Congressional Budget Office

Director's Blog

Archive for the 'Climate Change' Category

« Older Entries
Newer Entries »

Reductions in Greenhouse Gas Emissions under the House's Climate and Energy Bill

Saturday, July 4th, 2009 by Douglas Elmendorf

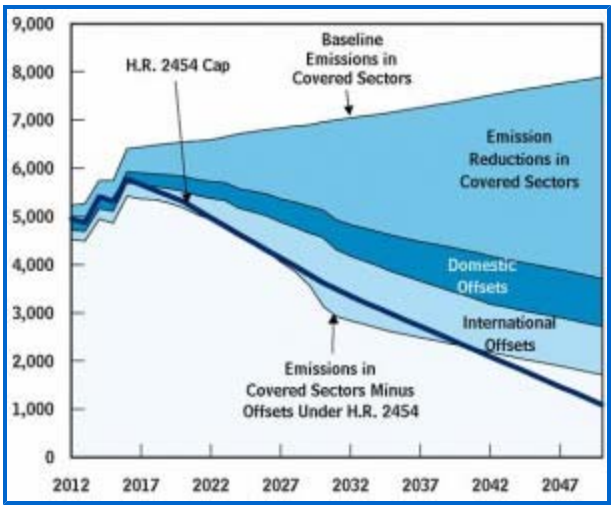
The American Clean Energy and Security Act (H.R. 2454), recently passed by the House of Representatives, would establish two cap-and-trade programs for greenhouse gas (GHG) emissions. One small program would apply only to hydrofluorocarbons (HFCs) while a much larger program would apply to other types of GHG emissions—practically all emissions from the combustion of fossil fuels plus a fraction of other emissions from industrial and agricultural sources. Under the bill, operators of most sources of emissions would be required to hold an allowance for each ton of GHG they emit, and other entities would be required to hold an allowance for each ton of GHG that will be emitted when the fuel they sell (such as gasoline) is burned or when a product they produce (such as HFCs) escapes into the atmosphere.

By gradually reducing the total number of allowances available every year, the bill would lower the total amount of emissions from the sources it covers. However, the bill would allow those sources to produce emissions in excess of their allowances if they pay for reductions in emissions elsewhere. For example, if an electric utility paid a landowner to reforest a parcel of farmland so that the trees would absorb carbon dioxide, it would receive "offset" credits that it could submit in lieu of allowances, allowing it to produce a larger quantity of emissions than it would have otherwise. The bill would allow covered entities to purchase such offsets from domestic sources and, under certain circumstances, from sources outside of the United States. In CBO's estimation (CBO's original cost estimate), covered sources would use significant amounts of offsets and thereby reduce their own emissions substantially less than they would if offsets were not available—which, in turn, would cause the price of allowances to be much lower than otherwise.

The bill also would allow entities to "bank" unused allowances if they chose, carrying them over from year to year until they decided to use them. CBO projects that entities would undertake more emission reductions than necessary in the early years of the program, banking several hundred million tons' worth of allowances per year to use in later years when emission allowances would become increasingly scarce and hence more valuable.

The figure below shows CBO's estimate of how U.S. emissions (or output of products that will ultimately result in emissions) would be reduced under the House-passed bill. This estimate incorporates the number of allowances that would be issued under both the GHG and HFC caps, as well as the opportunities to purchase domestic and international offsets and incentives to bank allowances.

Estimated U.S. Emissions under the House-passed Bill



For example, in the absence of any change in policy, CBO projects that in 2020 total U.S. emissions will be about 7,580 million metric tons of carbon dioxide equivalents; emissions by entities that would be covered under the two cap-and-trade programs would account for about 6,550 million tons, more than 85 percent of total U.S. emissions. Under the legislation, covered entities would have access to about 5,200 allowances (the nominal cap in that year less a set-aside of allowances that would become available only if allowance prices in the large program spiked unexpectedly high). By CBO's estimates, these entities would pay for about 300 million tons of reductions by domestic entities not covered by the cap-and-trade programs, and they would purchase nearly 430 million tons of reductions in foreign countries, for which they would receive credit against 350 million tons worth of domestic emissions. The allowances and offsets together would allow covered entities to emit roughly 5,850 million tons of carbon dioxide equivalents (5,200+300+350), but CBO estimates that the entities would choose to bank allowances for 20 million tons (having already accumulated over 2,000 million tons of banked allowances by 2020). Thus, total emissions of the covered entities in that year would be about 5,830 million tons, 720 million tons (or 11 percent) below the amount anticipated under current law. (That percentage would increase to about 53 percent by 2050.)

