Post-2020 Greenhouse Gas Regulation in California: Balancing Climate Goals and the Economy

The Legislature passed a far-reaching revision of California's climate laws in 2016. The landmark greenhouse gas reduction policy that was adopted in 2006 will extend through 2030 and significantly tighten down on greenhouse gas emissions.

For the last 10 years, politicians, regulators and special interests have claimed success for the policy, all while writing and amending regulations, litigating, and spending money taxed from just a few obligated companies under current climate programs.

Carbon Regulation in California

California is noted nationally and internationally as a force in climate change policy—as much for its ambition and reach as for the efficacy of its policies. California is especially conspicuous in the absence of comprehensive regulation in other states or by the federal government.

In 2006, Governor Arnold Schwarzenegger and the Legislature passed a landmark statute setting mandatory greenhouse gas emission reductions. AB 32, by then-Assembly Speaker Fabian Núñez, directed the California Air Resources Board (ARB) to develop a regulation to reduce greenhouse gas (GHG) emissions to 1990 levels by 2020, equivalent to a 30% reduction, compared to a business as usual trend.

Unfortunately, many of the mechanisms the state's regulatory agencies have used to reduce carbon emissions have increased costs for businesses. These costs include increased costs for energy, such as electricity and transportation fuels. Regulators often rejected the most cost-effective approach or failed to give sufficient consideration to the economic impact of policy choices, both in the short-term and the long-term. Furthermore, the reductions made to date have mostly targeted the low-hanging fruit. Continued progress toward more aggressive targets will require increasingly more difficult and costly changes to business processes, lifestyles and the economy that may be harder for Californians to absorb, limiting the ability of businesses to grow despite the overall improvements in the economy.

The ARB's efforts to implement AB 32 and its myriad of regulatory measures continue to be a major issue for businesses and industries statewide that will be affected, either directly or indirectly. California's GHG emission reduction strategies comprise more than just AB 32. Numerous complementary measures are aiding in the reduction of GHG emissions. Some of these measures include:

• **Vehicle fuel efficiency** (set by federal agencies)—sets the fuel economy for cars and light-duty trucks, currently 54.5 miles per gallon by model year 2025.

• **Renewable portfolio standards** (set by statute and the Public Utilities Commission)—requires that 50% of retail sales of electricity come from eligible renewable resources by 2030.

• **Low Carbon Fuel Standard** (set by the ARB)—requires the intensity of carbon in transportation fuel be reduced; currently the standard is set at a 10% reduction by 2020.

• **Energy efficiency standards** (set by the Energy Commission)—reduces the amount of energy needed to provide goods and services.

Policy Environment

Climate change policy was a major focus of Governor Edmund G. Brown Jr. and the Legislature in 2016. Governor Brown set the agenda two years earlier by highlighting climate change issues in his second inaugural address. The Governor stated that "[W]e are well on our way to meeting our AB 32 goal of reducing carbon pollution and limiting the emissions of heat-trapping gases to 431 million tons by 2020. But now, it is time to establish our next set of objectives for 2030 and beyond."

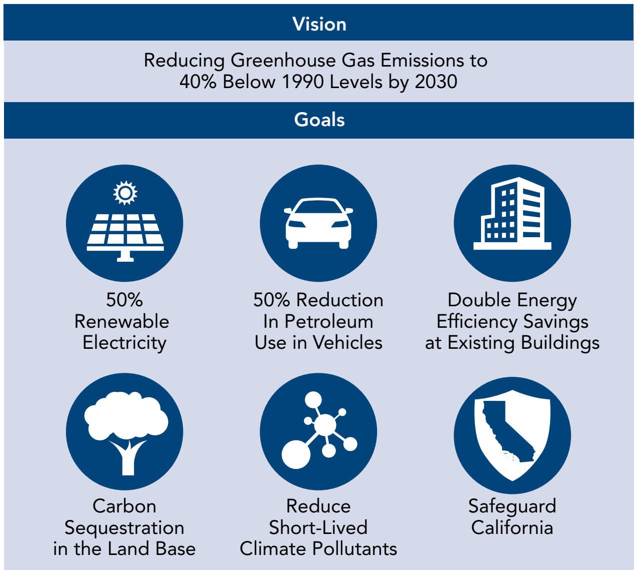
What was not factored into the policies passed by the Legislature was how exactly we will achieve these goals.

