July 12, 2013

Michael Tollstrup
California Air Resources Board
1001 "I" Street
Sacramento, CA 95814

Submitted via CARB comments webpage:
http://www.arb.ca.gov/cc/scopingplan/2013comments.htm

RE: Comments on the California Air Resources Board (CARB)
2013 Update to AB 32 Scoping Plan - Kickoff Workshop Presentation 6/13/13

Dear Mr. Tollstrup:

Sierra Club California appreciates the opportunity to offer these comments on the 2013 Update to the AB 32 Scoping Plan.

Climate science today underscores the need for tangible and rapid action to reduce greenhouse gas emissions to avoid the worst climate disruption scenarios. Specifically, climate change is occurring faster and producing more severe impacts than forecast when The Global Warming Solutions Act (AB 32) was signed into law in 2006.

This year, the earth's atmosphere reached 400 parts per million (PPM) of CO2. The CO2 content in the atmosphere is not only increasing but it is doing so at a faster rate per year. This dictates a heightened sense of urgency for the state to accelerate its rate of reducing greenhouse gas (GHG) emissions both in the current period through 2020 and thereafter.

When we consider the costs that the effects of climate change are causing today and forecast to cause in the future to our property, economy, and health, the necessary increased mitigation measures will be cost effective compared to the alternative of not doing as much as possible as soon as possible. (See *California Climate Risk and Response* - November 2008 Next 10).

The importance to the nation and the world of California's leadership in reducing greenhouse gas emissions cannot be overstated. President Obama's recently announced Climate Action Plan will be developing many new programs at the federal level. As has happened in the past, the federal government will look to California for its expertise and experience. And recently, Governor Brown's efforts to establish a partnership with China (the world's largest emitter of CO2) to more aggressively address climate change and pollution look promising. The more rapidly that California develops, implements

and shows success for more effective GHG reduction strategies, programs, incentives, plans and technologies, the more rapidly our nation and the world has the opportunity to implement these.

Given the urgent need for aggressive action, we recommend the following elements be considered in the update to the scoping plan. We note that these recommendations are not exhaustive, but highlight some of the elements we believe deserve significant attention. Also, when we refer to CARB taking an action, we mean CARB leading the AB 32 process in coordinating with the other involved state agencies and entities.

REDUCTION TARGETS AND GOALS

I. CARB should establish a new set of targets by sector for GHG reductions in 2030 that are more ambitious than a linear extrapolation from the 2020 targets and the 80% reduction goal by 2050.

The reduction performance we have seen in the electricity sector provides a strong example and rationale for setting new, higher targets by sector. In that sector, the GHG reduction targets that would result from a 60% Renewable Portfolio Standard (RPS) by 2030 are pragmatically achievable and should be the minimal goal set for the electricity sector. In 2008, California was at a 13% renewable energy and as of the end of 2012, it was at 20%. The renewable portion of the electricity portfolio covered by renewable energy grew by 7% in only 4 years. This is equivalent to growth of 1.75% a year or 17.5% in 10 years.

The state will hit its 33% RPS goal by 2020, which would be growth from 2008 to 2020 of 20% in 12 years. The most likely scenario is that the state will achieve well over 33% by 2020, possibly as much as 40%.

The state's GHG reduction momentum is greater today than it was while the above progress was made from 2008 to 2012. This momentum is fueled by many positive factors including:

a. New supportive programs such as the Renewable Auction Mechanism (RAM), Expanded Feed-in Tariffs (FITs), expanded Net Electricity Metering cap, etc.
b. New supportive policies such as improved interconnection processes, simpler standard contracts for many programs, etc.
c. Advances in the development of the smart grid as required under SB 17.
d. Lower costs of renewables, including dramatic drops in prices of solar and modest drop in wind prices. The California Energy Commission (CEC) and other research entities are forecasting continued further reductions in the cost of solar and wind. Possible breakthrough technological advances especially in solar over the next 5 to10 years could produce further dramatic cost reductions.
e. Technical advances, including new concentrating solar projects utilizing solar thermal storage that now can have a 60% capacity factor making

them much easier to integrate, advances in storage and battery technology, etc.

f. A large group of experienced project developers and a surplus of supply of renewable equipment to meet growing demand.
g. Supportive policies through many government entities including the state's RPS program, Community Choice Aggregation (CCA), city and county specific programs; commitments by private corporations, military bases in California, and California schools and universities to improve energy efficiency and implementation of renewables; the state governments commitment for its owned facilities and properties.
h. Improved availability of financing and the implementation of improved financing structures such as the leased solar model, on-bill repayment, commercial Property Assessed Clean Energy (PACE), etc.