If the offsets represented true emission reductions relative to baseline, then total emission reductions spurred by the bill would be 1,450 million tons (6,550-5,830+300+430). However, many observers worry that at least some of the offsets might be difficult to verify or might themselves be "offset" by increases in emissions elsewhere.

Posted in Budget Projections, Climate Change | Comments Off

The Impact of Cap-and-Trade Proposals on Fuel Prices

Friday, June 26th, 2009 by Douglas Elmendorf
Regarding the proposed cap-and-trade program being considered by the House of Representatives, a number of people have inquired as to whether it is correct to say, as is currently being circulated, that "the Congressional Budget Office estimates that cost impacts could be as much as $.77 per gallon for gasoline, $.83 per gallon for jet fuel, and $.88 per gallon for diesel fuel, all ultimately borne by the consumer."

CBO's cost estimate for the legislation did not include an estimate of increases in the price of particular products, such as gasoline or diesel fuel. The numbers being circulated were produced by the American Petroleum Insititute (API). CBO analysts have been in contact with the API analyst that produced them to understand how they constructed those numbers.

According to API, it produced those numbers by assuming that there would be no offsets available (see note below), an assumption that we did not make when estimating the cost of the bill. For the purposes of sensitivity analysis, CBO 's estimate of an earlier version of the bill (H.R. 2454) reported how the allowance prices would have changed under a variety

of different assumptions, including the elimination of offsets as well as changes in other parameters. Accordingly, CBO indicated that the availability of offsets had a significant effect on the allowance price, reducing it by 70 percent. Taking the inverse of that reduction, API concluded that, without offsets, our allowance price would have been over three times higher.

API translated allowance prices into the prices of particular products, such as gasoline, using emission coefficients from EPA. Given those emission coefficients, the $16 and $26 allowance prices that CBO predicted for 2012 and 2019 , respectively, would imply gasoline price increases of $0.14 and $0.23, respectively. But, under the extreme assumption of no offsets (and correspondingly higher allowance prices of $53 and $87 in 2012 and 2019, respectively), API calculated gasoline price increases of $0.47 in 2012 and $0.77 in 2019.

Because the bill provides for the use of both international and domestic offsets and CBO concluded that firms would be able to make use of such offsets when complying with the provisions of the bill (taking into account available information on both the supply of those offsets and competing demands for them), it is a misrepresentation of our work to say that the $0.77 per gallon for gasoline, $0.83 per gallon for jet fuel, and $0.88 per gallon for diesel fuel are consistent with our cost estimate for the legislation.

NOTE: API states that it is assuming no international offsets, but the numbers that it presents actually correspond to the case with neither domestic nor international offsets. There was a typo in the initial release of our cost estimate that could have caused confusion about this, but soon after that release the typo was corrected on the web version of the cost estimate.

Posted in Climate Change | Comments Off

More on the Estimated Costs to Households of a Cap-and-Trade Program

Thursday, June 25th, 2009 by Douglas Elmendorf

Last Friday, CBO released an analysis of the average cost per household that would result from the greenhouse-gas (GHG) cap-and-trade program in the American Clean Energy Security Act of 2009 (H.R. 2454). In that analysis, CBO examined the effects of the bill as it would apply in 2020 but described those effects in the context of the current economy: that is, as if the 2020 policy were in effect in 2010. Describing the effects in 2010 allows a more direct comparison of the costs with current household incomes. The blog entry provides more detail on how CBO derived the estimate of the costs of emission allowances and offsets for 2010.

CBO estimates that the price of an allowance, which would permit one ton of GHG emissions measured in carbon dioxide equivalents, would be $28 in 2020 (measured in 2020 dollars). CBO also estimates that nearly 5 billion allowances would be issued in 2020 (after subtracting allowances set aside for a strategic reserve) and that the costs of international and domestic offsets purchased in 2020 would be $20 billion, yielding a total cost of allowances and offsets of about $160 billion.

