complying with the program. Phase II had the most significant cost impact. At the time of Phase II rule adoption, which began in March 1996, CARB calculated that CaRFG would increase production costs by about 5 to 15 cents per gallon (with an average estimated impact of 10 cents). This value was inclusive of the 2 to 5 cents per gallon needed to make Federal RFG instead of non-reformulated gasoline at that time (see this fact sheet for more information: http://www.afdc.energy.gov/pdfs/3002.pdf).

Since that analysis was conducted, updates to Federal fuel specifications continue to narrow the gap between the cost of producing CaRFG and Federal RFG. For example, until recently, a significant difference between CaRFG and Federal RFG requirements had been the sulfur content requirements. However, in 2017, the sulfur content of

Federal gasoline was reduced to an average of 10 parts per million—much closer to the California requirement—reducing the difference in cost of production between the two fuels.

Independent peer-reviewed academic analysis has confirmed that the CaRFG Program has been effective in improving air quality and that the air quality benefits have significantly outweighed the costs. (For an example see: Auffhammer, Maximilian and Ryan Kellogg. 2011. "Clearing the Air? The Effects of Gasoline Content Regulation on Air Quality." American Economic Review, 101(6): 2687-2722.)

3. **Will California implement plans to reduce vehicle miles traveled under the 2015 ozone standard?**

As I described in my testimony, last month the CARB adopted a comprehensive mobile source strategy that will not only provide the reductions needed to meet the 75 parts per billion ozone standard, but also the emission reductions needed for the new 70 parts per billion ozone standard adopted in 2015. The strategy includes reductions in passenger vehicle miles travelled achieved from efforts to meet the State's climate goals through development of more sustainable communities that support increased access to transit and other alternative modes of personal mobility. These efforts will reduce transportation costs, improve public health by facilitating more active transport and physical activity, and also reduce smog-forming emissions that will contribute to meeting ozone standards.

4. *Witnesses noted in testimony that it is unfair that, under current law, local jurisdictions may be subject to penalties for failure to attain standards, even though the failure is due to emissions from sources that are outside the jurisdictions' authority to control.*

    a. ***To assist with our identifying the problem fully, would you provide examples of the types of emissions or pollutants, natural or anthropogenic, that are outside your state's control and that may impede your ability to reach attainment of air quality standards so as to subject you to fees or other penalties?***

The Clean Air Act, coupled with California law, provides a clearly defined structure outlining responsibilities and mechanisms for addressing the full scope of sources affecting air quality. These provisions recognize that healthful air is a shared responsibility that can be achieved through clearly defined actions at the federal, state, and local level. California has long used this framework to design effective control programs that reflect a coordinated suite of state and federal actions to reduce mobile source emissions. Most recently, last month the CARB approved a comprehensive strategy to achieve the mobile source and consumer products reductions needed to meet federal air quality standards over the next 15 years.

By working with U.S. EPA, businesses, and the public, we have been able to effectively

utilize the structure of the Clean Air Act to achieve needed emission reductions. California's innovation and partnerships with U.S. EPA have led to cleaner technologies that provide benefits throughout the nation. Our package of clean vehicle standards and zero emission vehicle (ZEV) requirements are a prime example. Looking forward, CARB staff has been working with U.S. EPA to develop requirements for the next generation of cleaner truck standards by optimizing technologies that are already here today. An adequate budget for U.S. EPA action that supports development of cleaner standards for cars and trucks will be critical to meeting air quality standards. Without this commitment, more costly controls may be required for other sources, which can in turn limit progress and increase health costs.

The Clean Air Act also provides effective mechanisms to address the impacts of natural sources such as wildfires, as well as background ozone and international emissions. These mechanisms include the Exceptional Events Rule and the international transport provisions of the Act. CARB has a successful track record of working with U.S. EPA to apply the Exceptional Events rule to ensure that impacts from sources that are beyond reasonable regulatory control do not affect a region's attainment status. Similarly, the Act's provisions related to international transport exempt affected areas from showing they have attained the standard and has been successfully employed in a number of regions in the Western U.S. Lastly, the available science strongly suggests that high ozone days in California's urban areas are primarily due to local and regional emissions. There is also emerging evidence that background ozone reaching the west coast of the United States is now declining. Thus, with the exception of direct cross-border impacts of pollution from Mexicali, Mexico, our pollution control efforts puts us on track at attain current air quality standards.