SB 32 (Pavley)

Seeking an approach more consistent with the original path blazed by AB 32, Senator Fran Pavley (D-Agoura Hills), one of AB 32's original authors, authored SB 32. Originally introduced in 2015, the measure stalled before being resurrected in mid-2016. The final version of the legislation was very simple. It set a new statewide goal of reducing GHG emissions at least 40% below 1990 levels by 2030.

California Climate Strategy

An Integrated Plan for Addressing Climate Change



Source: California Air Resources Board, *2030 Target Scoping Plan* (October 1, 2015).

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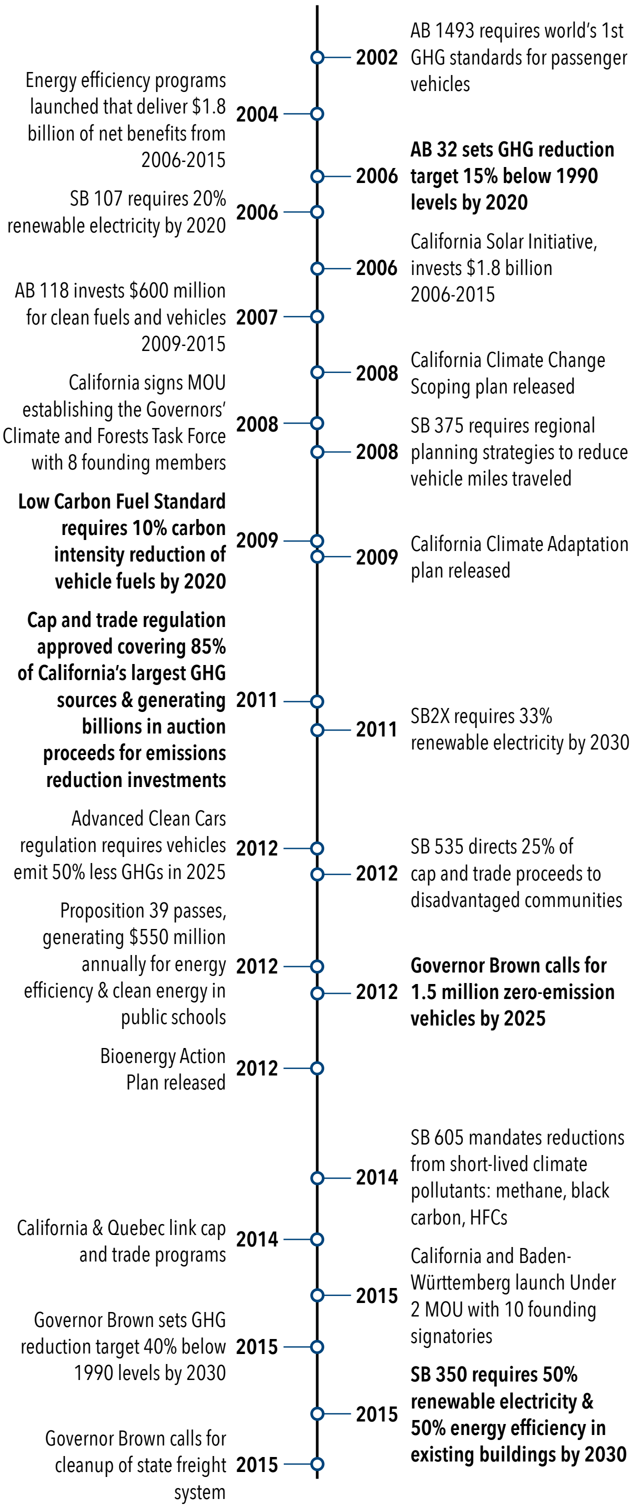
California's Pathway to a Low Carbon Future



Source: California Air Resources Board

In addition, in an effort to address the concerns of air quality in disadvantaged communities by environmental justice advocates, the bill further required that the emission reductions should be prioritized within disadvantaged communities.