CBO modeled the 2020 policy in 2010 by maintaining the same relationship between the total value of allowances and the size of the economy (as measured by gross domestic product) in 2010. On that basis, CBO estimates that the equivalent cost of allowances and offsets would be roughly $105 billion in 2010. CBO projects that GDP in 2010 will be about one-third below the level projected for 2020 and thus the 2020 allowance value is reduced by about one-third so that its value relative to the size of the economy remains the same. CBO made a similar adjustment to the 2020 estimate of the resource costs associated with the policy.

To measure the impact across households in 2010, CBO used an estimate of the distribution of spending on goods that have carbon dioxide emissions associated with their production or consumption across household income groups in that year. The database for the analysis was constructed by statistically matching income information from the Statistics of Income data from the Internal Revenue Service, households' characteristics from the Current Population Survey reported by the Bureau of the Census,

and data on households' expenditures from the Consumer Expenditure Survey by the Bureau of Labor Statistics. The data are from 2006, the latest year for which the data from all three sources are available, and thus reflect the patterns of income and consumption in that year. CBO adjusted the data to 2010 levels by the estimated overall growth in population and income. CBO did not attempt to project how the distribution across household income groups or composition by source of income or expenditures would change between 2006 and 2010.

Posted in Climate Change | Comments Off

Estimated Costs to Households From the Cap-and-Trade Provisions of H.R. 2454

Saturday, June 20th, 2009 by Douglas Elmendorf

Yesterday, CBO released an analysis that examines the average cost per household that would result from the greenhouse gas cap-and-trade program in the American Clean Energy and Security Act of 2009 (H.R. 2454, as it was reported by the Committee on Energy and Commerce) and how that cost would be spread among households with different levels of income. The analysis does not include the effects of other aspects of the bill, such as federal efforts to speed the development of new technologies and to increase energy efficiency by specifying standards or subsidizing energy-saving investments.

Reducing emissions to the level required by the cap would be accomplished mainly by stemming demand for carbon-based energy by increasing its price. Those higher prices would, in turn, reduce households' purchasing power. At the same time, the distribution of emission allowances would improve households' financial situation. The net financial impact of the program on households in different income brackets would depend in large part on how many allowances were sold (versus given away), how the free allowances were allocated, and how any proceeds from selling allowances were used. That net impact would reflect both the added costs that households experienced because of higher prices and the share of the allowance value that they received in the form of benefit payments, rebates, tax decreases or credits, wages, and returns on their investments.

The incidence of the gains and losses associated with the cap-and-trade program in H.R. 2454 would vary from year to year because the distribution of the allowance value would change over the life of the program. In the initial years of the program, the bulk of allowances would be distributed at no cost to various entities that would be affected by the constraint on emissions. Most of those free allocations would be phased out over time, and by 2035, roughly 70 percent of the allowances would be sold by the federal government, with a large share of revenues returned to households on a per capita basis. This analysis focuses on the effect of the legislation in the year 2020, a point at which the cap would have been in effect for eight years (giving the economy time to adjust) and at which the allocation of allowances would be representative of the situation prior to the phase-down of free allowances. The incidence of gains and losses would be considerably different once the free allocation of allowances had mostly ended. Although the analysis examines the effects of the bill as it would apply in 2020, those effects are described in the context of the current economy—that is, the costs that would result if the policies set for 2020 were in effect in 2010.

On that basis, CBO estimates that the net annual economywide cost of the cap-and-trade program in 2020 would be $22 billion—or about $175 per household. That figure includes the cost of restructuring the production and use of energy and of payments made to foreign entities under the program, but it does not include the economic benefits and other benefits of the reduction in greenhouse gas emissions and the associated slowing of climate change. Of the total cost, CBO could not determine the incidence of certain pieces (including both costs and benefits) that represent, on net, about 8 percent of the total.

