

# POLICY CONSIDERATIONS FOR EMERGING CARBON PROGRAMS



With climate action gaining momentum around the country, policymakers at the city, state, and federal level are all considering policy tools they can use to achieve their goals. Many market-based options exist that can deliver differing co-benefits. Discussions and collaboration with other jurisdictions and with affected businesses can also improve the policy outcome.

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## BACKGROUND

Driven in part by the international Paris Agreement, and the U.S. pledge to reduce national emissions 26-28 percent below 2005 levels by 2025, states and cities across the country are setting or revising climate targets and developing policies to achieve them. In many cases, these new policies will coincide with existing climate and energy policies that cover all sectors of the economy. These policies vary in their scope, ambition, and the extent to which they use market-based mechanisms.

Having policies implemented on the same sector at different levels of government can complicate the regulatory environment for businesses. But rather than support arguments that regulations should be abandoned, this situation can provide an opportunity for stakeholders to engage in collaborative discussion to ensure the environmental outcome of each policy enhances the other.

This paper will provide a brief overview of market-based policy options that policymakers can consider in achieving their climate goals, whether they are implementing local, state, or even federal climate

goals. It will also identify circumstances that can lead to overlapping climate regulations with an aim to assist stakeholders in promoting synergies between coexisting policies.

## MARKET-BASED POLICY OPTIONS

The term market-based policy refers to a policy that relies upon a market signal to effect the desired change. They are in contrast to command-and-control policies that typically require polluters to take specific actions to reduce emissions by installing a particular technology or meeting a specific performance (emissions) standard. At the U.S. federal level, market-based policies have been used to reduce sulfur dioxide emissions at a fraction of the originally estimated cost, while at the state level they have been used successfully in renewable energy programs and cap-and-trade programs for greenhouse gases and nitrogen oxides.

Market-based options provide greater flexibility for firms and seem particularly appropriate in the context of policies to reduce greenhouse gas (GHG) emissions. Because GHGs are not harmful on a localized

basis—they are globally mixed in the atmosphere and do damage on a global scale—market-based policies that provide greater compliance flexibility can achieve environmental objectives at lower overall costs without compromising the environmental objective of mitigating the impacts of climate change. This type of policy can also be designed to allow the private market to determine which technologies will thrive and expand.

## TAXES AND SUBSIDIES

The most basic form of a market-based policy is a tax that sets a price on each unit of pollution. By introducing a tax on pollution, the entity producing the pollution incurs an additional cost based on the amount of pollution emitted. Because of this, the entity has an incentive to reduce the pollution produced by changing its processes or adopting new technology. In this way, the tax provides a continuous incentive for innovation; the more emissions can be reduced, the less tax a company would pay. The level of the tax can be set depending upon the policy objectives; it could be set equal to the cost to society that the pollution creates in order to align economic incentives, or it could be set to raise a pre-defined level of government revenue to fund desired pollution prevention programs.

Subsidy programs that provide government assistance (or tax credits) for specific types of low-emitting activities or technology applications function in a similar way to taxes, in that they provide a specific financial mechanism to motivate a particular environmentally beneficial outcome (they are, in fact, negative taxes). Subsidy programs are by their nature a “cost” to taxpayers in general, but they are often more popular than new taxes, being seen as a carrot rather than a stick. The federal investment tax credit for solar and the federal production tax credit for wind are examples of incentives to deploy renewable energy technologies.

## CAP AND TRADE

Another market-based mechanism is a cap-and-trade program. This approach is “quantity-based.” Instead of setting a price on each unit of pollution, the regulatory authority determines a total quantity of pollution (a “cap”) that will be allowed. Companies buy and sell emission allowances (tradable certificates that allow a

certain amount of emissions) based on their needs. The requirement that regulated businesses hold enough allowances to cover their emissions ensures the cap is met and creates demand for the allowances. If it is less costly for a company to reduce emissions than to buy allowances, the company will reduce its own emissions.

Because there is a scarcity of allowances and businesses can trade them, the allowances are valuable and lead to a price on greenhouse gas emissions. This price provides a continuous incentive to reduce emissions and innovate since firms can save money if they reduce their emissions and avoid buying allowances. If a state implemented the Clean Power Plan through mass-based trading, that would, in practice, be a cap-and-trade program.

## BASELINE-AND-CREDIT PROGRAM

Somewhat similar to a cap-and-trade program is a baseline and credit program, which establishes a defined emissions limit either in terms of absolute emissions or emissions per unit of output. Firms that emit below their baseline limit would be able to create credits and sell these to firms that emit more than their baseline limit.

In the power sector, standards could be based on carbon dioxide per megawatt hour of electricity produced with a specific type of technology. This is the case for rate-based trading under the Clean Power Plan.

In the transportation sector, the standard could be based upon the carbon intensity of the fuel, typically under a Low Carbon Fuel Standard. The Corporate Average Fuel Economy (CAFE) standards that regulate the fuel economy (i.e., miles per gallon of gasoline) of vehicles are a related example.