AB 197 (E. Garcia)

In order to pass SB 32, the Legislature needed an oversight role of the ARB. As a result, a companion bill, AB 197 by Assemblymember Eduardo Garcia (D-Coachella) was joined to SB 32 to ensure that the changes addressing concerns from some of the ARB's critics would become law.

AB 197 laid out a path for the Legislature to exercise additional oversight over the ARB. Beyond the oversight component, however, the bill makes significant policy changes that place conditions on how the ARB must achieve the post-2020 GHG emission reductions.

A major focus of AB 197 was to ensure that emission reductions take place in disadvantaged communities and that those reductions are first being made at large stationary sources, such as refineries, followed by mobile sources (vehicles) and other stationary source facilities. This approach moves away from the current climate program by focusing on specific facilities rather than the overall statewide cap.

AB 197 further addressed concerns by advocates for communities affected by industrial pollution by requiring that the ARB make available the information on GHG, criteria air pollutants and toxic air contaminants of all facilities covered in the cap-and-trade program. (For more information, see adaptive management below.)

The joining of SB 32 and AB 197 brings a radical shift of how the state will approach climate change policies post-2020. No longer will the focus be solely on GHGs; it will include reductions of criteria pollutants, regardless of the cost-effectiveness and technological feasibility of GHG emission reductions.

SB 1383 (Lara)

Short-lived climate pollutants (SLCPs) remain in the atmosphere for a shorter period than CO2, but their impact often is more intense. These pollutants were a focus of 2016 legislation by Senator Ricardo Lara (D-Bell Gardens) requiring a 50% reduction in black carbon, 40% reduction in methane and 40% reduction in fluorinated gases from 2013 levels by 2030. While all these emissions are currently regulated directly or indirectly at the federal, state or local levels, the ARB will now implement a new, parallel regulation focusing solely on SLCPs.

Under pressure by strong industry and business opposition to the measure, the author agreed to amendments to assist the dairy and waste sectors with the methane reductions. Some of the amendments delayed the implementation of regulations, while others reduced the total reduction obligation for the sectors. For example, SB 1383 limits the reduction requirements for dairy and livestock manure management to "up to 40%," down from the original strategy floated by ARB of a 75% reduction by 2030. It is unclear at this point how and from where the additional methane emission reduction will come.

The revised SLCP Reduction Strategy was released at the end of November 2016 and is planned for adoption by the ARB in March 2017.

Impacts of New Climate Policies

California's population is anticipated to increase by 50% from 1990 through 2030. The increasing demand for energy and related GHG emissions will run headlong into the need to reduce per capita GHG emissions by 50% by 2030. California has some of the most ambitions clean energy goals in the world and California's industries already are among the most energy efficient.

The state has already made great strides in reducing GHGs, but many of those reductions were either low-hanging fruit or the result of a long and painful recession. Moving forward, the emission reductions will be much more difficult and expensive.

Scoping Plan Update

The ARB has initiated a proceeding with the goal of reducing GHG emissions 40% below 1990 levels by 2030. The 2030 Target Scoping Plan update process was introduced in late 2015 (even before passage of SB 32) and the draft will be released in early 2017.

In December 2016, the ARB released a Discussion Draft 2030 Target Scoping Plan, which outlines the thoughts of the ARB staff on how to achieve the goals of AB 32, SB 32, AB 197 and SB 1383. Within the discussion draft, the ARB is considering three scenarios to achieve the 2030 emission reductions goals, one of which will become the pathway to 2030. The three paths vary greatly, but all rely on the known current commitments of current policies, which include:

• SB 350—50% renewable energy mandate and doubling of energy savings in existing buildings.

• Increase of the Low Carbon Fuel Standard (LCFS)—reduce the carbon intensity of fuel by at least 18%.