Finally, it is incorrect that local jurisdictions are subject to penalties for failing to attain air quality standards. Under the Clean Air Act, when a region fails to meet its attainment deadline, the region must prepare a new attainment plan with a new attainment deadline. When an area classified as extreme nonattainment for the ozone standard misses its attainment deadline, there is a requirement for additional fees on industrial sources to encourage further reductions. In California, both the San Joaquin Valley and the South Coast are subject to these fees. However, in both of these areas, working closely with U.S. EPA, California has used the flexibility inherent in the Clean Air Act to substitute vehicle registration fees already in place for the fees on industrial sources. These fees are immediately used by the local jurisdiction to incentivize the purchase of cleaner trucks.

b. ***Are there circumstances in your view in which relief from penalties may be provided either to local or to state level jurisdictions?***

The Clean Air Act does include provisions to apply sanctions should a region fall behind in meeting the Act's requirements. We believe it's important to have this type of mechanism to keep states moving forward. The key to meeting Act requirements and avoiding sanctions is to move forward proactively. This provides states the time to

develop feasible and cost-effective strategies for achieving clean air and coordinate with U.S. EPA to ensure they meet the Clean Air Act's requirements.

The most cost-effective strategy requires comprehensive actions by local air districts, CARB, and U.S. EPA. At the local level, this includes actions to address residential, commercial, and industrial sources of emissions. For CARB, it means a commitment to use all of the authority provided to us under the Act to address mobile sources. For U.S. EPA, it means action to set cleaner federal emissions standards for cars and trucks that have already been proven feasible and cost-effective. When states work to address the requirements of the Clean Air Act proactively, as described in my response to question 4a, the potential for penalties is minimized.

The Honorable Frank Pallone, Jr.

In your written statement you note that "California uses the planning required by the Act to minimize costs."

1. ***Please elaborate on how this has been achieved by the state.***

California uses the Clean Air Act's requirements for early and comprehensive planning to look ahead and put regulations in place early to benefit from the pace of long-term technology turn-over, maximizing the cost-effectiveness of our regulations. The effort starts with technology assessments and pilot and demonstration projects for advanced technologies to provide the foundation for determining cost-effective regulatory approaches. These technology assessments also provide a mechanism to look ahead and plan for the gradual deployment of cleaner technologies across the timeframe allowed for attainment, which spurs incremental advances and in turn drives down costs. California also uses the advanced technology provisions of the Act to drive innovation, as well as employ incentive programs to bring cost-effective technologies to market. Finally, provisions in the Clean Air Act provide states with the flexibility to focus on the approaches that are tailored to the unique nature of each region, and target the most cost-effective pollutants and solutions to improve air quality.

2. ***Please explain how H.R. 806 would increase costs in the long-term.***

The delays in H.R. 806 will increase cost in two ways. First, delaying the planning process for implementing the ozone standard will result in lost opportunities to achieve near-term reductions from both new industrial sources and new vehicles and equipment entering the fleet. This equipment will stay in use for many years and continue to pollute more than if it had been cleaned up sooner. This also shifts more of the burden to existing sources, and raises the costs of pollution controls. Ultimately, this will lead to states having to pay what is effectively a balloon payment to reduce emissions that could have been reduced more cost-effectively if addressed proactively.

Second, we have found that we can cut pollution while providing major economic benefits by keeping people healthier, working, and out of costly medical care. H.R. 806 would mean more people would breathe dirty air longer, leading to increased health costs, as deadlines are extended and requirements for incremental progress are eroded.

Hospital room visits, missed work days, premature deaths, and long-term health damage to children all threaten our economic prosperity. By 2020, the Clean Air Act will have prevented 230,000 deaths, millions of cases of asthma, and hundreds of thousands of heart attacks. The economic costs of healthcare associated with exposure to polluted air are substantial, and far exceed the costs of using cleaner technologies. The Clean Air Act ensures we operate on excellent science, and then gives us flexibility to help avoid the major costs pollution imposes on people.

U.S. EPA estimates that achieving the newest federal ozone standard in California would save an estimated 400 million to 1.3 billion dollars per year when accounting for both the costs of reducing emissions and the avoided costs of healthcare, lost work days and low productivity, and other impacts of pollution. U.S. EPA's estimates for attaining the 2012 PM2.5 standard are also substantial, showing a net benefit of at least 3.3 billion dollars, with over 90 percent of the monetized benefits coming from reduction in premature deaths. Delaying implementation of standards would extend the substantial costs associated with exposure to unhealthy air, not only in California, but throughout the country.

