

**State of California**  
**2030 TARGET SCOPING PLAN UPDATE**  
**CONCEPT PAPER**  
**June 17, 2016**

*Executive Order B-30-15 established an updated California GHG reduction target of 40 percent below 1990 levels by 2030. California Air Resources Board (ARB) staff is providing this 2030 Draft Scoping Plan Update (Draft Scoping Plan) concept paper to describe potential policy concepts to achieve the 2030 target. The content of this paper has been informed by several public workshops and meetings held to date, beginning with the Governor's Climate Change Strategy Pillar Workshops held in summer 2015. Since then, ARB staff, in collaboration with other State agencies, has held numerous public workshops to develop the Draft Scoping Plan, including several Environmental Justice Advisory Committee meetings, a public meeting to discuss the greenhouse gas (GHG) modeling and economic analysis that will be included in the Draft Scoping Plan, and other sector-specific public workshops. These multi-agency meetings provided State agencies the opportunity to share their near- and long-term visions for climate policy and actively solicited the public's comments, concerns and questions. A full list of the Draft Scoping Plan workshops held to date can be found on ARB's Scoping Plan website:*

*<http://www.arb.ca.gov/cc/scopingplan/meetings/meetings.htm>.*

*This paper provides additional opportunities for public and stakeholder engagement and input prior to release of the Draft Scoping Plan later this year. The intent of the paper is to inform an ongoing stakeholder process for how to most effectively achieve a 40 percent reduction in GHG emissions by 2030 as compared to 1990 statewide GHG emissions. The process going forward will include additional workshops that will be held in 2016 and early-2017. All written comments submitted on this paper will be posted for public review at the website below, and will be reviewed by State agencies as we continue to coordinate on proposing final concepts for evaluation and consideration through the ongoing public process. Comments on this paper will be considered as the Draft Scoping Plan is developed and released for public review in summer 2016. Comments on this paper can be submitted through July 8, 2016, here:*

*<http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>*

**Concept 1: Complementary Policies with a Cap-and-Trade Program**

Concept 1 would include enhancements to existing programs and implementation of SB 350. This concept builds on the successful programs that have put California on the path for reaching the 2020 GHG Statewide limit mandated by AB 32. This concept also continues California's strategy to rely on a package of complementary measures to achieve its GHG reduction goals as well several co-benefits including reduction of other pollutants that adversely impact public health particularly in disadvantaged communities where levels are frequently elevated. The major policies in this scenario would include the following 2030 goals:

- SB 350 – by 2030
  - 50 percent RPS
  - Doubling of energy efficiency of existing buildings
- Increase in Low Carbon Fuel Standard – by 2030
  - Carbon Intensity reduction: > 10%
- Mobile Source Strategy
  - 1.5 million zero emission and plug-in hybrid light duty electric vehicles by 2025
  - Medium and Heavy-Duty GHG Phase 2
  - Advanced Clean Transit: Up to 20 percent of new urban buses purchased beginning in 2018 will be zero-emission buses, ramping up to 100 percent of new sales in 2030.
  - Last Mile Delivery: Phase-in of zero-emission trucks for class 3-7 last mile delivery trucks starting in 2020. Zero-emission vehicles comprise 2.5 percent of new Class 3-7 trucks sales in local fleets starting 2020, increasing to 10 percent in 2025 and remaining flat through 2030.
- Implementation of currently proposed Short Lived Climate Pollutant Strategy – by 2030
  - 40% reduction in methane and hydrofluorocarbon emissions
  - 50% reduction in black carbon emissions
- Increased stringency of SB 375 Sustainable Communities Strategy – 2035 targets
- Draft California Sustainable Freight Action Plan
  - Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.