• Mobile Source Strategy (See below)—improved air quality though cleaner technology and fuels in the transportation sector.

• Implementation of Short-Lived Climate Pollutant Strategy by 2030—reduction of high global warming potential gases.

• Increased stringency of SB 375 Sustainability Communities Strategy—reduction of GHGs through land use planning.

• California Sustainable Freight Plan (See below)—improve freight efficiency and transition to zero emissions technologies.

In order to develop a plan to achieve the previously mentioned goals, the ARB staff proposes three scenarios,

California's Pathway to a Low Carbon Future (continued)

- **2016 SB 32** sets GHG reduction target at 40% below 1990 levels by 2030
- **2016 AB 197** requires direct GHG emission reductions
- **2016 SB 1383** mandates reductions in short-lived climate pollutants (50% reduction in black carbon, 40 % reduction in methane and fluorinated gases from 2013 levels by 2030)

Source: CalChamber

Summary of Modeled Policies and Measures in each Scenario*

	Draft 2030 Target Scoping Plan Scenario	Alternative 1: No Cap-and-Trade	Alternative 2: Carbon Tax
Known Commitments	X	X	X
Increased Renewables RPS – 60%		X	
Increased LCFS – 25%		X	
Increased Mobile Source Strategy for ZEVs Additional ZEVs – 500-600K		X	
Cap-and-Trade	X		
Carbon Tax			X
Direct refinery reductions – 20%	X		X
Direct refinery reductions – 30%		X	
Direct industrial reductions – 25%		X	
Increased utilization of renewable natural gas (5% increase for residential, commercial, and industrial end uses)		X	
Heat pump electrification		X	
Accelerated retirement & replacement of furnaces		X	
Accelerated retirement & replacement of gasoline vehicles		X	

*Each scenario also includes the policies and measures that will be identified to support reduced GHG emissions and carbon sequestration enhancements for the natural and working lands sector as modeled in Chapter II. This table only includes the policies and measures identified for modeling in PATHWAYS.

Source: California Air Resources Board, Discussion Draft: 2030 Target Scoping Plan Update (December 2, 2016).

CalChamber Lawsuit Over Cap-and-Trade Auction

In 2012, the California Chamber of Commerce sued the Air Resources Board (ARB) seeking to invalidate the cap-and-trade auction. The complaint asserts that AB 32 does not authorize the ARB to impose fees other than those needed to cover ordinary administrative costs of implementing a state emissions regulatory program. What was not authorized by AB 32 is the ARB's decision to withhold for itself a percentage of the annual statewide greenhouse gas (GHG) emission allowances and to auction them off to the highest bidders, thus raising from taxpayers up to tens of billions in revenue for the state to use.

The lawsuit does not challenge any of the provisions of AB 32 nor the merits of climate change science. The only issue addressed in the litigation is the portion of the ARB's regulatory program that seeks to permit the ARB to allocate to itself GHG emission allowances and to profit by selling them to GHG emitters. The CalChamber, other members of the business community, members of the Legislature, the Legislative Analyst's Office and ARB have all highlighted the fact that the auction is not needed to achieve the goals of AB 32 or to have an effective cap-and-trade program.

The business community has repeatedly underscored the fact that the auction will raise energy costs significantly in the state and affect California's competitiveness, without providing any additional environmental benefits.

California leaders have promoted AB 32 as an example of climate regulation for the rest of the nation to emulate. But to be a successful leader in attracting other participants in this type of regulation, the state must use the most cost-effective process–not the most expensive.

In an initial ruling in 2013, the Sacramento Superior Court found for the state. The CalChamber appealed that decision to the 3rd District Court of Appeal, which scheduled oral arguments for January 2017, with a decision expected in the spring. A decision on this matter would influence the structure of any future cap-and-trade program.

summarized in the chart nearby: a Draft Scoping Plan Scenario; an Alternative Scenario 1 (no cap-and-trade); and Alternative Scenario 2 (carbon tax).