In your written statement you mention that the California Air Resources Board (CARB) will meet to consider plans to provide the pollution reductions necessary to meet the 2008 and 2015 ozone standards. Since the March 22, 2017, hearing, the board has met and considered these plans.

3. ***In the plans considered by CARB, please elaborate on the technologies and strategies that will help air districts achieve these goals?***

CARB's current mobile source control programs have achieved tremendous success in reducing smog-forming emissions of nitrogen oxides (NOx). Ongoing implementation of these programs will result in substantial further reductions through 2031, providing a significant down payment for meeting air quality standards. The mobile source strategy approved by the Board last month identifies the regulatory and programmatic approaches necessary to deploy the next generation of cleaner technologies and fuels, and ensure sufficient penetration to meet air quality standards by deadlines established in the Clean Air Act.

For passenger vehicles, the strategy includes actions to increase the penetration of plug-in hybrid electric vehicles (PHEVs) and ZEVs, including battery-electric and hydrogen fuel cell electric vehicles. For heavy-duty vehicles, the strategy calls for combustion engine technology that is effectively 90 percent cleaner than today's standards, and also includes targeted introduction of zero emission technologies in heavy-duty applications that are suited to early adoption of ZEV technologies.

Similar actions are included for off-road sources, with a focus on deployment of ZEV technologies in smaller equipment types such as forklifts and airport ground support equipment. A low-emission diesel standard builds upon CARB's existing fuels framework by requiring that low-emission diesel fuels are used to achieve greater criteria pollutant reductions. Finally, for sources that are primarily under federal jurisdiction, such as interstate trucks, locomotives, and ocean-going vessels, the strategy includes petitions calling for U.S. EPA action to provide the needed emission reductions from these sources by setting more stringent engine standards.

Meeting air quality standards in the two areas of the State with the greatest air quality challenges – the South Coast and the San Joaquin Valley – will also need to include

comprehensive action at local air district level. The South Coast air district also recently adopted a plan that includes actions to further reduce emissions from the largest industrial sources in the region, such as refineries (through the use of selective catalytic reduction), as well as transitioning to cleaner energy sources, such as electrification, fuel cells and solar for commercial and residential sources, and increasing energy efficiency. Similar actions will be needed in the San Joaquin Valley as part of plans that are in development to meet fine particulate matter (PM2.5) standards. In addition to industrial sources, District efforts to address residential wood burning, commercial cooking, and fugitive dust will also be critical to attainment. These efforts not only are important to meet air quality standards, but also to reduce people's exposure to air toxics.

A number of the other witnesses expressed frustration and confusion associated with having to prepare and manage multiple implementation plans for various pollutants, at the same time.

4. ***In your experience, how can integrated planning alleviate some of this frustration and confusion?***

Although a region may be required to meet multiple air quality standards over a period of years, each prior plan serves as a foundation to support the planning process for standards that are progressively health protective. A common core of regulations carries through each plan, with new regulations building on these efforts within the additional timeframe allowed under the Act for meeting the more stringent standard. Since the 1990 Act amendments, the South Coast Air Quality Management District has been developing integrated plans to address all standards simultaneously. This integrated air quality planning process highlights that it is not only possible to develop a plan that addresses multiple standards, but it is also an efficient and effective way to ensure continuing progress in protecting public health.

In your written statement you made a few comments about the air quality challenges of the South Coast area. That the nonattainment issues are "more challenging, but progress there is also remarkable."

5. ***Could you please describe the unique challenges of this area, and some of the techniques and strategies used to make such progress?***

The South Coast Air Basin has historically had one of the greatest air quality challenges in the nation. The region is home to nearly 17 million people, over 40 percent of the State's population. The region is also home to over 10 and a half million passenger and commercial vehicles that travel over 130 billion miles per year. Weather conditions and topography, along with emissions from vehicles, refineries, power plants, manufacturing, sea ports, airports, and railyards combine to produce elevated concentrations of both ozone and PM2.5.