## ELECTRICITY PORTFOLIO STANDARDS

Renewable electricity standards are types of electricity portfolio standards typically targeted to spurring commercialization of non-emitting technologies (often with specific provisions to favor one or more particular technologies) in the electric power sector. These standards can be designed so that each utility within a particular territory must obtain a certain percentage of its delivered electricity from a defined set of clean or renewable sources. Often this is combined with a

mechanism that reduces overall compliance costs by allowing a utility that can exceed the standard to create tradable credits that can be banked for future use or sold to other utilities for their compliance.

Portfolio standards can mandate specified renewable sources (Renewable Portfolio Standards, RPS), low- or non-emitting sources including natural gas or nuclear (Clean Energy Standards, CES), or energy efficiency savings (Energy Efficiency Resource Standard, EERS). These policies achieve different objectives but all provide compliance flexibility through the use of a trading mechanism. They also all tend to reduce GHG emissions as a co-benefit.

## FEEBATES

Feebates are a regulatory program creating a schedule of fees and rebates (hence “feebates”) to the purchase price of a good based on an aspect of the good that policy hopes to influence. Feebates are most often discussed in the context of changing the relative prices of automobiles based on their fuel economy, but could be applied to a wide range of consumer durables (e.g. refrigerators, washer-dryers, televisions, etc.). Not dissimilar to a gas-guzzler tax, a feebate goes a step further and uses the revenue collected from such a tax to create a subsidy for fuel-efficient purchases. Because it both collects fees as well as distributes rebates (subsidies), the system can be designed to be revenue-neutral to the government (or could be structured to generate revenues or direct expenditures depending on the relative magnitudes of the fees and rebates).

## OVERLAPPING CLIMATE POLICIES

Climate policies can overlap in two distinct ways. The first occurs when different levels of government enact policies to achieve separate climate goals. For example, a city may set a GHG reduction target in a state that also has a legislated target. This is becoming more common as a growing number of cities across the country are taking action on climate. Additionally, the federal government is taking action through the Clean Power Plan, new regulations on methane emissions, appliance efficiency standards, and other regulations. State or local policies in place today tend to set requirements on top of existing federal programs.

A second situation is when a sector becomes regulated for carbon emissions specifically, even while existing regulations to achieve separate objectives reduce emissions as a co-benefit. For example, the federal Renewable Fuel Standard (RFS) requires an amount of renewable fuel to be blended with gasoline with the objective of reducing oil imports. This policy overlaps with state-level Low Carbon Fuel Standards (LCFS) that aim to reduce the carbon intensity of transportation fuels, creating multiple targets for some fuel providers that both achieve emissions reductions.

In many cases, these overlapping policies are recognized as complementary, and their interaction is anticipated early in the policy development process. This was the case in California, where the state instituted a RPS, a LCFS, net-zero energy building mandates, and several other policies aimed at reducing GHG emissions in addition to its cap-and-trade program. These complementary policies have many benefits, including helping to keep carbon allowance prices low, thereby improving political support for the carbon trading program. Similarly, New York recently passed aggressive GHG reduction targets, and it is planning a CES as one policy in support of this goal. The CES would be a requirement for New York electricity providers in addition to their requirements under the Regional Greenhouse Gas Initiative (RGGI) cap-and-trade program.

While businesses have operated in complex regulatory environments for many years, the focus on carbon emissions is often new. Businesses (and policymakers) are educating themselves on the topic of climate change and, in many cases, the benefits of a market-based approach. New questions are arising such as: Do the benefits of policy overlap outweigh the burdens? How can overlapping policies be designed to ensure they enhance the environmental outcomes? Do overlapping policies have unique concerns regarding market oversight, environmental justice, economic, or political issues?

## CONCLUSION

Policymakers at all levels of government have multiple options. The exact choice of policy tool will depend upon several factors, including legal authority, desired policy

outcome, and desired co-benefits. An understanding of market-based options and the landscape of current policy development can support thoughtful and effective policy solutions.

Climate policies are not being implemented in a vacuum, and increasingly, different levels of government are enacting multiple policies on the same sector. C2ES is interested in identifying the best approach(es) to policymaking that can lead to maximum environmental benefit and also policy design elements that should be considered when multiple jurisdictions regulate GHG emissions. Identifying these best practices now can enhance the policymaking activity that is on the horizon.

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### Other C2ES Resources:

*Market Mechanisms: Understanding the Options*, April 2015.

*The Clean Power Plan and Market Options for Compliance*, September 2015.

*Rate-based Compliance Under the Clean Power Plan*, February 2016.



The Center for Climate and Energy Solutions (C2ES) is an independent, nonprofit, nonpartisan organization promoting strong policy and action to address our climate and energy challenges. The C2ES Solutions Forum brings together businesses, states, and cities to expand clean energy, reduce greenhouse gas emissions, and strengthen resilience to climate change.