For the remaining portion of the net cost, households in the lowest income quintile would see an average *net benefit* of about $40 in 2020, while households in the highest income quintile would see a *net cost* of $245. Added costs for households in the second lowest quintile would be about $40 that year; in the middle quintile, about $235; and in the fourth quintile, about $340. Overall net costs would average 0.2 percent of households' after-tax income.

Posted in Climate Change | Comments Off

CBO's First Cost Estimate of Cap-and-Trade Legislation for the 111th Congress

Friday, June 5th, 2009 by Douglas Elmendorf

CBO just released a cost estimate for the American Clean Energy and Security Act of 2009 (H.R. 2454), which was recently approved by the House Committee on Energy and Commerce. This legislation would make a number of changes in energy and environmental policies largely aimed at reducing emissions of gases that contribute to global warming. The bill would limit (or cap) the quantity of certain greenhouse gases emitted from facilities that generate electricity and from other industrial activities over the 2012-2050 period.

Under the provisions of the bill, the Environmental Protection Agency (EPA) would establish two separate regulatory initiatives known as cap-and-trade programs—one covering emissions of most types of greenhouse gases and one covering hydrofluorocarbons. Both cap-and-trade programs would set a limit on total emissions for each year and would require regulated entities to hold rights, or allowances, to the emissions permitted under that cap. Some of those allowances would be auctioned by the federal government, and the remainder would be distributed at no charge.

Other major provisions of the legislation would:

- Provide energy tax credits or energy rebates to certain low-income families to offset the impact of higher energy-related prices from the cap-and-trade programs;
- Require certain retail electricity suppliers to provide a minimum percentage of their electricity sales with electricity generated by facilities that use qualifying renewable fuels or energy sources;
- Establish a Carbon Storage Research Corporation to support research and development of technologies related to carbon capture and sequestration;
- Increase, by $25 billion, the aggregate amount of loans Department of Energy is authorized to make to automobile manufacturers and component suppliers under the existing Advanced Technology Vehicle Manufacturing Loan Program;
- Establish a Clean Energy Deployment Administration within the Department of Energy, which would be authorized to provide direct loans, loan guarantees, and letters of credit for clean energy projects;
- Authorize the Department of Transportation to provide individuals with vouchers to acquire new vehicles that achieve greater fuel efficiency than the existing qualifying vehicles owned by the individuals; and
- Authorize appropriations for various programs.

CBO and the Joint Committee on Taxation (JCT) estimate that over the 2010-2019 period enacting this legislation would:

- Increase federal revenues by about $846 billion; and
- Increase direct spending by about $821 billion.

In total, those changes would reduce budget deficits (or increase future surpluses) by about $24 billion over the 2010-2019 period.

In addition, assuming appropriation of the necessary amounts, CBO estimates that implementing H.R. 2454 would increase discretionary spending by about $50 billion over the 2010-2019 period. Most of that funding would stem from spending auction proceeds from various funds established under this legislation. CBO has done extensive work on issues surrounding climate change as I have mentioned in earlier blogs.

Posted in Budget Projections, Climate Change | Comments Off

CBO's Climate Team

Monday, May 11th, 2009 by Douglas Elmendorf

Policymakers' focus on climate change has shaped one of CBO's principal areas of work. Last week, I testified on the distribution of the costs of reducing carbon dioxide (CO_2) emissions through a cap-and-trade system, and CBO issued a report on the potential impacts of climate change. Those are but the most recent contributions to CBO's growing body of research on climate change issues, which includes work on the effect of climate change on the United States, options for reducing greenhouse-gas emissions, the effect of those options on different segments of our society, and the effect of proposed legislation on the federal budget. All of CBO's work on climate issues can be found on CBO's Web site under the special section for climate change.

The publication of those products provides me with an opportunity to introduce to you the dedicated staff of budget analysts and economists at CBO who work on climate issues. Analyzing the broad set of issues surrounding climate change truly requires a team effort that draws on a diverse set of skills and professional experiences. Most of the formal training of the members of the climate team is in public policy analysis and economics. That formal training has been supplemented by many years of experience following developments in climate science, analyzing different policy options, and understanding the impacts of climate policy on different industries and parts of our economy. The members of the team are:

Bruce Arnold
David Austin
Kim Cawley
Juan Contreras
Bob Dennis
Terry Dinan
Justin Falk
Ron Gecan
Teri Gullo
Dan Hoople
Joseph Kile
Rob Johansson
Mark Lasky
Susanne Mehlman
Ryan Miller
David Moore
Kevin Perese

Amy Petz
Frank Sammartino
Bob Shackleton
Natalie Tawil
Philip Webre
David Weiner

Posted in About CBO, Climate Change | Comments Off

Testimony: The Distribution of Revenues from a Cap-and-Trade Program for Carbon Dioxide Emissions

Thursday, May 7th, 2009 by Douglas Elmendorf

I testified this morning before the Senate Finance Committee on the distribution of revenues from a cap-and-trade program for carbon dioxide emissions. My comments emphasized these points:

A cap-and-trade program would lead to higher prices for energy and energy-intensive goods, which would provide incentives for households and businesses to use less energy and to develop energy sources that emit less carbon dioxide. Higher relative prices for energy would also shift income among households at different points in the income distribution and across industries and regions of the country. Policymakers could counteract those income shifts by using the revenues from selling emission allowances to compensate certain households or businesses, or by giving allowances away.

In distributing the value of the allowances, policymakers have a wide range of options but face trade-offs. For example:

- If allowances were auctioned, some of the revenue could be used to fund climate-related research and development. This approach might reduce the cost of transitioning from a high carbon emissions economy, but it would not provide any immediate help to affected industries or households.
- Instead, auction revenue could be used to reduce existing taxes on capital or labor. This could lessen the overall economic cost of restricting emissions but would do little to offset the burden that higher prices would impose on certain industries or households.
- A different approach is to use the revenue to give rebates to low-income households, perhaps using the tax system. This would lessen the burden on these households but not trim economy-wide costs.
- Alternatively, allowances could be given away for free to certain industries. Giving away allowances is generally equivalent to auctioning the allowances and giving the proceeds to the same firms. Giving allowances to energy-intensive manufacturers would not, by itself, hold down the price of their output, which would rise to reflect the private market value of the allowances. The result could be windfall profits for these firms, which would tend to benefit higher-income households who own most stocks. However, if receipt of free allowances was tied to future production or employment, then prices would not rise as much as otherwise. At the same time, because these firms would not reduce emissions as much as they would have without free allowances, other sectors of the economy would have to reduce emissions by a larger amount to meet the overall cap.

Posted in Climate Change | Comments Off

Potential Impacts of Climate Change in the United States

Monday, May 4th, 2009 by Douglas Elmendorf

Human activities around the world—primarily fossil fuel use, forestry, and agriculture—are producing growing quantities of emissions of greenhouse gases, other gases, and particulates and are also greatly altering the Earth's vegetative cover. A strong consensus has developed in the expert community that if allowed to continue unabated, the accumulation of those substances in the atmosphere and oceans, coupled with widespread changes in patterns of land use, will have extensive, highly uncertain, but potentially serious and costly impacts on regional climate and ocean conditions throughout the world.

Today CBO released a paper presenting an overview of the current understanding of the impacts of climate change in the United States. CBO cannot independently evaluate the relevant scientific research, so our paper draws from numerous published sources to summarize the current state of climate science and provides a conceptual framework for addressing climate change as an economic concern. The paper was reviewed by several knowledgeable external reviewers and, as with all CBO analysis, makes no recommendations.

The paper discusses potential impacts on the physical environment (temperature, precipitation, severe storms, ocean currents, climate oscillations. sea level, and ocean acidification); biological systems (ecosystems and biological diversity, agriculture, forestry, and fisheries); and the economy and human health (water supply, infrastructure, human health, and economic growth).

The paper emphasizes the wide range of uncertainty about the magnitude and timing of impacts and the implications of that uncertainty for the formulation of effective policy responses. Uncertainty arises from several sources, including limitations in current data, imperfect understanding of physical processes, and the inherent unpredictability of economic activity, technological innovation, and many aspects of the interacting components (land, air, water and ice, and life) that make up the Earth's climate system. This does not imply that nothing is known about future developments, but rather that projections of future changes in climate and of the resulting impacts should be considered in terms of ranges or probability distributions. For example, some recent research suggests that the median increase in average global temperature during the 21st century will be in the vicinity of 9° Fahrenheit if no actions are taken to reduce the growth of greenhouse-gas emissions. However, warming could be much less or much greater than that median level, depending on the growth of emissions and the response of the climate system to those emissions.

Given current uncertainties, crafting a policy response to climate change involves balancing two types of risks: the risks of limiting emissions to reach a temperature target and experiencing much more warming and much greater impacts than expected versus the risks of incurring costs to limit emissions when warming and its impacts would, in any event, have been less severe than anticipated. Climate policies thus have a strong element of risk management: Depending on the costs of doing so, society may find it economically sensible to invest in reducing the risk of the most severe possible impacts from climate change even if their likelihood is relatively remote. In particular, the potential for unexpectedly severe and even catastrophic outcomes, even if unlikely, would justify more stringent policies than would result from simply balancing the costs of reducing emissions against the benefits associated with the expected or most likely resulting degree of warming. At the same time, the uncertainties in the link between emissions and climate change mean that even rigid quantitative targets are not likely to achieve a specific warming target. Uncertainties may thus justify flexible mechanisms even though they may simultaneously justify relatively stringent policies.

The report was written by Bob Shackleton. He has been at CBO for the past 10 years and working on climate issues here and elsewhere for nearly 20 years. Bob holds a Ph.D. in economics from the University of Maryland. In addition to his interest in climate issues, he satisfies his intellectual curiosity through a wide variety of pursuits including publishing original scholarly research on the history of American dialects and studying quantum mechanics in his free time. In short, he is a true geek . . .

Posted in Climate Change | Comments Off

Estimating the Costs of Reducing Greenhouse-Gas Emissions

Monday, April 27th, 2009 by Douglas Elmendorf

The 111th Congress is taking up the issue of addressing the risks associated with climate change, a task that would entail the regulation of emissions of a variety of greenhouse gases from a variety of sources. The Environmental Protection Agency estimates that, in 2006, households and businesses in the United States emitted nearly 7.1 billion metric tons of carbon dioxide equivalent of greenhouse gases. Those emissions were partially offset by the net absorption of roughly 900 million metric tons of carbon dioxide by the nation's forests and soils.

Several different approaches, or combinations of approaches, could be used to manage emissions, including direct regulations, cap-and-trade restrictions, and taxes that would directly raise the price of emitting gases. A program based on such approaches could be used to regulate any or all of those emissions.

CBO has previously produced several estimates of the budgetary impact of policies designed to mitigate emissions of greenhouse gases and will produce additional estimates during the current Congress. To do so, CBO undertakes a detailed analysis of the specific provisions of the legislation. In particular, it must estimate the marginal, or incremental, cost of reducing emissions of a number of different greenhouse gases at various levels of mitigation and at different points in the future.

On Friday, CBO released a paper describing the methodology that it uses to estimate the costs of mitigating emissions. In preparing its estimates, CBO uses projections of mitigation costs that, by construction, are in the middle of the range of estimates produced by current state-of-the-art energy-economy models. CBO can use its approach to calculate the amount of emissions generated at a given price or tax, or to determine the price or tax required to achieve a given emissions target.

The methodology involves several steps. CBO first projects a base case that serves as a marker against which to measure the effects of the proposed policies; that base case encompasses projections of future greenhouse-gas emissions and future prices of fossil fuels, electricity, and other products and services closely associated with such emissions—all assuming no new federal policies to control those emissions. For its base-case projections, CBO relies primarily on projections from the Energy Information Administration of the Department of Energy.

Then, CBO estimates how firms and households will respond to the proposed regulatory program. In the case of a cap-and-trade system, CBO determines how the proposals would affect the prices of emission allowances, and estimates how those allowance prices would filter through to prices of fuels and other emission-intensive products, affecting the aggregate demand for such goods and services.

CBO draws on a variety of sources to calculate how sensitive emissions are likely to be to changes in the allowance price. That sensitivity is, in effect, an elasticity of emissions with respect to the price. (An

elasticity is a measure of the response of one variable to changes in another; for example, the elasticity of household demand for electricity measures how much an increase in the price of electricity would reduce households' electricity consumption.) To develop its measures of price sensitivity, CBO applies six different models, available from government agencies, academic institutions, and other researchers, that represent the current state of the art.

CBO's estimate implicitly includes the sensitivity of end-use energy demand to changes in allowance prices as well as the amount of substitution that might occur among energy sources. For example, rising prices for fossil fuels would lead electric utilities to substitute some sources for others, by using more natural gas or wind and using less coal to generate electricity, but would also lead households and firms to consume less electricity. Both types of responses are implicitly built into CBO's estimates.

Posted in Climate Change, Energy | Comments Off

Ethanol, Food Prices, and Greenhouse-Gas Emissions

Wednesday, April 8th, 2009 by Douglas Elmendorf

Over the past several years, spurred by both rising gasoline prices and long-standing subsidies for producing ethanol, the use of ethanol as a motor fuel in the United States has grown at an annual average rate of nearly 25 percent. U.S. consumption of ethanol last year exceeded 9 billion gallons–a record high. CBO released a paper today that discusses the relationship between ethanol, greenhouse-gas emissions, food prices, and federal spending on nutrition programs.

Most ethanol in the United States is produced from domestically grown corn, and the rapid rise in the fuel's production and usage means that roughly one-quarter of all corn grown in the U.S. (nearly 3 billion bushels) is now used to produce ethanol. The demand for corn for ethanol production has exerted upward pressure on corn prices and on food prices in general. CBO estimates that the increased use of ethanol accounted for about 10 percent to 15 percent of the rise in food prices between April 2007 and April 2008.

In turn, increases in food prices will boost federal spending for mandatory nutrition programs such as the Supplemental Nutrition Assistance Program (SNAP, formerly known as Food Stamps) and the school lunch program by an estimated $600 million to $900 million in fiscal year 2009. The Special Supplemental Assistance Program for Women, Infants, and Children—better known as WIC—is a discretionary program that provides a specific basket of goods to recipients rather than a set cash benefit, so changes in food prices in 2008 had an immediate impact on costs for the program. Under the assumption that the effects are much the same, increased production of ethanol would have added less than $75 million in fiscal year 2008 to the cost of serving the same number of WIC participants as in 2007.

Last year the use of ethanol reduced gasoline usage in the United States by about 4 percent and greenhouse-gas emissions from the transportation sector by less than 1 percent. The future impact of ethanol on greenhouse-gas emissions is unclear. Research suggests that in the short run, the production, distribution, and consumption of ethanol will create about 20 percent fewer greenhouse gas emissions than the equivalent processes for gasoline. In the long run, if increases in the production of ethanol led to a large amount of forests or grasslands being converted into new cropland, those changes in land use could more than offset any reduction in greenhouse-gas emissions—because forests and grasslands naturally absorb more carbon from the atmosphere than cropland absorbs. In the future, the use of cellulosic ethanol, which is made from wood, grasses, and agricultural plant wastes rather than corn,

might reduce greenhouse-gas emissions more substantially, but current technologies for producing cellulosic ethanol are not yet commercially viable.

Posted in Climate Change, Energy | Comments Off

« Older Entries
Newer Entries »

- **About Us**

Director's Bio

CBO Web Site

Recent Publications

Upcoming Events

RSS

blog@cbo.gov

- **Archives**

  - April 2010
  - March 2010
  - February 2010
  - January 2010
  - December 2009
  - November 2009
  - October 2009
  - September 2009
  - August 2009
  - July 2009
  - June 2009
  - May 2009
  - April 2009
  - March 2009
  - February 2009
  - January 2009

- December 2008
- November 2008
- October 2008
- September 2008
- August 2008
- July 2008
- June 2008
- May 2008
- April 2008
- March 2008
- February 2008
- January 2008
- December 2007

Categories

- About CBO
- Agriculture
- Budget Projections
- Climate Change
- Defense
- Education
- Energy
- Federal Mandates
- Health
- Housing
- Immigration
- Infrastructure and capital
- Iraq and Afghanistan
- Labor
- Long-Term Budgetary Issues
- Macroeconomic Analysis
- Microeconomic Analysis
- Social Security
- Tax
- Uncategorized