However, due to ongoing control efforts, air quality in the South Coast has improved

dramatically. Twenty-five years ago the entire South Coast region exceeded the 75 part per billion (ppb) 8-hour ozone standard. Today, peak concentrations have decreased 45 percent, and 40 percent of residents live in communities that now meet the standard. The South Coast is also making significant progress in reducing PM2.5, which has decreased by over 50 percent in the Basin since 2000.

The tools available in the Clean Air Act have been key drivers in this success. Decades of research programs and technical work conducted by CARB, the air district, U.S. EPA, academic institutions, other research organizations, and the private sector have provided the scientific foundation for determining effective control approaches.
The Clean Air Act's waiver provisions that allow California to enact more stringent emission standards for passenger vehicles, heavy-duty trucks, and certain off-road vehicles and engines have also been critical to the region's ongoing progress. Over the years, California has received waivers and authorizations for over 100 regulations. With its Clean Air Act waiver authority, California has set emission standards for on-road motor vehicles that have reduced NOx emissions by almost 70 percent in the last 15 years. Emissions from off-road mobile sources and equipment have decreased over 40 percent based on similar advances in cleaner technologies. Advances in pollution control technologies have also lead to substantial NOx reductions from stationary and area sources, which have decreased by approximately 60 percent over the same time period.

The Honorable Debbie Dingell

I have several concerns with this bill, but I want to focus on the problems in section 3(d). This section undermines decades of Clean Air Act practice and weakens air quality protections.

The Clean Air Act requires a large new or expanding industrial facility to get an air pollution permit before starting construction. The facility must commit to install pollution controls, and it must demonstrate that its emissions won't produce unhealthy levels of air pollution in the area. If the facility's pollution would cause the area to violate an air pollution standard, then the facility must do more to reduce or offset its emissions.

But section 3(d) of the bill before us creates a loophole in the law. If EPA fails to meet new procedural requirements, the bill would allow a facility to get a permit by measuring its emissions against an outdated, less protective air quality standard. Previous witnesses have referred to this as "amnesty."

1. **Mr. Karperos, what is the practical effect of allowing a new facility to be permitted under an outdated standard?**

2. **What are the public health implications of exempting new or modified facilities from more protective air quality standards?**

Opportunities for further emissions reductions and related health protections that could have been realized under a newer, more stringent standard will be lost, should the facility be permitted under an outdated standard. These missed opportunities will only prolong potentially significant localized health impacts, such as those experienced in disadvantaged communities that are already highly affected by air pollution. It should be a priority for regulatory entities to ensure these impacted communities are protected from the dangerous effects of air pollution as quickly as possible.

Further, this bill does not only harm public health – it hurts industry. The provisions of section 3(d) shifts the burden of air quality improvements from new to existing industrial facilities that would need to retrofit pollution controls, which is generally more expensive than if a new facility was designed with these pollution controls from the start. As a result, it raises the costs of pollution controls and raises overall costs for existing businesses to continue operating.

3. **Mr. Karperos, how will this affect existing industrial sources in your state, particularly if a new facility pushes an area into violation of the air quality standards?**

This is contrary to a key principle of the Clean Air Act, which has historically demonstrated that it is an effective means to protect public health and the environment. The CAA requires new sources to install the newest control technologies because it is

during the design phase that incorporation of these technologies is the most effective from both control efficacy and cost perspectives. Further, new facilities will likely exist for longer than existing ones, and ensuring these new facilities operate as cleanly as they can from the first day of operation will result in more emissions reductions over the lifetime of the facility. Finally, as mentioned previously, if new sources are not subject to the newest standards, the burden for additional emissions reductions will be shifted to existing sources, where installation of pollution controls is more costly and potentially less effective.

4. **Finally, Mr. Karperos, has your state ever been unable to issue preconstruction permits because EPA had not issued guidance for a new air quality standard? Is this a situation that states have the ability to handle?**

California, like many states that face significant air quality challenges, has many decades of experience regulating air pollution. The air districts' regulation of stationary source emissions, in partnership with ARB's programs to reduce mobile source emissions, has resulted in significant improvements in air quality for the state. These successes have not only gotten us to where we are today, but will continue to guide and inform our work to improve air quality into the future. That said, we are aware that some states may have the necessary experience, but lack similar resources as are available in California. ARB believes that it is for these situations that U.S. EPA and its 10 regional offices should continue to be fully funded in order to provide the assistance necessary to implement the most health protective standards as expeditiously as possible.