The three scenarios vary greatly in policy approach and potential cost. It will be imperative that the ARB evaluate those three scenarios and others to determine the least costly path going forward. Achieving the goal at greater expense than necessary will have an impact on California's economy and business, not just those directly obligated under these programs, but all businesses that use energy.

In addition to these goals, the ARB will integrate additional policies that reduce criteria pollutants and toxic emissions, addressing concerns from communities near industrial facilities and transportation corridors. The ARB estimates the final scoping plan will be adopted in the spring of 2017.

Environmental Justice

The Air Resources Board, with strong encouragement from the Legislature, will factor environmental justice concerns into its policies, and specifically in the scoping plan. California law defines environmental justice as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies." Under AB 32, the Environmental Justice Advisory Committee (EJAC) was established to advise the ARB in the development of the scoping plan. The EJAC is made up of 13 representatives from environmental justice groups throughout the state. The EJAC hosted workshops throughout the state and made a hundred recommendations to the ARB encompassing all aspects of climate policy regarding investments, energy, waste, housing, transportation and water.

The overriding recommendation from the EJAC is eliminating the cap-and-trade program moving forward. The EJAC favors a command-and-control approach with a carbon tax to ensure that a revenue stream remains to fund GHG reduction projects in environmental justice communities. (See Environmental Justice article for more information.)

Related Activities

The more GHG emissions are reduced, the more difficult and costly the reductions will be to achieve. For this reason, the ARB will coordinate the 2030 target scoping plan with additional policies to aid in the reduction of GHG emissions. Although the ARB has set out six goals in its vision—50% renewable energy, 50% reduction in petroleum use, doubling of energy efficiency in existing buildings, carbon sequestration in the land base, reducing SLCPs, and safeguarding California (see California Climate Strategy)—it also has stated its intent to coordinate efforts with other plans to achieve co-benefits and cross-agency coordination, including, but not limited to the following

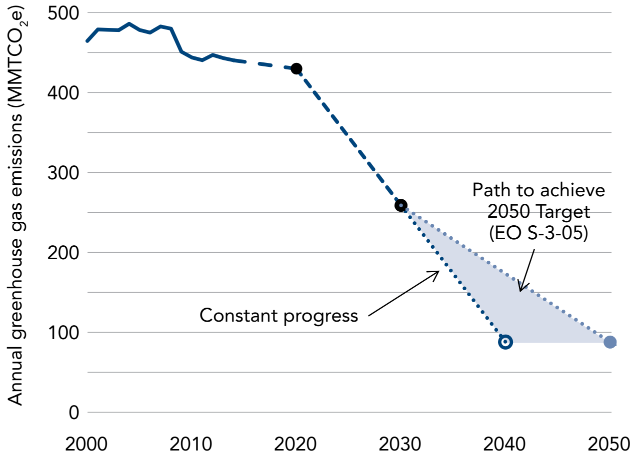
Cap-and-Trade

The ARB adopted the cap-and-trade regulation, which placed a cap on aggregate emissions from entities responsible for roughly 80% of the state's GHG emissions. Entities emitting in excess of 25,000 metric tons of GHGs are subject to the cap-and-trade scheme.

The cap-and-trade program has been operating since 2013 with the prices hovering around the floor price set by ARB. In 2014, Quebec joined California's program and in January 2015, motor vehicle fuels also came under the cap, significantly expanding the scope of the regulation. Over time, the majority of emission allowances will be auctioned by the ARB, creating an enormous revenue stream from this regulation—but adding nothing to the rule's emission reduction levels. The CalChamber has sued the ARB to reverse the part of the cap-and-trade regulation that provided for the auction of allowances (see box nearby).

In 2016, the ARB proposed extending the cap-and-trade regulation to 2030. This will be tricky since AB 32 authorized cap-and-trade only through 2020. The Legislature is likely

Plotting California's Path Forward



Source: California Air Resources Board, Discussion Draft: 2030 Target Scoping Plan Update (December 2, 2016).

to consider legislation in 2017 to extend the cap-and-trade program through at least 2030. The adoption of a cap-and-trade can be accomplished with a simple majority vote bill. However, if the Legislature and administration wish to raise revenue through the auctioning of allowances, that is a tax which can pass only with a two-thirds legislative vote.