In sum, increasing the rate of implementation of renewables in the future is a very reasonable assumption, even an expectation. An RPS goal of 60% by 2030 compared to 33% in 2020 would be 27% growth. If the state reaches an RPS of 40% in 2020, increasing it to 60% in 2030 would be a 20% increase—a growth rate already achieved. Achieving a 60% RPS by 2030 should be very cost effective and achievable.

Similarly, new GHG-reduction targets that are aggressive but achievable, and take into account the rapid advances in technology and the extraordinary need for action, should be set for each of the other sectors.

II. CARB should set an ultimate goal that is more effective sooner at reducing GHG than 80% reduction by 2050.

The urgency of the need to slow climate disruption, combined with the demonstrated ability for Californians to achieve assertive reduction goals, call for a 2040 goal of at least 95% GHG reduction, and for CARB to make such a recommendation to the Governor and the legislature. As stated in AB 32:

> "Public Utilities Code Sec. 38551. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020.
> (c) The state board shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020."

A recent document signed by more than 510 scientists from throughout the world (entitled *Scientific Consensus on Maintaining Humanity's Life Support Systems in the 21St Century – Information for Policy Makers*, published May 21, 2013, available on the Governors Home Web Page via a link at:

http://mahb.stanford.edu/wp-content/uploads/2013/05/Consensus-Statement.pdf) states:

> "Earth is rapidly approaching a tipping point. Human impacts are causing alarming levels of harm to our planet. As scientists who study the interaction of people with the rest of the biosphere using a wide range of approaches, we agree that the evidence that humans are damaging their ecological life-support systems is overwhelming.
>
> "We further agree that, based on the best scientific evidence available, human quality of life will suffer substantial degradation by the year 2050 if we continue on our current path. ….
>
> "By the time today's children reach middle age, it is extremely likely that Earth's life-support systems, critical for human prosperity and existence, will be irretrievably damaged by the magnitude, global extent, and combination of these human-caused environmental stressors**, unless we take concrete, immediate actions** [emphasis added] to ensure a sustainable, high-quality future."

We are out of time to take our time. We must accelerate all the good work that has been started. CARB has a responsibility to develop and send new goal recommendations and proposed programs to achieve them to the Governor and legislature for action.

ENERGY ACTIONS

I. CARB needs to focus on quickly reducing natural gas use both in the electricity generation sector and in the residential and industrial heating areas.

In the staff presentation on energy at the June workshop on the scoping plan update, an appropriate reference was made to using solar thermal water heating as a replacement for natural gas. In addition to this technology, CARB should support the greatly increased use of geothermal heat pumps and air source heat pumps to displace natural gas for space and water heating purposes.

In the electricity sector, it is critical that no new natural gas-fired generation plants are approved or built. Today, cost effective renewable alternatives exist that should be used instead of CO2 producing natural gas. To build new gas-fired generation today will condemn utility customers to future stranded assets and increased costs when these facilities become even more expensive to operate with increased carbon fee costs, the risk of increased natural gas costs and the cost of a shortened useful life due to likely early retirement.

II. CARB should set up a special program supported by an advisory committee on how to more rapidly reduce high Global Warming Potential GHGs through appropriate regulatory processes.

Other than Carbon Dioxide, the most impactful GHGs include methane, nitrous oxides, tropospheric ozone, black soot, chloro-fluorocarbons (CFCs), and hydro-fluorocarbons.According to the IPCC 4th Assessment, these gases create nearly 80 percent as much of the post-industrial revolution change in atmospheric forcing as compared to CO2. A much more integrated and comprehensive plan is needed to deal with reducing these gases. CARB has considerable experience and success in measuring, monitoring, regulating, reducing and enforcing the reduction of polluting gases. Its efforts and progress in reducing black soot in diesel engines is commendable. But it would now be helpful to go the next step and to focus on ways to reduce black soot from other sources.

According to the President's Climate Action Plan:

> "Hydrofluorocarbons (HFCs), which are primarily used for refrigeration and air conditioning, are potent greenhouse gases. In the United States, emissions of HFCs are expected to nearly triple by 2030, and double from current levels of 1.5 percent of greenhouse gas emissions to 3 percent by 2020."

Further focus on hydrofluorocarbons and methane are critical. California, the United States and the world continue to work on reducing CO2, but these efforts may take decades to make major progress. In the meantime, CO2 production and levels in the atmosphere continue to grow. If we can make more progress faster on the high GWP GHGs, potentially we can reduce climate disruption impacts in the short term while longer term CO2 reduction strategies gear up.

III. The Department of Water Resources, working with the State Water Board, should create and implement a comprehensive plan to reduce energy and water use through improved efficiency measures.

The transport of water and wastewater consumes 20% of the state's electricity and 30% of its natural gas. Reducing energy use in this sector will substantially cut greenhouse gas emissions.