- Cap-and-Trade Program with a 4 percent annual cap decline
- Natural and Working Lands – by 2030
  - Each year, 500,000 acres of nonfederal forest lands included in restoration plans oriented towards forest health and carbon storage
  - More infill and revitalization of urban core areas
  - Land preservation policies
  - Increase habitat acreage protected or restored

Concept 1 largely builds on California’s success with existing programs to include enhancements to those programs combined with the new SB 350 requirements. The Low Carbon Fuel Standard would build on the current CI reduction of 10 percent in 2020 requiring further reductions in the CI through 2030. The comprehensive strategies for Sustainable Freight, Mobile Source, and California Transportation Plan 2040 that are recently developed or in the process of being finalized would be implemented to maximize benefits for criteria and air toxics and GHG reductions. This scenario would include increased stringency of SB 375 Sustainable Communities Strategy 2035 targets. To ensure that the State meets the 40% GHG reduction target, Concept 1 would include a Cap-and-Trade Program with declining caps to provide compliance flexibility for the regulated entities, access and incentive to identify the lowest cost GHG emission reduction opportunities across the economy.

This would also provide continued support for collaborative action through linkages with other programs, such as Québec’s Cap-and-Trade System and a recently established Ontario Cap-and-Trade Program. We could also use the extended Cap-and-Trade Program for demonstrating compliance with the Clean Power Plan (CPP) without the need to make other programs, such as the RPS, subject to Federal jurisdiction. The Cap-and-Trade Program could also potentially be linked with other states that chose to pursue a trading program to comply with CPP. Importantly, as other sectors are identified for GHG emissions regulation at the federal level, the Cap-and-Trade Program can readily accommodate that expansion.

As Concept 1 includes the Cap-and-Trade Program with quarterly auctions of allowances, funds would also continue to be deposited into the GGRF. Currently, the Legislature and Governor appropriate proceeds from the sale of State-owned allowances for projects that support the goals of AB 32. Strategic investment of these proceeds furthers the goals of AB 32 by reducing GHG emissions, providing net GHG sequestration, providing co-benefits, and supporting the long-term, transformative efforts needed to improve public and

environmental health and develop a clean energy economy. These investments support programs and projects that also deliver major economic, environmental, and public health benefits for Californians, including meaningful benefits to the most disadvantaged communities. Investments are providing a multitude of benefits to disadvantaged communities including increased affordable housing opportunities, reduced transit and transportation costs, access to cleaner vehicles, improved mobility options and air quality, job creation, energy and water savings, and greener and more vibrant communities.

***Concept 2: Ambitious Complementary Policies without Cap-and-Trade; a Focus on Industrial Sources***

Concept 2 would include some additional enhancement of existing policies, implementation of SB 350, and industrial facility caps to specifically address the industrial sector. The major policies in this scenario would include the following goals:

- SB 350 – by 2030
  - 50 percent RPS
  - Doubling of energy efficiency of existing buildings
- Increase in Low Carbon Fuel Standard – by 2030
  - Carbon Intensity reduction: > 10%
- Mobile Source Strategy
  - 1.5 million zero emission and plug-in hybrid light duty electric vehicles by 2025.
  - Medium and Heavy-Duty GHG Phase 2
  - Advanced Clean Transit: Up to 20 percent of new urban buses purchased beginning in 2018 will be zero-emission buses, ramping up to 100 percent of new sales in 2030.
  - Last Mile Delivery: Phase-in of zero-emission trucks for class 3-7 last mile delivery trucks starting in 2020. Zero-emission vehicles comprise 2.5 percent of new Class 3-7 trucks sales in local fleets starting 2020, increasing to 10 percent in 2025 and remaining flat through 2030.
- Enhanced implementation of currently proposed Short Lived Climate Pollutant Strategy – by 2030
  - > 40% reduction in methane and hydrofluorocarbon emissions
  - > 50 % reduction in black carbon emissions
- More ambitious targets of SB 375 Sustainable Communities Strategy – 2035 targets

- Draft California Sustainable Freight Action Plan
  - Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
- Entity level GHG declining caps for industrial sources
- Natural and Working Lands – by 2030
  - Each year to 2030, 500,000 acres of nonfederal forest lands included in restoration plans oriented towards forest health and carbon storage
  - More infill and revitalization of urban core areas
  - Land preservation policies
  - Increase habitat acreage protected or restored

Concept 2 does not include a Cap-and-Trade Regulation post-2020 and thus would also require more ambitious targets for the Short Lived Climate Pollutant Strategy and more ambitious 2035 targets for SB 375 than in Concept 1. Because this scenario would not include a statewide limit on GHG emissions, continuous program adjustments may be necessary to ultimately achieve the 2030 target. Under Concept 2, there would be requirements on the industrial entities currently regulated by the Cap-and-Trade Program to each reduce their GHG emissions at a rate to be determined once there has been an evaluation of how many additional reductions are still needed after the other policies are implemented. The industrial facility caps would not decline at a rate greater than 4 percent each year. The industrial facility caps would be established by identifying a baseline annual GHG emissions level for each regulated entity in permits, and requiring a decrease in emissions to achieve the required GHG reductions. If the modeling demonstrates the 2030 target is still not achieved, other policies such as the Low Carbon Fuel Standard may need to be made more stringent.