Adaptive Management

Given the criticism of the cap-and-trade program by environmental justice advocates, in an effort to monitor the cap-and-trade program and any potential adverse impacts that may arise as a result of implementation, the ARB proposed an Adaptive Management Plan (Plan) in 2011. The Plan was initially tasked to focus on two areas: one, to determine whether the cap-and-trade program causes any localized air quality impacts; and two, forest impacts resulting from offset projects.

While initially the plan was developed for the cap-and-trade program to comply with the California Environmental Quality Act, the tool that the ARB is considering now is very different in scope. In order to aid in compliance with tracking criteria pollutants and toxic air contaminants from facilities reporting under the cap-and-trade program as directed under AB 197, it is likely the adaptive management tools will encompass tracking criteria air pollutants and toxic air contaminants.

According to the ARB, the adaptive management tool will address the following questions:

- Have we observed an increase in air pollution from cap-and-trade covered facilities in disadvantaged communities?
- Does the observed increase warrant a deeper investigation?
- Is the increase caused by cap-and-trade?
- What are the potential responses?

The adaptive management report is anticipated to be released this spring to initiate a public process and the report is to be presented to the ARB in the summer along with proposed actions needed to reduce exposure from covered facilities.

Federal Clean Power Plan

It was anticipated that the U.S. Environmental Protection Agency (U.S. EPA) would finalize its Clean Power; in 2016, which sets limits on GHG emissions from existing power plants. The final rules are expected to set GHG targets for 2030 on a state-by-state basis. While California is well placed to achieve the targets, other states filed suit claiming the U.S. EPA has overstepped its authority by regulating the state-based energy sector.

On February 9, 2016, the Supreme Court stayed the implementation of the Clean Power Plan; it is awaiting judicial review. While the court stayed the implementation, California has continued to work on a regulation that would allow for implementing the Clean Power Plan and is scheduled to be considered by the ARB in the spring of 2017. The recent presidential election has created some uncertainty as to future of the Clean Power Plan.

State Implementation Plan (National Ambient Air Quality Standards)

The State Implementation Plan (SIP) is a compilation of plans submitted by local air districts, which rely on the same set of control strategies to achieve federal ozone standards. The ARB is the lead agency in the state for the SIP, and compiles the local plans to present to the U.S. EPA for approval. SIPs must identify the quantity of emission reductions necessary to meet the air quality standards and the actions necessary to achieve them.

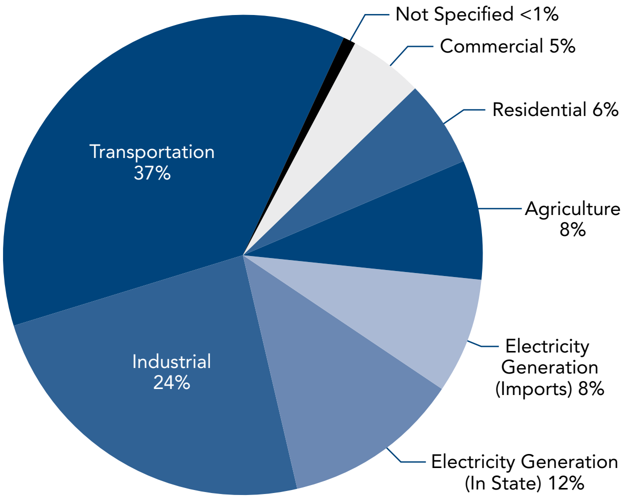
On October 1, 2015, the U.S. EPA strengthened the National Ambient Air Quality Standards for ground-level ozone to 70 parts per billion (ppb) amidst disappointment from both the business and environmental communities. The business community urged the administration to maintain the current standard of 75 ppb, which has not yet been attained in some areas of California and is costly to achieve, while the environmental and public health community claimed that 60 ppb was necessary for public health. California released an updated SIP in May 2016 and the final version was to be presented to the ARB in January 2017.

