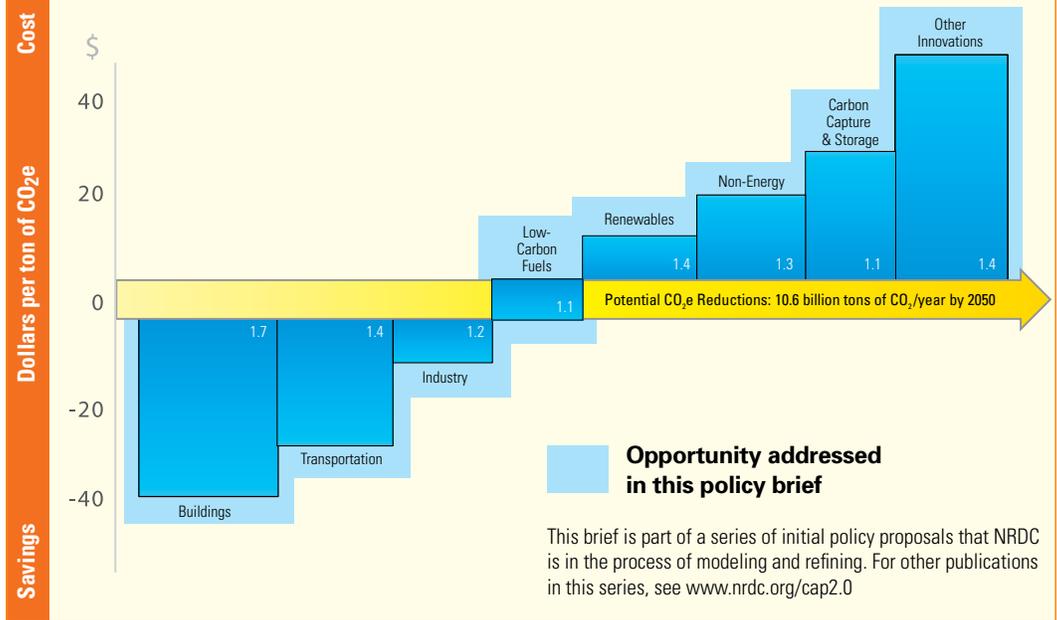


Part of a series on

CAP 2.0

Policy Brief

Capping Carbon Emissions and Investing Future Carbon Revenue Today Can Accelerate our Economic Recovery



Investing in Our Recovery: Repowering America with a “Cap and Invest” Climate Plan

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The current economic crisis, precipitated by the collapse of the housing market and ensuing credit freeze, presents challenges for the U.S. economy unlike any seen in a generation. Facing the prospect of a deep, multi-year recession, we must focus our efforts on an economic recovery plan that provides needed short-term stimulus and lays the groundwork for a stable, long-term recovery. Enacting a cap and trade system to limit global warming pollution is an essential component of a comprehensive plan to repower America. Passing legislation to cap global warming pollution can spur investment, create millions of jobs, and help pull our lagging economy forward by providing the opportunity to borrow against the value of future pollution allowances and creating the market signals needed to trigger a surge of clean energy investments.

Capping Emissions Will Boost Our Economy

With credit markets stalled, our task is to get banks and other investors back to work lending to rebuild and repower America. We most urgently need investments that create jobs, especially those that can improve the competitiveness and productivity of our domestic manufacturing base, lower costs to commercial and residential building owners, and help us develop alternative and renewable sources of

energy to enhance our long-term energy security. A short-term stimulus package—even a very large one—can directly jump-start significant clean energy investments such as home weatherization, but it will not mobilize enough money to sustain clean energy innovation over the long term.

What we need is a way to stimulate sustained private investment in efficiency and clean energy innovation. Climate legislation that combines a firm cap on global warming pollution with significant incentives for investing in clean



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technology—a “cap and invest” program—will help attract private financing, provide stable funding for developing and deploying advanced technology, and ensure that clean energy investments are sustainable over the long term.

A pollution cap will not interfere with the recovery because it will not increase energy costs in the short term. If climate legislation were enacted tomorrow, the emissions cap itself will not come into force for several more years. By auctioning and allocating emission allowances on a performance basis the “cap and invest” program will create streams of revenue that federal and state governments and industry can use as capital for efficiency and clean energy investments that drive down the long term costs of climate legislation. Meanwhile the value of future emission allowances for the U.S. economy will be quite significant, potentially more than \$100 billion per year.

Enacting properly designed climate legislation now will encourage immediate and sustained capital investment in a new energy economy in three ways:

1. Climate legislation will sharply reduce the regulatory uncertainty that has previously limited capital investment in clean energy.

Long-term emission reduction targets and expectations of an impending market price on global warming pollution will give investors the confidence to invest in lasting clean energy infrastructure.

2. The federal government can immediately scale up incentives for efficiency and clean energy innovation.

Once the legislation is enacted, the implementing agency can begin granting the technology innovation and deployment incentives (e.g., loan guarantees, temporary production subsidies) set out in the legislation using, for example, a line of credit from the Treasury. This pre-cap incentives program should be over and above the clean energy investments planned in the stimulus package.¹ When the cap takes effect, say in 2012, revenue from auctioning pollution allowances can pay back the Treasury for the investment expenditures incurred during the 2009 to 2011 ramp-up period, as well as pay for ongoing incentives. The program should include low-cost financing for producers and purchasers of advanced technology vehicles, incentives and credit enhancement facilities for energy efficiency investments, and support for deployment of emerging clean energy supply technologies.

3. A well designed “cap and invest” program can help bridge the credit gap for the private sector and state governments.

As soon as the bill is enacted, states and companies can use future allowances as collateral for financing investment in qualified low-carbon initiatives. This source of collateral to ease borrowing is critical at a time when states face stark budget cutbacks and private sector borrowing to make investments that create jobs has nearly ground to a halt.

Timeline for Economic Recovery through Climate Legislation

Time Period	Cap and Invest Steps	Impact on New Energy Economy Investment
Mid 2009	Cap and invest legislation is enacted and directs the Environmental Protection Agency to establish a pre-cap incentives program to help finance efficiency and clean energy innovation initiatives before the cap takes hold in 2012.	<ul style="list-style-type: none"> Industry starts borrowing using future performance-based incentives as collateral to finance efficiency improvements that will free up allowances for resale at a profit States ramp up existing efficiency programs using future performance-based emission allocations
Late 2009 or early 2010	The EPA develops the 2009 to 2011 incentives program, taking into account recent and current stimulus spending to leverage additional investments. The Treasury establishes a line of credit to fund the early incentives program, following the criteria established in the legislation.	<ul style="list-style-type: none"> Renewables industry increases investment and leverages new, more stable incentives Manufacturers of efficient equipment and appliances as well as efficiency services providers ramp up in response to incentives Development of carbon capture and storage projects initiated in response to incentives
January 2012 to 2020	Allowance auctions begin and the EPA pays back the Treasury for early incentive program loans with interest from auction revenues.	<ul style="list-style-type: none"> Sustained efficiency and renewables rollout Major carbon capture and storage build-out begins



Securing Emission Reductions through Performance-Based Incentives

Climate legislation should allocate all emission allowances or auction revenues for public purposes such as reducing emissions at the least overall cost to the economy and not for creating private windfalls. In particular, Congress should distribute the value of allowances on a performance basis to ensure that we receive the technological advancements we are committing public dollars to achieve. This can be done by tracking progress against clear benchmarks. For example, a performance-based distribution to states would reward those that improve their measured energy efficiency with additional funding over time.² Similarly, an incentive for manufacturers would reward those that reduce their carbon emissions intensity relative to their direct competitors.³ Government incentives for developing and deploying advanced technologies should likewise be performance-based to ensure emerging technologies deliver clean energy at steadily declining costs over time.

Protecting the Value of Low-Carbon Investments through Minimum “Bankable” Value for Allowances

To facilitate early investment and ensure a stable carbon allowance market, climate legislation should include a minimum reserve price for carbon allowance auctions, which in times of low allowance prices would reduce the number of allowances auctioned as needed to maintain a specified price floor. The EPA could retire the reserve allowances unused (thereby accelerating the emission reductions) or use any withheld “reserve” allowances as a cost control mechanism to be released in times of unexpected allowance price spikes.

The reserve price mechanism will assure the market that carbon allowances will have a minimum “cash value,” thereby enabling firms and the government to use revenues from future carbon auctions as a form of “bankable” collateral for emissions reducing investments. In the current credit-constrained environment, this desperately needed collateral would give banks the confidence to lend to industry for investments that will improve their energy performance. Similarly, states could begin

ramping up energy efficiency efforts now by borrowing against future efficiency dollars anticipated under the cap and trade system.

Jumpstarting Stalled Investments

Well-designed carbon legislation that includes incentives for efficiency and clean energy innovation would jumpstart energy sector investments that have been stalled by a range of market barriers, all of which have recently been aggravated by the credit crisis. Important examples include:

- Scaled-up investment in energy efficiency would create the millions of green-collar jobs desperately needed across the country.
- Renewable energy companies will be better able to compete in a market that recognizes the true cost of carbon pollution from fossil-fuel-based energy sources. These same companies will have a stronger case when tapping banks for financing to pursue new technologies that can be utilized at home and exported overseas.
- Coal plant developers and operators will be able to reduce carbon emissions by deploying carbon capture and storage (CCS) systems, which could then provide a cheap source of carbon dioxide to recover stranded domestic oil through a process called enhanced oil recovery (EOR). Increasing output from existing domestic wells has the potential to displace 100 percent of U.S. oil imports for 6 years.

Repowering America Now

Passing climate legislation now that would complement the economic stimulus packages being put in place by the new administration would help ensure that efforts to jumpstart the economy also bring about a sustained recovery. Climate legislation that enables immediate investment in efficiency and clean energy innovation will help retain jobs in existing industries and drive the creation of new growth industries. A clean energy future for the United States will reduce dependence on fossil fuels and create export opportunities that boost our global competitiveness for decades to come. These investments will also lower our cost of doing business, improve our energy security, and reduce the effects of climate change.

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Scaling up Energy Efficiency with Combined Heat and Power (CHP): A Real World Example of Cap and Invest

Manufacturers in the United States are now seeing their capital budgets contract as the cost of borrowing money rises and demand for products continues to decline. Companies are reducing their costs to limit the impact of the current economic slowdown, but without the investment capital needed to improve productivity, layoffs have become a painful short-term solution for many companies.

Well-designed climate legislation passed in 2009 can immediately provide industries with working capital—through direct incentives or collateral for private financing—for efficiency investments in domestic production facilities to lower their carbon intensity and improve their energy productivity relative to the average carbon intensity of their sector or in relation to their global competitors. This will continually reward companies that invest in efficiency or otherwise reduce emissions. Such a program will drive down bottom-line costs and help ensure that manufacturers who take advantage of these incentives remain committed to maintaining their domestic production facilities in the United States.

Potential Economic Benefits from Combined Heat and Power (CHP) Investments	2006	2030
United States CHP Capacity as a Percent of Total Electric Generating Capacity	9% (85 GW)	20% (240 GW)
Economic Value of Reduced Annual Energy Consumption with CHP per year (assuming a 10.60 cent/kWh cost of electricity)	\$60 billion	\$176 billion
Total Annual CO ₂ Reduction*	250 million metric tons	850 million metric tons
Cumulative Economic Value of Reduced Energy Consumption through 2030	–	\$1,150 billion
Minimum Economic Value of Cumulative CO ₂ Reduction through 2030 (assuming an allowance price floor of \$10/ton CO ₂ in 2013, rising 5% per year)	–	\$90 billion
Cost of Accelerated CHP Deployment through 2030	–	(\$320 billion)
Cumulative Net Economic Benefit from Accelerated CHP Deployment through 2030	–	\$920 billion
Cumulative Number of New Jobs Created	–	936,000

Putting Wasted Energy to Work

By capturing and utilizing the waste heat from industrial processes, combined heat and power (CHP) technology is a proven means for reducing fuel consumption and increasing carbon intensity and energy productivity. Scaling up CHP would not only make businesses more competitive and improve our energy security, it would also provide employment for the nearly one million people needed to engineer, manufacture, site, install, and maintain the CHP systems once installed.

CHP Investments Pay for Themselves Many Times Over

CHP already represents 9 percent of U.S. electricity capacity, or \$60 billion in energy services in the year 2006. Climate legislation should prompt investment to increase our CHP capacity to at least 20 percent by 2030, bringing it in line with CHP deployment in many European countries today. Such an effort would require approximately \$320 billion in CHP investment, which would then buy us cumulative savings of \$1.15 trillion in fuel costs and \$90 billion in reduced CO₂ costs over the next two decades.

Passing climate legislation now would encourage and enable immediate industrial investment in CHP and other energy productivity-enhancing technologies. Such investments would drive down energy costs for industry and increase demand for equipment from domestic manufacturers such as Caterpillar and General Electric.

*These emissions reductions are equivalent to the global warming pollution emitted by 45 million cars in 2006, and 150 million cars by 2030.

Note: Statistics prepared with information compiled in Oak Ridge National Laboratory, “Combined Heat and Power: Effective Energy Solutions for a Sustainable Future,” Dec. 1, 2008, http://www1.eere.energy.gov/industry/distributedenergy/pdfs/chp_report_12-08.pdf

¹ See the forthcoming Cap 2.0 briefs on energy efficiency for details on Super-efficient Buildings Incentive (SEBI), the Super-efficient Equipment and Appliances Deployment (SEAD) program. See the Cap 2.0 brief on Renewables for details on clean energy innovation support.

² See the forthcoming Cap 2.0 policy brief on energy efficiency for details on channeling federal climate funds to states (or their local distribution companies) to encourage energy efficiency through a range of policies controlled at the state level, including building codes and smart utility regulation.

³ As proposed, for example, in the Doyle-Inslee bill (H.R. 7146).

⁴ See NRDC Fact Sheet on Carbon Capture and Storage with Enhanced Oil Recovery.