To adequately inform the creation of this plan, a verifiable database should be created to capture where energy for water is consumed and to track progress in reducing that energy consumption through water conservation and other water use efficiency measures. The plan should include assertive targets and strategies and an implementation timeline. Strategies could include such things as investment in urban water infrastructure repair, increased metering and pricing across all forms of water use that encourages conservation while also ensuring access to clean drinking water.

IV. CARB should help accelerate the date by which all new residences and all new commercial buildings built are zero net energy (ZNE), and adopt targets for reducing energy use of existing buildings.

A recent study contracted by the CEC indicated that rooftop PV solar using today's technology is cost effective in many sectors of the residential community sooner than 2020 as the renewable portion of a ZNE program. Because renewable energy costs and energy efficiency methods are proving to be more cost effective sooner than originally projected, we should not wait until 2020 for residential and 2030 for commercial buildings for new title 24 building standards to require ZNE. We should accelerate the dates ZNE is required in Title 24 standards. Also, new financing, such as more funds for commercial PACE and residential PACE or on-bill repayment systems, should be put in place to accelerate building retro-fits for ZNE and to reduce the energy footprint of this legacy stock as soon as possible.

TRANSPORTATION ACTIONS

I. Remove barriers to appropriate pricing mechanisms for parking and road use.

There is substantial and undisputed research and real-world examples demonstrating that pricing is an effective mechanism for reducing driving (and hence GHG emissions) without reducing mobility when coupled with effective and efficient transportation alternatives (e.g. buses, light rail, subways, and bikeways). Yet state and local laws have created hurdles to employing appropriate pricing. The scoping plan update should call for the appropriate agency to develop a white paper outlining current legal barriers to effective use of parking and road pricing and recommended changes.

II. Increase public and private investment in mass transit.

An early draft of the 2008 scoping plan acknowledged that investment in mass transit would be essential to offer alternatives to business-as-usual transportation forms in California. Somehow, that point was lost in the final draft. It is time for CARB to restore this logical notion into the scoping plan through this 2013 update.

Additionally, the update should recommend a process or strategies to ensure that mass transit modes are varied enough to fit the needs of users, including more options for van sharing or smaller buses, for instance, and more and better use of technology for on-demand service or better communications with transit users.

III. Build on advanced vehicle regulatory successes.

California's extraordinary success over the last several decades employing technology-forcing regulation to reduce vehicle emissions has simultaneously improved vehicle quality and fueling options for consumers. The state should

continue this approach, but intensify the standards to achieve a faster trajectory toward full adoption of zero and near-zero emission vehicles.

Additionally, the state's agencies, including CARB, should focus greater attention on reducing black carbon emissions from the freight sector. This can be done in a variety of ways, including through policies and regulations that encourage mode-shifting to match freight destination with the most appropriate mode, road pricing policies that motivate adoption of cleaner fuel vehicles, and other strategies that encourage faster adoption of advanced engine technologies and cleaner fueling options. Special attention should be given to electrification and adoption of electrified vehicles working on the corridors between the state's seaports, rail yards and warehouses.

IV. Encourage Non-Motorized Transportation and Alternatives to Daily Automobile Commuting.

Studies have shown that many daily trips are short and would be walkable or effectively conducted by bicycles and other non-motorized transportation if the routes were safe. The state should require local entities to prepare safe bicycle and walking route plans for daily commuting.

Additionally other methods for encouraging alternatives to conventional daily commuting, including ride-sharing and work-at-home, should be given a higher level of importance in the state's plans for reducing GHG emissions from the transportation sector.

EQUITY

I. Ensure equity in strategies and implementation.

California's AB 32 is built upon the notion that all Californians must play a part in reducing greenhouse gas emissions and all Californians must benefit from the policies that reduce greenhouse gas emissions. Those people and companies that pollute more or produce and profit from the products that pollute more bear a greater responsibility for reducing their emissions. Likewise, no community or group should bear a greater level of pollution, including localized pollution, because of the regulatory regime. This must underpin the scoping plan update.

Funding distributed to support GHG emissions reduction should be consistent with Senate Bill 535 (of the 2012 session). That distribution requirement should be evident in the proposals in the scoping plan update.

CONCLUSION

Since AB 32 became law in 2006, scientists from around the world have documented more rapid and severe climate change than was forecast back then. The state and the nation are being forced to invest in expensive adaptation and mitigation steps to reduce

the economic and other damage caused to society by climate disruption. All this warrants mobilizing society's resources by magnitudes greater than in the past to slow and reduce climate change's impacts.

We commend CARB and all other involved state agencies for devoted work to address this global crisis. We urge that the scoping plan update reflect the need to significantly ramp up the level of effort we all commit to reducing GHGS to address the significant negative effects climate change is already imposing on our society.

Sincerely,

Kathryn Phillips
Director

Ray Pingle
Volunteer Lead on Scoping Plan Update