Concept 2 would not include any type of compliance instruments or trading as is included in the Cap-and-Trade Program. The linked cap-and-trade program between California and Québec would no longer exist. We would also forgo future linkages with other programs. The State would also need to identify another program, such as facility caps, as the compliance demonstration mechanism for the CPP. And, as the federal GHG regulations are expanded to cover additional sectors, we would need to take a sector-by-sector approach to address compliance under a federal scheme.

***Concept 3: Ambitious Complementary Policies without Cap-and-Trade; a Focus on Transportation***

Concept 3 does not include a Cap-and-Trade Regulation post-2020 and thus would require additional focus on reducing GHG emissions from the transportation sector. The major policies in this scenario would include the following goals:

- SB 350 – by 2030
  - 50 percent RPS
  - Doubling of energy efficiency of existing buildings
- Increase in Low Carbon Fuel Standard – by 2030
  - Carbon Intensity reduction: >10%
- Mobile Source Strategy
  - 3.5-4.5 million zero emission and plug-in hybrid light duty electric vehicles by 2030
  - Medium and Heavy-Duty GHG Phase 2
  - Advanced Clean Transit: Up to 20 percent of new urban buses purchased beginning in 2018 will be zero-emission buses, ramping up to 100 percent of new sales in 2030.
  - Last Mile Delivery: Phase-in of zero-emission trucks for class 3-7 last mile delivery trucks starting in 2020. Zero-emission vehicles comprise 2.5 percent of new Class 3-7 trucks sales in local fleets starting 2020, increasing to 10 percent in 2025 and remaining flat through 2030.
- Implementation of currently proposed Short Lived Climate Pollutant Strategy – by 2030
  - 40% reduction in methane and hydrofluorocarbon emissions
  - 50% reduction in black carbon emissions
- Require industrial entities to evaluate and identify cost-effective and technically feasible improvements, develop individual rules on source types of emissions and require improvements during scheduled maintenance, or other schedule, at the industrial facility
- Ambitious stringency of SB 375 Sustainable Communities Strategy – 2035 targets
- Draft California Sustainable Freight Action Plan
  - Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
- Natural and Working Lands – by 2030

- Each year, 500,000 acres of nonfederal forest lands included in restoration plans oriented towards forest health and carbon storage
- More infill and revitalization of urban core areas
- Ambitious land preservation policies
- Increase habitat acreage protected or restored

Concept 3 would include more ambitious targets for the Low Carbon Fuel Standard and increased percentage of zero emission vehicles than in Concept 1. Because this scenario would not include a statewide limit on GHG emissions, continuous program adjustments may be necessary to ultimately achieve the 2030 target. As this strategy would focus on transportation and fuels, staff would explore additional measures to promote technology with GHG emissions reductions from heavy-duty vehicles, public transit systems, and freight. Industrial sector GHG emissions would be addressed through the traditional regulatory approach for addressing criteria pollutants at stationary sources. Land-use and planning would also include additional measures to reduce VMT by identifying more ambitious targets for SB 375 than in Concepts 1 and 2. Enhanced goals for the natural working lands sector for land preservation would support reduced new development and reduced VMT.

Concept 3 would not include any type of compliance instruments or trading as is included in the Cap-and-Trade Program. The existing linked cap-and-trade program between California and Québec would no longer exist. We would forgo future linkages of this type with other programs, such as the recently adopted Ontario Cap-and-Trade Program. The State would also need to identify another program, such as the RPS or use the facility level caps, as the compliance demonstration mechanism for the Clean Power Plan. And, as the federal GHG regulations are expanded to cover additional sectors, we would need to take a sector-by-sector approach to address compliance under a federal scheme.