Mobile Source/Sustainable Freight Strategy

A major component of the updated SIP is the mobile source strategy, which simultaneously purports to address air quality standards, achieve GHG emission reduction targets, and implement policies that will result in reduced petroleum consumption.

The strategy includes both short- and long-term goals. For passenger vehicles, the strategy calls for an increasing penetration of plug-in hybrid electric and zero-emission vehicles. To support those vehicles, the electrical grid and hydrogen supply will need to be supported by 50% renewable energy. Heavy duty vehicles, in the near term, will continue to be dominated by combustion technology; the SIP will call for an increase in efficiency of those engines. In addition, the mobile source strategy calls for reducing vehicle miles traveled by improving community designs and efficiency improvements to the freight transport system.

2014 Total California Emissions: 441.5 $MMTCO_2e$



Source: California Air Resources Board, Discussion Draft: 2030 Target Scoping Plan Update (December 2, 2016).

In July 2015, Governor Brown issued Executive Order B-32-15, which is an integrated plan to improve freight efficiencies, transition to zero-emission technologies and increase competitiveness in California's freight system. This strategy ties into the Mobile Source Strategy since both seek a transition to cleaner transportation systems. (For more information, see the Sustainable Freight article.)

International Climate Change

Internationally, California has been working with other nations and jurisdictions to share best practices, develop policies, and make commitments under the United Nations Framework Convention on Climate Change, as well as under other bilateral agreements. (As a state, California cannot enforce international agreements, but can state its aspirations and intent, pass laws that implement those aspirations, and provide leadership and an example for other subnational or national governments to achieve.)

The 2015 Paris Accord resulted in international leaders reaching an agreement on climate change. This agreement was ratified on October 5, 2016 and includes nonbinding language on "Intended Nationally Determined Contributions." These contributions are a public declaration of what actions each country intends to take to address climate change. For example, the United States intends to reduce greenhouse gas emissions by 26%–28% below 2005 levels by 2025. The contributions from this agreement will include approximately 90% of global emissions (compared to 14% in the Kyoto Protocol).

Seen as a success, the agreement in Paris envisions that all nations will contribute to the reductions, would in the aggregate limit temperature rises below 2 degrees Celsius, call on developed nations to donate $100 billion annually to developing nations by 2020 to help those nations achieve GHG reduction goals without derailing their economies, and publication of GHG reduction targets and a goal of carbon neutrality by 2050.

Governor Brown, along with a delegation from California comprising lawmakers, business leaders and academics, attended the United Nations climate change conference in Paris to sell the successes of California's climate change program and promote it as a model to the rest of the world. Prior to traveling to Paris, in a December 1, 2015 interview, Governor Brown stated, "Our goal is to take what we are doing in California and get others to join us, so we don't put ourselves as an outlier in an uncompetitive position."

CalChamber Position

Monitor and engage in the implementation of the Global Warming Solutions Act of 2006 (AB 32) and SB 32 (Chapter 249, Statutes of 2016) by advising the ARB and other relevant regulatory agencies about cost-effective strategies to reduce the state's greenhouse gas emissions. Support strategies that include market incentives for industries to reduce emissions. Discourage the pursuit of future climate change legislation that would interfere with the ongoing implementation of current climate policies, increase the cost of compliance, or discourage business from locating or expanding in California. Help state lawmakers develop policies to bring new businesses to California and help employers reduce greenhouse gas emissions in the most cost-effective, technologically feasible manner.

Monitor federal climate change legislation and regulations to ensure that California will not be disadvantaged by any proposals. California's program must be deemed equivalent to any emerging federal program and AB 32/SB 32 must not result in duplicative state and federal programs. Advocate market principles and cost-effective solutions that will help reduce emissions on a global level without discouraging investment in California. On the regional front, continue to monitor the progress of linking California's cap-and-trade program into a regional market.

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