#### ***Concept 4: Complementary Policies with a Carbon Tax***

Concept 4 would include the same enhancements to existing programs as in Concept 1, but in lieu of a Cap-and-Trade Program, this scenario includes a carbon tax. The major policies in Concept 4 would include the following goals:

- SB 350 – by 2030
  - 50 percent RPS
  - Doubling of energy efficiency of existing buildings
- Increase in Low Carbon Fuel Standard – by 2030

- Carbon Intensity reduction: > 10%
- Mobile Source Strategy
  - 1.5 million zero emission and plug-in hybrid light duty electric vehicles by 2025
  - Medium and Heavy-Duty GHG Phase 2
  - Advanced Clean Transit: Up to 20 percent of new urban buses purchased beginning in 2018 will be zero-emission buses, ramping up to 100 percent of new sales in 2030.
  - Last Mile Delivery: Phase-in of zero-emission trucks for class 3-7 last mile delivery trucks starting in 2020. Zero-emission vehicles comprise 2.5 percent of new Class 3-7 trucks sales in local fleets starting 2020, increasing to 10 percent in 2025 and remaining flat through 2030.
- Implementation of currently proposed Short Lived Climate Pollutant Strategy – by 2030
  - 40% reduction in methane and hydrofluorocarbon emissions
  - 50% reduction in black carbon emissions
- Increased stringency of SB 375 Sustainable Communities Strategy – 2035 targets
- Draft California Sustainable Freight Action Plan
  - Deploy over 100,000 freight vehicles and equipment capable of zero emission operation and maximize near-zero emission freight vehicles and equipment powered by renewable energy by 2030.
- Natural and Working Lands – by 2030
  - Each year, 500,000 acres of nonfederal forest lands included in restoration plans oriented towards forest health and carbon storage
  - More infill and revitalization of urban core areas
  - Land preservation policies
  - Increase habitat acreage protected or restored
- Carbon tax applied at a value predetermined by a method such as economic modeling or the use of the US EPA social cost of carbon

Concept 4 would require additional legislative authority, as it is a tax. Other GHG reductions policies can be implemented under existing authority. A potential carbon tax could be set at the same point of regulation for the entities that are currently subject to the California Cap-and-Trade Program, or farther upstream. Because this scenario would not include a statewide limit on GHG emissions, it is unknown if any given level carbon tax would ultimately achieve the 2030 target. This scenario includes a fixed cost for each metric ton of carbon dioxide equivalent, which could be priced at a value predetermined by a method such as economic modeling or the use of the US EPA social cost of carbon, which has a

range of \$11 to \$105 in 2015. At this time, it is not known how monies generated by a carbon tax would be used. Although some types of GGRF programs could continue to be funded, if a carbon tax is passed by a 2/3 vote, it would give the legislature and Governor more flexibility on ways to use the funds.

Under Concept 4, the linked cap-and-trade program between California and Québec would no longer exist. We would forgo future linkages of this type with other programs, such as the Ontario program and a federal trading system for the CPP. The State would need to identify another program, such as the RPS, as the compliance demonstration mechanism for the Clean Power Plan. And, as the federal GHG regulations are expanded to cover additional sectors, we would need to take a sector-by-sector approach to address compliance under a federal scheme.

### **Next Steps and Submittal of Public Comments**

As part of the continuing public input process, ARB staff will provide a Draft Scoping Plan update at the June 23<sup>rd</sup> Board hearing, which will include the opportunity for public comment. This summer and fall, the agencies will hold public workshops to solicit comments on modeling efforts and scenarios for achieving the 2030 target. Once the scenarios are fully developed in late summer, we will provide a Draft Scoping Plan with CEQA and economic analyses for public review and comment.

The first Board hearing on the Draft Scoping Plan is planned for November 2016 with a second Board hearing in March 2017. The Environmental Advisory Justice Committee is also planning a series of local community meetings plus additional full Committee meetings throughout the State starting in summer 2016.

This paper provides the overall framing for this Draft Scoping Plan and lays out the challenge and potential solutions to achieving our 2030 statewide GHG target. For this paper, stakeholders are encouraged to provide written comments during an informal comment period which will conclude at 5:00 p.m. Pacific time on Friday, July 8, 2016. Comments can be submitted here:

<http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm>