
# Greenhouse Gas Legislation: Summary and Analysis of H.R. 2454 as Reported by the House Committee on Energy and Commerce

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# Summary

H.R. 2454, the American Clean Energy and Security Act of 2009, was introduced May 15, 2009, by Representatives Waxman and Markey, and was subsequently modified (both technical and substantive changes) and ordered reported by the House Committee on Energy and Commerce on May 21, 2009. The bill was reported (amended) June 5 (H.Rept. 111-137, Part I). Among the major provisions of the bill are the following:

H.R. 2454 contains provisions that would amend the Clean Air Act to establish a cap-and-trade system designed to reduce U.S. greenhouse gas emissions 17% below 2005 levels by 2020 and 83% below 2005 levels by 2050. The market-based approach would establish an absolute cap on the emissions and would allow trading of emissions permits ("allowances"). The bill achieves its broad coverage through an upstream compliance mandate on petroleum and most fluorinated gas producers and importers, and a downstream mandate on electric generators, industrial sources, and natural gas local distribution companies (LDCs). The bill allocates a substantial percentage of the allowances for the benefit of energy consumers and low-income households. As the program proceeds through the mid-2020s it shifts to more government auctioning with most of the proceeds returned to households. The bill's allocation scheme includes free allowance allocations to energy-intensive, trade-exposed industries, merchant coal-fired electric generators, and petroleum refiners. An important cost control mechanism in the cap-and-trade program is the availability of domestic and international offsets.

The bill contains energy efficiency provisions that cover grants, standards, rebates and other programs for buildings, lighting and commercial equipment, water-using equipment, wood stoves, industrial equipment, and healthcare facilities.

H.R. 2454 contains several provisions related to vehicles and fuels, including incentives to produce plug-in vehicles and other advanced technology vehicles. Three percent of allowances from the greenhouse gas cap-and-trade program would be allocated to the automotive sector to provide grants to refit or establish plants to build plug-ins and other advanced vehicles. The bill would also establish a "cash-for-clunkers" program, providing new vehicle purchasers and lessees with vouchers worth up to $4,500 for a new, more efficient vehicle to replace an older, less efficient vehicle, and directs the Environmental Protection Agency (EPA) to establish greenhouse gas emissions standards for various transportation sectors.

The bill requires EPA to develop a unified national strategy for addressing the key legal and regulatory barriers to deployment of commercial scale carbon capture and sequestration.

The legislation would amend the Public Utility Regulatory Policies Act of 1978 (PURPA) to create an integrated energy efficiency and renewable electricity standard starting in 2011, requiring retail electricity suppliers to meet 20% of their electricity demand through renewable energy sources and energy efficiency by 2020.

The bill provides for smart grid technologies, including products that can be equipped with smart grid capability, requirements for electric power retailers to reduce their peak loads using smart grid and other energy efficient technologies, and requirements that power suppliers ensure that utility smart grid systems will be compatible with plug-in electric drive vehicles.

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# Introduction and Overview of Legislation

H.R. 2454, the American Clean Energy and Security Act of 2009, was introduced May 15, 2009, by Representatives Waxman and Markey, and was subsequently modified (both technical and substantive changes) and ordered reported by the House Committee on Energy and Commerce on May 21, 2009. The bill was reported (amended) June 5 (H.Rept. 111-137, Part I). The four titles of the legislation cover clean energy, energy efficiency, reducing global warming pollution, and transitioning to a clean energy economy. H.R. 2454 would establish a cap-and-trade system designed to reduce U.S. greenhouse gas emissions; the market-based approach would establish an absolute cap on the emissions from covered entities and would allow trading of emissions permits ("allowances").

Among the many provisions contained in the bill, several of the major provisions are summarized in this overview.

Following the overview, this report contains a section-by-section summary of H.R. 2454 as reported by the Committee, and interpretive or informative commentary for some sections, when appropriate.

## Renewable Electricity Standard

The legislation would amend the Public Utility Regulatory Policies Act of 1978 (PURPA) to create an integrated energy efficiency and renewable electricity standard starting in 2011, requiring retail electricity suppliers to meet 20% of their electricity demand through renewable energy sources and energy efficiency by 2020. Under the standard, each retail electricity supplier with annual sales of 4 million megawatt-hours (mwh) or more would be required to submit Renewable Electricity Credits (RECs) equal to at least three-quarters of its annual combined target. One REC would be awarded for each mwh of renewable energy generated from renewable energy resources such as wind, solar, geothermal, marine or hydrokinetic, biomass, landfill gas, or qualified hydropower (as defined in Sec. 101).

RECs could be traded or banked, but would be retired after being submitted in proof of compliance. "Distributed generation"—small-scale, non-combustion power production located at consumer sites—would qualify for three RECs for each mwh of eligible renewable electricity. Funds collected from alternative compliance payments and civil penalties for non-compliance would be redistributed annually to help deploy renewable energy technologies and help cost-effective energy efficiency programs. In establishing regulations for this program, the Secretary of Energy would be required, to the extent practicable, to incorporate and preserve best practices of existing state-level renewable electricity standards and cooperate with states on minimizing administrative costs and burdens.

Retail electric suppliers would be required to submit an amount of federal renewable electricity credits and demonstrated total annual electricity savings equal to the annual combined targets, as shown in the following schedule for each year:

2012 and 2013: 6%
2014 and 2015: 9.5%
2016 and 2017: 13%
2018 to 2019: 16.5%
2020 through 2039: 20%

Generally, a maximum of 25% of a retailer's combined efficiency and renewable energy target could be met with energy efficiency. This can include energy saved by the use of high efficiency combined heat and power plants,[1] high efficiency fuel cells,[2] solar water heating, and solar light pipe[3] technology.

However, state governors could petition the Federal Energy Regulatory Commission (FERC) to increase a state's efficiency percentage for retailers up to 40%.

FERC would be required to set detailed regulations for the standards and protocols that must be used to verify the amount of energy efficiency savings achieved by an electricity retailer. The verification must be performed by an independent third party. Retailers must submit annual reports to FERC on verified savings, which FERC is required to review. If FERC concludes that some of a retailer's savings are overstated it could exclude those savings.

Under the provisions of the bill, a state would be able to petition FERC to delegate the verification authority to the state, including the option of alternative verification procedures. In such a case, FERC would be required to review the implementation of review authority delegated to a state at least once every four years, and can revoke the delegation if it concluded the implementation was faulty.

The bill would allow bilateral contracts for the sale of verified electricity savings, which could be used by the buyer to meet its annual target. An electric retailer could buy only savings that were achieved within the retailer's own state. The bill would not provide for a system for wide-scale trading of energy efficiency credits, as it does for renewable electricity credits.

A retailer could choose to meet its annual target in whole or part with an alternative compliance payment equal to $25 per megawatt-hour (inflation-adjusted from a base of 2009) for each megawatt-hour of the target it would not intend to meet with either renewable electricity credits or energy efficiency. A retailer that failed to comply with its annual target would be required to pay a civil penalty equal to the shortfall amount (in megawatt-hours) times twice the alternative compliance payment (i.e., $50 per megawatt-hour, inflation-adjusted).

The definition of renewable electricity is augmented by adding other qualifying energy resources (i.e., landfill gas, wastewater treatment gas, coal mine methane, and qualified waste-to-energy) to the list of renewable energy resources.

[1] Combined heat and power or CHP (also referred to as cogeneration) is an integrated process to produce electricity and process heat for industrial or commercial use. Because the CHP plant makes use of the waste heat lost in a stand-alone power plant or steam plant, it is a much more energy efficient facility. Many types of CHP plants are in commercial operation.

[2] Fuel cells are a power technology that relies on chemical reactions, without combustion, to produce electricity. Fuels cells are beginning to see some commercial application.

[3] A solar light pipe is a tubular structure that uses, for example, prisms to funnel daylight into a structure to supplement or replace electric lighting.

Renewable energy resources would be largely technologies still under development. Additional technologies developed in the timeframe under consideration would need to be evaluated for inclusion as eligible resources under the definition.

The definition of renewable biomass would be revised to allow the use of thinning materials and invasive species removed from the National Forest system and public lands.

It is not known how the renewable electricity standard (RES) might complement climate change mitigation measures in the legislation. As introduced, the bill would have mandated an RES of 25% by 2025. At current requirements of 20% by 2025 (which could be lessened to 12% by energy efficiency goals), overall GHG reductions achieved could be measurably less, depending on how energy efficiency gains are realized.

## Geologic Sequestration of Carbon Dioxide

H.R. 2454 would require the EPA Administrator to submit a report to Congress, within 120 days of enactment, detailing a unified national strategy for addressing the key legal and regulatory barriers to deployment of commercial scale carbon capture and sequestration. The bill requires two other reports from studies examining: (1) how, and under what circumstances, the environmental statutes for which EPA has responsibility would apply to $CO_2$ injection and geologic sequestration activities, due within 12 months of enactment; and (2) the legal framework for geologic sequestration sites, including existing federal environmental statutes, state environmental statutes, and state common law, due within 18 months of enactment.

The legislation would amend the Safe Drinking Water Act (SDWA) by inserting a provision directing the EPA Administrator to promulgate, within one year of enactment, regulations for the development, operation, and closure of carbon dioxide geologic sequestration wells, and to take into consideration the ongoing SDWA rulemaking regarding these wells. It would also amend Title VIII of the Clean Air Act and establish a coordinated certification and permitting process for geologic sequestration sites. Within two years of enactment, the Administrator would be required to promulgate regulations to protect human health and the environment by minimizing the risk of atmospheric release of carbon dioxide injected for geologic sequestration, including enhanced hydrocarbon recovery combined with geologic sequestration. This provision broadens the scope of regulatory authority beyond protecting underground sources of drinking water under SDWA to protecting against atmospheric releases of $CO_2$ under the Clean Air Act.

H.R. 2454 would authorize a Carbon Storage Research Corporation to establish and administer a program to accelerate the commercial availability of carbon dioxide capture and storage technologies and methods by awarding grants, contracts, and financial assistance to electric utilities, academic institutions, and other eligible entities. The corporation would be established by a referendum if providers of at least two-thirds of the total quantity of fuel-based electricity delivered to retail consumers vote for approval. If 40% or more of state regulatory authorities were to submit written notices of opposition to the creation of the corporation, the corporation would not be established. If established, the corporation would levy an assessment on distribution utilities for all fossil fuel-based electricity delivered to retail customers, and would adjust the assessment rates to generate between $1.0 billion and $1.1 billion per year.

The bill would amend Title VII of the Clean Air Act to require that the EPA Administrator promulgate regulations to distribute emission allowances to support the commercial deployment of carbon capture and sequestration technologies in both electric power generation and industrial

operations. Among other eligibility requirements, it would require that the owner or operator geologically sequester captured carbon dioxide or convert it to a stable form that can be safely and permanently sequestered.

The legislation would also amend CAA Title VIII by adding performance standards for new coal-fired power plants and, in some instances, for existing plants retrofitted with carbon capture and sequestration technology. Covered electric generating units (EGUs) that are initially permitted on or after January 1, 2020, would be required to reduce their annual emissions of carbon dioxide by 65%. EGUs initially permitted before January 1, 2020, would need to achieve a 50% reduction.

## Vehicles and Fuels

H.R. 2454 contains several provisions related to vehicles and fuels. Most notably, the bill would provide significant incentives for automakers and parts suppliers to produce plug-in vehicles and other advanced technology vehicles. For example, in early years, 3% of allowances from the greenhouse gas cap-and-trade program would be allocated to the automotive sector to provide grants to refit or establish plants to build plug-ins and other advanced vehicles. Depending on the allowance price in the cap-and-trade system, this allocation could easily be worth billions of dollars each year.

In addition to allowances for advanced vehicle manufacturing, the bill would also establish a "cash-for-clunkers" program. This program would provide new vehicle purchasers and lessees with vouchers worth up to $4,500 for a new, more efficient vehicle to replace an older, less efficient vehicle. The new vehicle would need to be more fuel efficient than the vehicle it replaced, and the older vehicle must be crushed or shredded. The vouchers would cover vehicles purchased between March 31, 2009, and March 30, 2010. The bill authorizes $4 billion for the program.

H.R. 2454 also directs the EPA to establish greenhouse gas emissions standards for various transportation sectors. The bill would require EPA to establish standards for passenger vehicles, heavy-duty vehicles, non-road vehicles (including marine vessels and locomotives) and aircraft.

In addition, the bill would expand the definition of "renewable biomass" for the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 and expanded in the Energy Independence and Security Act of 2007 (EISA). The RFS requires that an increasing amount of biofuels be blended into gasoline and diesel fuel. By 2022, the mandate reaches 36 billion gallons of biofuels. However, the amendments to the RFS in EISA restricted the feedstocks that would qualify as renewable biomass under the RFS, effectively excluding a large potential pool of woody biomass, as well as biomass from federal lands. H.R. 2454 would expand the definition to allow fuel produced from some of these feedstocks to qualify under the RFS.

Not included in the bill is a low carbon fuel standard (LCFS) similar to that established in California. An LCFS would require that fuel suppliers reduce the lifecycle greenhouse gas emissions from motor fuels relative to a baseline year. Such an LCFS would not be an explicit mandate for biofuel use, but would likely promote some biofuels, as well as other low-carbon transportation fuels such as natural gas and electricity produced from renewable resources. An LCFS was part of an earlier draft of the bill, but was not included in the bill as introduced.

## Smart Grid

H.R. 2454 includes several provisions aimed at supporting development and installation of smart grid[4] technologies. The bill would direct the Department of Energy and Environmental Protection Agency to identify products that could be cost-effectively equipped with smart grid capability. An example would be a dishwasher that could wirelessly communicate with a "smart meter" installed by a utility in a home. This linkage would allow the utility to temporarily stop operation of the dishwasher when electricity was scarce or expensive (assuming the homeowner had agreed to the procedure). The legislation would also direct the Federal Trade Commission to initiate a rulemaking to determine whether smart grid information, such as potential dollar savings to the consumer, should be added to Energy Star product labels. (Energy Star is an existing federal program for labeling energy efficient products.)

The legislation would establish requirements for electric power retailers to reduce their peak loads using smart grid and other energy efficient technologies; it would modify an energy efficiency public information program authorized by the Energy Policy Act of 2005 (EPACT05) to make it into a smart grid and energy efficiency information program authorized through 2020. H.R. 2454 would also modify an EPACT05 energy efficiency appliance rebate program to add appliances with smart grid capabilities. Authorized funding would be increased from $50 million annually to $100 million, and the authorization would be extended to run through FY2015.

Additionally, H.R. 2454 would require state regulatory authorities and self-regulating power suppliers (such as municipal utilities) to ensure that utility smart grid systems would be compatible with plug-in electric drive vehicles.

## Energy Efficiency

The bill includes a variety of energy efficiency provisions that cover grants, standards, rebates and other programs for buildings, lighting and commercial equipment, water-using equipment, wood stoves, industrial equipment, and healthcare facilities.

Two new programs would be established that aim to facilitate the use of energy efficiency and renewable energy programs to more directly support the goals of curbing greenhouse gas emissions to mitigate climate change. First, DOE would be required to create a State Energy and Environment Development (SEED) program, which allows each state to collect major federal energy grant appropriations (Weatherization, State Energy, Efficiency Block Grants, and LIHEAP) into a common fund designed to support clean energy, energy efficiency, and climate change mitigation. Second, EPA would be directed to implement a legislated carbon allowance distribution program that would be used to help support several energy efficiency and renewable energy programs.

Building energy efficiency improvements would be addressed by expanded responsibilities at DOE and EPA. DOE would be required to regularly update its model building energy codes,

[4] The "smart grid" is intended to give the power grid some of the characteristics of a computer network, in which information concerning, and control of, power supply and demand will flow between and be shared by individual customers and utility control centers. The smart grid primarily involves the development of software and small-scale technology (e.g., smart meters for homes and businesses that would interface with grid controls) rather than construction of new transmission lines.

which are available for states to adopt and adapt to local circumstances. Further, DOE would be directed to establish a rebate program designed to encourage replacement of manufactured homes owned by low-income families. Also, DOE would be required to develop a program that supports efficiency retrofits of existing commercial buildings. EPA, in parallel, would be required to develop a program to support efficiency retrofits of existing residential buildings. Also, EPA would be directed to establish a building energy efficiency labeling program that would be similar to its existing energy labeling program for cars and appliances.

For lighting and commercial equipment, new efficiency standards would be set by law and some new procedures and programs would be put in place. Lighting efficiency standards would be set for the niche categories of outdoor luminaires, outdoor high output lamps, portable light fixtures, and incandescent reflector lamps. Commercial equipment standards would be legislated for the niche categories of water dispensers, commercial hot food holding cabinets, portable electric spas, and commercial furnaces. Also, in general, existing criteria for setting appliance efficiency standards would be expanded to include criteria related to greenhouse gas emissions and other factors. Further, DOE would be directed to create an incentive program to encourage consumer purchases of the most energy-efficient appliances, while also providing an incentive to remove the least efficient appliances from commercial use. Cost-effectiveness would be explicitly established as one of the purposes of EPA's Energy Star program.

Water use efficiency improvements would be addressed by three provisions. First, EPA's WaterSense program, a voluntary labeling program to reduce water use, would be given statutory authority. Second, federal agencies would be directed to use WaterSense-labeled and DOE Federal Energy Management Program (FEMP)-designated water-using products and services. Third, EPA would be required to provide funds to support state rebate or voucher programs for consumer purchases of residential water-efficient products and services.

New residential wood stoves and pellet stoves would have to meet an environmental performance standard set by EPA. Further, EPA would be authorized to provide funds to state and local governments, American Indian tribes, Alaskan Native villages, and certain nonprofit organizations to replace stoves that do not meet the standards. To address a concern that technological improvements gradually erode the true energy efficiency of products identified with the EPA Energy Star label, EPA would be required to establish a grading system that ranges from "A" (most efficient) to "F" (least efficient) and periodically test products to verify compliance.

Industrial energy efficiency would be addressed by four provisions. First, DOE would be directed to expand an existing industrial standards program to include industrial plant energy efficiency certification standards. Second, DOE would be required to establish a monetary award program to spur innovation in the recovery of thermal energy in power plants and industrial facilities. Third, DOE would be directed to assess the electric motor market, identify energy efficiency improvement opportunities, and develop methods to estimate energy and cost savings and certain program impacts. Fourth, DOE would be required to establish a rebate program for purchasers and distributors of energy efficient motors.

Regulation of energy savings performance contracts (ESPCs) for federal agencies would be revised to require that agencies establish competitions for task and delivery orders. Further, the allowable types of energy transactions under ESPCs would be expanded to include thermal forms of renewable energy. Also, onsite renewable energy production would become eligible for helping to meet agency requirements for using renewable energy.

Energy efficiency in public institutions is addressed by three provisions. First, under the Energy Conservation Program for Schools and Hospitals, the list of eligible facilities would be expanded to specifically include not-for-profit hospitals and not-for-profit inpatient health facilities. Further, the authorization for grants would be increased from $1 billion to $2.5 billion annually. Second, the definition of community eligibility for DOE's Energy Efficiency and Conservation Block Grant program would be expanded to include regional groups of small local governments. Third, DOE would be authorized to create a new grant program for nonprofit community development organizations that provide energy efficiency and renewable energy financing for businesses and projects in low-income communities.

A national carbon labeling and disclosure program would be established at EPA, which would likely have some parallels to EPA's existing energy labeling program. DOE would be required to provide affiliated islands (U.S. trust territories) with energy planning and implementation assistance. Each federal agency, in collaboration with OMB, would be required to create an implementation strategy for the purchase and use of energy efficient information and communications technologies, infrastructure, and practices. A national goal would be established to improve energy productivity by at least 2.5% per year from 2012 through 2030.

## Major Cap-and-Trade Provisions

As reported, Title III of H.R. 2454 would amend the Clean Air Act to set up a cap-and-trade system that is designed to reduce GHG emissions from *covered* entities 17% below 2005 levels by 2020 and 83% below 2005 levels by 2050. Covered entities are phased into the program over a four-year period from 2012 to 2016. When the phase-in schedule is complete, the cap would apply to entities that account for 84.5% of U.S. total GHG emissions. By including other provisions contained in the legislation (e.g., a separate cap-and-trade program for hydrofluorocarbons (HFCs)), the World Resources Institute (WRI) estimates that the overall potential net reductions in GHG emissions from H.R. 2454 could range from 28%-33% below 2005 levels in 2020 and 75%-81% in 2050.[5]

The market-based approach adopted by H.R. 2454 would establish an absolute *cap* on the emissions from covered sectors and would allow *trading* of emissions permits ("*allowances*") among covered and non-covered entities.[6] The bill achieves its broad coverage through an *upstream* compliance mandate on petroleum and most fluorinated gas producers and importers, and a *downstream* mandate on electric generators, industrial sources, and natural gas local distribution companies (LDCs).[7] Generally, the emissions cap would limit greenhouse gas emissions from entities that produce or import more than 25,000 metric tons annually (carbon dioxide equivalent) of greenhouse gases.

If left unmitigated, any greenhouse gas cap-and-trade program (as well as a carbon tax alternative) would be regressive. In an attempt to mitigate this distributional problem, H.R. 2454 allocates a substantial percentage of the allowances available for the benefit of energy consumers and low-income households. In some cases, these allowances are allocated at no cost to entities,

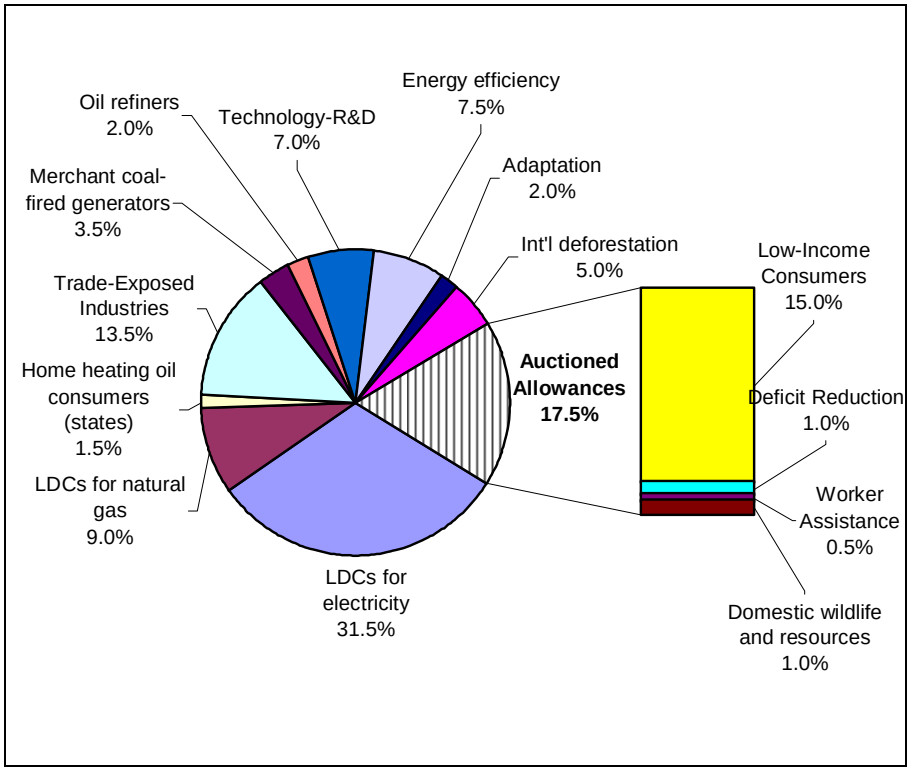
[5] John Larsen and Robert Hellmayr, *Emission Reductions Under the American Clean Energy and Security Act of 2009* (World Resources Institute, May 19, 2009).

[6] See "Common Terms" box for definitions.

[7] Title III sets up a separate cap-and-trade program for hydrofluorocarbons (HFCs).

such as LDCs, with the express purpose of mitigating energy cost increases; in other cases, such as low-income assistance, the allowances are *auctioned* by EPA and the proceeds distributed to eligible recipients. As the program proceeds through the mid-2020s, the energy cost relief, along with other free allocations, are phased out in favor of more government auctioning with most of the proceeds returned to households on a per-capita basis. See **Figure 1** and **Figure 2** for a summary of how emission allowances are distributed in 2016 and 2030, respectively.

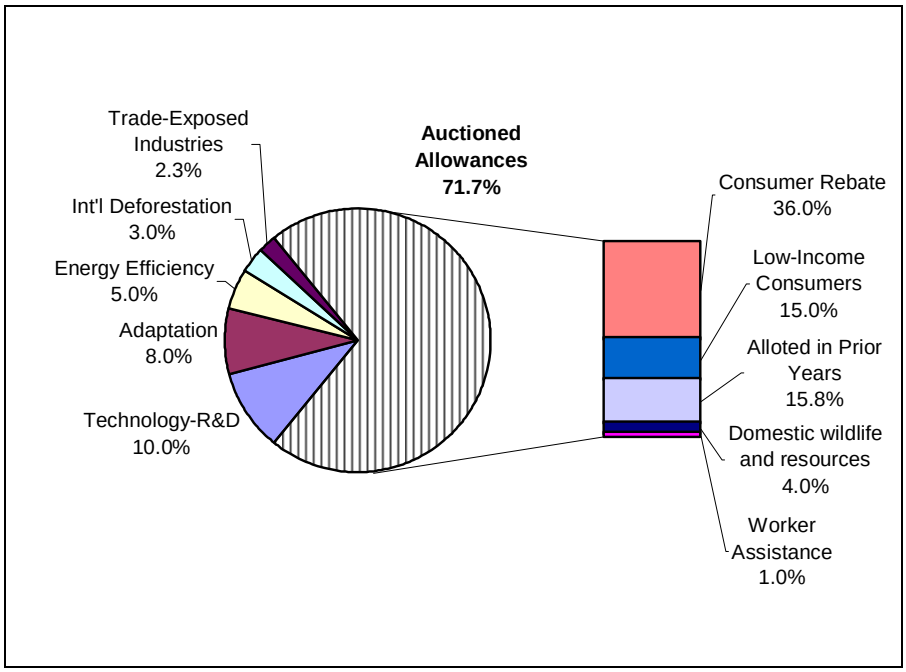
**Figure 1. Simplified Emission Allowance Distribution—2016**




**Source:** Prepared by CRS.

**Notes**: Allotment to local distribution companies (LDCs) would benefit energy consumers.

**Figure 2. Simplified Emission Allowance Distribution—2030**




**Source:** Prepared by CRS.

H.R. 2454's allocation scheme also attempts to smooth the economy's transition to a less carbon-intensive future through free allowance allocations to energy-intensive, trade-exposed industries, merchant coal-fired electric generators, and petroleum refiners. Bonus allotments of allowances are allocated for emission reductions achieved by carbon capture and storage technology. Except for carbon capture and storage, these free allocations of allowances are phased-out by the early 2030s.

Finally, H.R. 2454's allocation scheme attempts to address some of the impacts of climate change by providing allowances to help prevent further tropical deforestation and to fund climate adaptation activities.

Because allowance prices can be volatile, cap-and-trade bills generally provide some mechanisms to address either the potential gyrations, or allowance prices more generally. H.R. 2454 does not have a "safety valve"—an alternative compliance option that permits covered entities to pay an excess emissions fee instead of reducing emissions. Instead, the legislation addresses cost control through five main mechanisms: (1) unlimited banking and limited borrowing, (2) a two-year compliance period, (3) a strategic auction with a reserve price to increase the availability of allowances in the early years of the program, (4) periodic auctions with a reserve price, and (5) broad limits on the use of offsets.

With respect to allowance price volatility, the bill includes two design elements that may dampen volatility to some degree. First, the bill allows entities to borrow (without interest) allowances from the year immediately following the current year, effectively creating a rolling two-year compliance period. Second, EPA is directed to hold strategic reserve auctions. Allowances borrowed from future years and held in a strategic reserve are auctioned off in the early years of the program. This increases the availability of allowances early, but maintains the overall emissions cap. The strategic reserve auction would include a reserve price: $28/allowance in 2012

that would increase annually in 2013 and 2014. Starting in 2015, the reserve price would be 60% above the 36-month rolling average allowance price.

Regular auctions mandated by the bill also have a reserve price: $10 (in 2009 dollars) in 2012, increasing at a real 5% annually. An auction reserve price would help create an allowance price floor, and help dampen allowance price spikes. The auctions, along with the other mechanisms listed above, attempt to bracket volatility. Whether they would work is subject to debate, particularly with respect to short-term price volatility.

With respect to overall cost control, analysis indicates that an important cost control mechanism in the cap-and-trade program is the availability of domestic and international *offsets*. The bill limits the availability of domestic and international offsets to two billion allowances annually—divided equally between domestic and international pools. According to analyses conducted by the Environmental Protection Agency (EPA), the Congressional Budget Office, and CRA International, the availability of these offsets reduces projected allowance prices under the program by half.[8]

Another concern with respect to a cap-and-trade program is potential allowance market abuse and manipulation. The size of a U.S. carbon market could be in the hundreds of billions of dollars, and involve all of the financial instruments, particularly derivatives, that any other commodity market includes. To provide oversight of the newly created carbon allowance market, the bill has detailed provisions for Federal Energy Regulatory Commission oversight of the cash allowance market, and enhanced Commodity Futures Trading Commission (CFTC) oversight of allowance derivatives. With respect to the latter, the bill would remove energy commodities (including carbon allowances) from the category of "exempt commodity" and require that over-the-counter transactions be cleared through a clearing house (a standard feature of a future exchange). In addition the CFTC is required to establish position limits, thus setting ceilings on the number of energy contracts that any person could hold.

Besides the two emission caps created under Title III, the bill contains other provisions in Titles III and IV to reduce greenhouse gas emissions and potential carbon leakage. Among the most important of these provisions are (1) preventing tropical deforestation, (2) performance standards for uncovered entities that emit over 10,000 metric tons annually, (3) a 1.25 offset requirement for international offsets after 2017; and (4) programs designed to reduce potential carbon leakage.

First, H.R. 2454 has a supplemental greenhouse gas reduction program that requires EPA to use some of the allowances available under the cap-and-trade program to fund international projects to reduce deforestation. The goal of the program is to achieve 720 million metric tons of additional emission reductions in 2020 (about 10% of U.S. 2005 emissions), and a total of 6 billion metric tons by 2025 (about equal the U.S. emissions in 1990). If achieved, this would have significant effect on the net emission reductions achieved in the early years of the program, as suggested by the WRI study cited earlier.

[8] U.S. Environmental Protection Agency, EPA Preliminary Analysis of the Waxman-Markey Discussion Draft: The American Clean Energy and Security Act of 2009 in the 111th Congress (April 20, 2009); Congressional Budget Office, Congressional Budget Office Cost Estimate: H.R. 2454, American Clean Energy and Security Act of 2009 (as Ordered Reported by the House Committee on Energy and Commerce) (June 5, 2009); and, CRA International, Impact on the Economy of the American Clean Energy and Security Act of 2009 (H.R. 2454), prepared for the National Black Chamber of Commerce (May 2009).

Second, as noted above, not all greenhouse gas emitting sources are covered by the Title III cap-and-trade programs. Under other provisions of Title III, stationary sources not covered by the Title III caps are potentially subject to greenhouse gas performance standards. WRI estimates that standards for uncapped sources could reduce emissions from such sources by about 115 million metric tons annually.

Third, as reported by the House Energy and Commerce Committee, the cap-and-trade program requires that international offsets submitted for compliance beginning in 2018 be discounted (i.e., it will take 5 offset credits to equal 4 allowances). Depending on the number of international offsets used for compliance after 2017, the discount factor could add up to 375 million metric tons of reductions annually.

Finally, H.R. 2454 attempts to address the issue of carbon leakage.[9] Carbon leakage is a difficult concept to quantify. H.R. 2454 takes two primary approaches to mitigate its potential impact on the net greenhouse gas reduction achieved under the bill. The first is the allocation of allowances at no cost to energy-intensive, trade-exposed industries, as identified above. The second is an international reserve allowance scheme that essentially imposes a shadow allowance requirement on importers of energy-intensive, trade-exposed products, creating a *de facto* tariff. Basically, the scheme would require importers of energy-intensive products from countries with insufficient carbon policies to submit a prescribed amount of "international reserve allowances" or IRAs for their products to gain entry into the United States. Based on the greenhouse gas emissions generated in the production process, IRAs would be submitted on a per-unit basis for each category of covered goods from a covered country.

Under H.R. 2454, the international reserve allowance scheme is contingent on a presidential determination that it is needed, and cannot begin until 2025 at the earliest. Whether this scheme would actually work is unclear. The vast administrative, informational, and analytical resources necessary to implement such a program would create significant issues in any attempt to implement it. Likewise, it is not clear that the potentially severe World Trade Organization (WTO) implications of the provision have been fully exposed and accommodated.

[9] For a full discussion of carbon leakage, see CRS Report R40100, *"Carbon Leakage" and Trade: Issues and Approaches*, by Larry Parker and John Blodgett.

## Common Terms

**Allowance.** A limited authorization by the government to emit 1 metric ton of carbon dioxide equivalent. Although used generically, an *allowance* is technically different from a *credit*. A credit represents a ton of pollutant that an entity has reduced in excess of its legal requirement. However, the terms tend to be used interchangeably, along with others, such as *permits*.

**Auctions.** Auctions can be used in market-based pollution control schemes to allocate some or all of the allowances. Auctions may be used to: (1) ensure the liquidity of the credit trading program; and/or (2) raise (potentially considerable) revenues for various related or unrelated purposes.

**Banking.** The limited ability to save allowances for the future and shift the reduction requirement across time.

**Cap-and-trade program.** An emissions reduction program with two key elements: (1) an absolute limit ("cap") on the emissions allowed by covered entities; and (2) the ability to buy and sell ("trade") those allowances among covered and non-covered entities.

**Coverage.** Coverage is the breadth of economic sectors covered by a particular greenhouse gas reduction program, as well as the breadth of entities within sectors.

**Emissions cap.** A mandated limit on how much pollutant (or greenhouse gases) affected entities can release to the atmosphere. Caps can be either an *absolute cap*, where the amount is specified in terms of tons of emissions on an annual basis, or a *rate-based cap*, where the amount of emissions produced per unit of output (such as electricity) is specified but not the absolute amount released. Caps may be imposed on an entity, sector, or economy-wide basis.

**Greenhouse gases.** The six gases recognized under the United Nations Framework Convention on Climate Change are carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), sulfur hexafluoride ($SF_6$), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). H.R. 2454 adds nitrogen trifluoride ($NF_3$).

**Leakage.** The shift in greenhouse gas (GHG) emissions from an area subject to regulation (e.g., cap-and-trade program) to an unregulated area, so reduction benefits are not obtained. This would happen, for example, if a GHG emitting industry moved from a country with an emissions cap to a country without a cap.

**Offsets.** Emission credits achieved by activities not directly related to the emissions of an affected source. Examples of offsets would include forestry and agricultural activities that absorb carbon dioxide, and reductions achieved by entities that are not regulated by a greenhouse gas control program.

**Revenue recycling.** How a program disposes of revenues from auctions, penalties, and/or taxes. Revenue recycling can have a significant effect on the overall cost of the program to the economy, as well as its effect on income classes.

**Sequestration.** Sequestration is the process of capturing carbon dioxide from emission streams or from the atmosphere and then storing it in such a way as to prevent its release to the atmosphere.

# Title I—Clean Energy

## Subtitle A—Combined Efficiency and Renewable Energy Standard

### Sec. 101. Combined Efficiency and Renewable Energy Standard

| *Summary of section* | *Comments* |
|---|---|
| Amends the Public Utility Regulatory Policies Act of 1978 (PURPA) to create an integrated energy efficiency and renewable electricity standard.<br><br>Establishes a federal Renewable Electricity Standard to promote renewable energy production. Under the standard, each retail electricity supplier with annual sales of 4 million megawatt-hours (mwh) or more must earn or acquire Renewable Electricity Credits (RECs) for a portion of its retail electricity sales. The portion begins at 6% in 2012 and rises to 25% in 2025, remaining at that level through 2039. RECs can be traded or banked, and can be earned by producing electricity from any "renewable energy resource," including wind, solar, geothermal, marine or hydrokinetic, biomass, landfill gas, or qualified hydropower. "Distributed generation"—small-scale, non-combustion power production located at consumer sites—qualifies for three RECs for each mwh of eligible renewable electricity. Up to 20% of the RECs can be provided by complying with the Federal Energy Efficiency Resource Standard in Sec. 611 of the bill. "Alternative compliance" payments can substitute for RECs. A new Renewable Electricity Deployment Fund would collect alternative compliance payments and civil penalties for non-compliance; the funds would be redistributed annually to retail electric suppliers that had submitted the required RECs. In establishing regulations for this program, the Secretary of Energy must, to the extent practicable, incorporate and preserve best practices of existing state-level renewable electricity programs and cooperate with states on minimizing administrative costs and burdens. | The definition of renewable electricity is augmented by adding *Other* qualifying energy resources (i.e., landfill gas, wastewater treatment gas, coalmine methane, and qualified waste-to-energy) to the list of renewable energy resources.<br><br>Renewable energy resources are largely technologies still under development. Additional technologies developed in the timeframe under consideration may need to be evaluated for inclusion as *eligible* resources under the definition.<br><br>"Hybrid" power stations using more than one source of renewable resource (for example, landfill gas and PV on the same site) may need to be included in the definition.<br><br>Renewable biomass definition is revised to allow thinning materials and removed invasive species from the National Forest system and public lands.<br><br>The type of fuel used in a fuel cell determines emissions. For example, fuel cells powered by natural gas will produce more GHGs and other emissions than those which use pure hydrogen as a fuel. Nonetheless, natural gas fuel cells are expected to result in cleaner electricity generation than natural gas-fired in combustion turbines.<br><br>Requiring qualified hydropower installations to result in *no* water surface elevation changes at existing dams may be too restrictive, if continued hydroelectric power production is a goal. A range of water |

| *Summary of section* | *Comments* |
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| The combined target for each year is:<br><br>2012 and 2013: 6%<br>2014 and 2015: 9.5%<br>2016 and 2017: 13%<br>2018 to 2019: 16.5%<br>2020 through 2039: 20%<br><br>Generally a maximum of 25% of a retailer's combined efficiency and renewable energy target can be met with energy efficiency. This can include energy saved by the use of high efficiency combined heat and power plants, high efficiency fuel cells, solar water heating, and solar light pipe technology.<br><br>However, a state Governor can petition the Commission to increase the efficiency percentage for the retailers in his or her state up to 40%.<br><br>FERC is required to promulgate detailed regulations on the standards and protocols that must be used to verify the amount of energy efficiency savings achieved by an electricity retailer. The verification must be performed by an independent third-party. Retailers must submit annual reports to FERC on verified savings, which FERC is to review. If FERC concludes that some of a retailer's savings are overstated it can exclude those savings.<br><br>A state can petition FERC to delegate the Commission's review authority to the state, including the adoption of alternative verification procedures. FERC must review the implementation of review authority delegated to the state at least once every four years, and can revoke the delegation if it concludes the implementation is faulty.<br><br>The bill allows bilateral contracts for the sale of verified electricity savings, which can be used by the buyer to meet its annual target. An electric retailer can only buy savings that were achieved within the retailer's own state. (The bill does not provide for a system for wide-scale trading of energy efficiency credits, as it does for renewable | elevation change per kilowatt-hour of generation may be more appropriate, or alternatively, providing for no "net" degradation of downstream resources, habitats, or existing uses.<br><br>An issue that may have to be addressed is how the renewable electricity standard (RES) can effectively complement climate change mitigation legislation. As introduced, the bill mandated an RES of 25% by 2025. At current requirements of 20% by 2025 (which could be lessened to 12% by energy efficiency goals), overall GHG reductions achieved could be measurably less depending on how energy efficiency gains are realized.<br><br>A common standard for federal and state renewable energy certificates could allow for a stratified but harmonized market to develop for RECs. Advantages and disadvantages with regard to eventual fungibility between the two as commodities could be considered.<br><br>The program includes limited interchangeability between energy efficiency and renewable electricity to meet the savings targets established by the amendment. This interchangeability responds to concerns that some regions of the country do not have sufficient renewable energy resources (such as the lack of wind power potential in the Southeast) to meet a pure renewable electricity standard.<br><br>Combined heat and power or CHP (also referred to as cogeneration) is an integrated process to produce electricity and process heat for industrial or commercial use, such as space heating. Because the CHP plant makes use of the waste heat lost in a stand-alone power plant or steam plant, it is much more energy efficient than those types of facilities. Many types of CHP plants are in commercial operation.<br><br>The fuel cell is a generating technology that relies on chemical reactions, without |

| *Summary of section* | *Comments* |
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| electricity credits.)<br><br>A retailer can choose to meet its annual target in whole or part with an alternative compliance payment equal to $25 per megawatt-hour (inflation-adjusted from a base of 2009), for each megawatt-hour of the target it does not intend to meet with either renewable electricity credits or energy efficiency. A retailer that fails to comply with its target must pay a civil penalty equal to the shortfall amount (in megawatt-hours) times double the alternative compliance payment (i.e., $50 per megawatt-hour, inflation adjusted). | combustion, to produce electricity. Fuel cells are a developmental technology.<br><br>A solar light pipe is a tubular structure that uses, for example, prisms to funnel daylight into a structure to supplement or replace electric lighting. |

### Sec. 102. Clarifying State Authority to Adopt Renewable Energy Incentives

| *Summary of section* | *Comments* |
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| Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) is amended by confirming state regulatory or legislative authority to set the rates for sales of electric energy from a renewable energy facility under a state-approved production incentive program. | The provision affirms state authority to set rates for sales of renewable electricity produced under a *state-approved* incentive program. The clarification may be intended to preclude conflict with other PURPA requirements for small power generation "Qualifying Facilities" which place rate authority for electricity sales under the Federal Energy Regulatory Commission. |

## Subtitle B—Carbon Capture and Sequestration

### Sec. 111. National Strategy

| *Summary of section* | *Comments* |
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| Within 120 days of enactment, the Administrator of the U.S. Environmental Protection Agency (EPA), in consultation with the Secretary of Energy and the heads of other relevant federal agencies as the President may designate, must submit to Congress a report setting forth a unified and comprehensive strategy to address the key legal and regulatory barriers to the commercial-scale deployment of carbon capture and sequestration. | |

### Sec. 112. Regulations for Geologic Sequestration Sites

| *Summary of section* | *Comments* |
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| Requires a coordinated certification and permitting process for geologic sequestration sites, considering all relevant statutory authorities. In establishing such an approach, the Administrator shall take into account, and reduce redundancy with, the requirements of the Safe Drinking Water Act and, to the extent practicable, reduce the burden on certified entities and implementing authorities.<br><br>Not later than two years after enactment, the Administrator is to promulgate regulations to protect human health and the environment by minimizing the risk of atmospheric release of carbon dioxide injected for geologic sequestration, including enhanced hydrocarbon recovery combined with geologic sequestration.<br><br>Not later than two years after enactment, and at three-year intervals thereafter, the Administrator is to deliver to the relevant congressional committees a report on geologic sequestration in the United States, and to the extent relevant, other countries in North America.<br><br>Amends the Safe Drinking Water Act by inserting a provision directing the EPA Administrator to promulgate regulations for the development, operation, and closure of carbon dioxide geologic sequestration wells. The regulations are to include requirements for maintaining evidence of financial responsibility for emergency and remedial response, well-plugging, site closure, post-injection site care, and related activities. | Sec. 112 amends Title VIII of the Clean Air Act, and establishes the certification and permitting process under the authority of the Act. This provision broadens the scope of regulatory authority for CCS beyond the Safe Drinking Water Act (SDWA) by requiring the EPA Administrator to promulgate regulations to protect atmospheric releases of $CO_2$. EPA proposed a new rule on July 25, 2008, to protect underground sources of drinking water under authority of the SDWA Underground Injection Program. Sec. 112 requires EPA to take into consideration the ongoing SDWA rulemaking, but also requires the Administrator to promulgate regulations under SDWA for $CO_2$ geologic sequestration wells within one year after enactment. |

### Sec. 113. Studies and Reports

| *Summary of section* | *Comments* |
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| Requires a study of the legal framework for geologic sequestration sites by a task force composed of an equal number of subject matter experts, nongovernmental organizations with expertise in environmental policy, academic experts with expertise in environmental law, state | The first study would examine several of the legal framework issues that some observers contend may impede the deployment of commercial scale CCS, including liability and financial responsibilities post-closure, and property rights associated with the |

| *Summary of section* | *Comments* |
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| officials with environmental expertise, representatives of state attorneys general, and members of the private sector. The task force is to conduct a study of existing federal environmental statutes, state environmental statutes, and state common law that apply to geologic sequestration sites for carbon dioxide. A report based on the study is due 18 months after enactment.<br><br>Requires a study examining how, and under what circumstances, the environmental statutes for which EPA has responsibility would apply to $CO_2$ injection and geologic sequestration activities. A report based on the study is due one year after enactment. | underground storage of $CO_2$, such as mineral rights, water rights, rights to the pore space, and others. |

## Sec. 114. Carbon Capture and Sequestration Demonstration and Early Deployment Program

| *Summary of section* | *Comments* |
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| Authorizes a Carbon Storage Research Corporation to establish and administer a program to accelerate the commercial availability of carbon dioxide capture and storage technologies and methods by awarding grants, contracts, and financial assistance to electric utilities, academic institutions, and other eligible entities.<br><br>Establishes the corporation by a referendum among "qualified industry organizations" which would include the Edison Electric Institute, the American Public Power Association, the National Rural Electric Cooperative Association, their successors, or a group of owners or operators of distribution utilities delivering fossil fuel-based electricity who collectively represent at least 20% of the volume of all fossil fuel-based electricity delivered by distribution utilities to U.S. consumers. Voting rights would be based on the quantity of fossil fuel-based electricity delivered to the consumer in the previous year or other representative period. The corporation would be established if persons representing two-thirds of | Sec. 114 is nearly identical to H.R. 1689, the Carbon Capture and Storage Early Deployment Act introduced by Rep. Boucher on March 24, 2009.<br><br>If established, the corporation would award grants, contracts, and assistance to support commercial-scale demonstration of carbon capture or storage technology projects that encompass coal and other fossil fuels, and are suitable for either new or retrofitted plants. The corporation would seek to support at least five commercial-scale demonstration projects over the lifetime of the corporation. Pilot-scale and other small-scale projects would not be eligible under the program.<br><br>The authority to collect assessments expires 10.5 years after enactment, and the corporation would dissolve 15 years after enactment unless extended by Congress. If assessments are collected as specified, the corporation would accumulate approximately |

| *Summary of section* | *Comments* |
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| the total quantity of fuel-based electricity delivered to retail consumers vote for approval. If 40% or more of state regulatory authorities submit written notices of opposition to the creation of the corporation, the corporation would not be established.<br><br>Establishes requirements for board members, compensation, and terms of service. Provides descriptions of the status of corporations, functions and administration of the corporation, and details of corporation administration, including the use of grants and contracts, intellectual property issues, budgeting, record keeping, audits, and reports.<br><br>The corporation would raise funding for its program by collecting an assessment on distribution utilities for all fossil fuel-based electricity delivered to retail customers. The assessments would reflect the relative $CO_2$ emission rates of different fossil fuel-based electricity as follows:<br><br>**Fuel type** — **Rate of assessment per kilowatt hour**<br>Coal — $0.00043<br>Natural Gas — $0.00022<br>Oil — $0.00032<br><br>The corporation is authorized to adjust the assessments so that they generate not less than $1.0 billion and not more than $1.1 billion per year.<br><br>Provides specific provisions for the Electric Reliability Council of Texas (ERCOT), including the corporation factors listed above. Methods are specified for determining fossil-fuel-based electricity deliveries.<br><br>Within five years, the Comptroller General of the United States must prepare an analysis and report to Congress assessing the Corporation's activities, including project selection and methods of disbursement of assessed fees, impacts on the prospects for commercialization of carbon capture and storage technologies, and | $10 billion to be awarded over 15 years.<br><br>The program gives priority to "early movers," electric utilities that committed resources to deploy large scale electricity generation units integrated with carbon capture and sequestration prior to the award of any grant authorized under this section. The section does not quantify the amount of resources deployed, but does state that they should be "applied to a substantial portion of the unit's carbon dioxide emissions." |

| *Summary of section* | *Comments* |
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| adequacy of funding.<br><br>Allows that a distribution utility whose transmission, delivery, or sale of electric energy are subject to any form of rate regulation shall not be denied the opportunity to recover the full amount of the prudently incurred costs associated with complying with this section.<br><br>Establishes a technical advisory committee to provide independent assessments and technical evaluations, as well as make non-binding recommendations to the Board concerning corporation activities, and describes its role and management. | |

## Sec. 115. Commercial Deployment of Carbon Capture and Sequestration Technologies

| *Summary of section* | *Comments* |
|---|---|
| Amends Title VII of the Clean Air Act to require that not later than two years after the date of enactment, the EPA Administrator is to promulgate regulations providing for the distribution of emission allowances to support the commercial deployment of carbon capture and sequestration technologies in both electric power generation and industrial operations. Eligibility for emission allowances requires an owner or operator to implement carbon capture and sequestration technology at: (1) an electric generating unit that has a nameplate capacity of 200 megawatts or more, and derives at least 50% of its annual fuel input from coal, petroleum coke, or any combination of these two fuels, and which will achieve at least a 50% reduction in carbon dioxide emissions annually produced by the unit; and (2) at an industrial source that, absent carbon capture and sequestration, would emit more than 50,000 tons per year of carbon dioxide, and upon implementation will achieve at least a 50% reduction in annual carbon dioxide emissions from an emission point. Eligibility for emission allowances requires that the owner or operator geologically sequester captured carbon | Sec. 115 excludes industrial facilities from eligibility if they produce a liquid transportation fuel from a solid fossil-based feedstock.<br><br>For projects that capture and sequester carbon dioxide for the purposes of enhanced hydrocarbon recovery, the Administer is required to reduce the applicable bonus allowance value compared to projects that capture carbon dioxide solely for purposes of sequestration.<br><br>This section provides an incentive for "early movers." Under Phase I distribution to electric generating units, the bonus allowance value is increased by $10 – of the otherwise applicable bonus value – if the generating unit achieves a 50% capture rate before January 1, 2017.<br><br>An amendment was successfully offered during markup to replace the word "source" with the words "emission point" regarding eligibility for emission allowances at an |

| *Summary of section* | *Comments* |
|---|---|
| dioxide or convert it to a stable form that can be safely and permanently sequestered.<br><br>Distributes emission allowances to electric generating units in two phases. Phase I applies to the first 6 gigawatts of electric generating units, measured in cumulative generating capacity of such units. Under Phase I, eligible projects receive allowances equal to the number of tons of carbon dioxide captured and sequestered, multiplied by a bonus allowance value, divided by the average fair market value of an emission allowance in the prior year. The Administrator shall establish a bonus allowance value for each rate of carbon capture and sequestration—compared to how much would otherwise be emitted—from a minimum of $50 per ton for a 50% rate to a maximum of $90 per ton for an 85% rate.<br><br>After the 6 gigawatt threshold is achieved, Phase II distributes emission allowances by reverse auction (described in this section of the bill). If the Administrator determines that reverse auctions are not efficient or cost-effective for deploying commercial-scale capture and sequestration technologies, the Administrator may prescribe an alternative distribution method. In an alternative distribution method, the Administrator would divide emission allowances into multiple tranches, each supporting the deployment of a specified quantity of cumulative electric generating capacity using carbon capture and sequestration technology. Each tranche would support no more than 6 gigawatts of electric generating capacity, and would be distributed on a first-come, first-serve basis. For each tranche, the Administrator would establish a sliding scale that provides higher bonus allowance values for projects achieving higher rates of capture and sequestration. For each successive tranche, the Administrator would establish a bonus allowance value that is lower than the rate established for the previous tranche.<br><br>The Administrator would not distribute more than 15% of the allocated allowances under Sec. 782(a) to eligible industrial sources. The | industrial source. The change in wording could affect the eligibility for industrial sources that might employ carbon capture and sequestration at some but not all emission points in the facility.<br><br>An amendment was successfully offered during markup that makes retrofitted electric generating units eligible for emission allowances if the carbon capture and sequestration technology is applied to the flue gas from at least 200 megawatts of the total nameplate capacity of the unit. The amendment similarly makes retrofitted units eligible if the carbon capture and sequestration technology achieves at least a 50% reduction capacity in emissions from the treated portion of the flue gas from the retrofitted unit.<br><br>An amendment was successfully offered during markup to include retrofitted units in the calculation of bonus allowances with respect to the treated portion of flue gas from the retrofitted units. |

| *Summary of section* | *Comments* |
|---|---|
| allowances may be distributed to eligible industrial sources using a reverse auction method or an incentive schedule, similar to the Phase II methods described for electric generating units.<br><br>Total allowances under Sec. 115 are limited to 72 gigawatts of total cumulative generating capacity, including for industrial sources according to an equivalent metric designated by the Administrator. | |

**Sec. 116. Performance Standards for Coal-Fueled Power Plants**

| *Summary of section* | *Comments* |
|---|---|
| Amends title VIII of the Clean Air Act (CAA) by adding performance standards for carbon dioxide removal for new coal-fired power plants. Plants covered by this section include plants that have a permit issued under CAA Title V to derive at least 30% of their annual heat input from coal, petroleum coke, or any combination of these fuels. The performance standards are as follows:<br><br>• A covered unit that is "initially permitted" on or after January 1, 2020, shall reduce carbon dioxide emissions by 65%.<br><br>• A covered unit that is initially permitted after January 1, 2009, and before January 1, 2020, must achieve a 50% reduction in carbon dioxide emissions by a compliance date that will be determined by future developments. Specifically, the compliance date will be the earliest of (1) four years after the date in which the equivalent of 4 gigawatts (Gw) of generating capacity with commercial carbon capture and sequestration technology are operating in the United States and sequestering at least 12 million tons of carbon dioxide annually (equivalent to | The 65% reduction mandated for coal plants entering service after January 1, 2020, would result in a level of emissions roughly equivalent to the carbon dioxide released by a natural gas-fired plant of modern design (a "combined cycle" plant) using no carbon controls.<br><br>The use of the term "initially permitted" is important in the implementation of this section. A new power plant that has received a permit that is still subject to administrative or legal review is considered to be "initially permitted." If a proposed new coal plant has been "initially permitted" prior to January 1, 2009, it will not fall under the requirements of this section to eventually install carbon controls. In an earlier version of this bill, only new units that had been "finally permitted" prior to January 1, 2009—that is, the permit was no longer subject to any challenges or reviews—would have escaped this requirement.<br><br>An amendment was successfully offered during markup allowing retrofitted plants to be included, in addition to new plants, for determining the nameplate capacity of units in commercial operation equipped with carbon capture and sequestration technology. |

| *Summary of section* | *Comments* |
|---|---|
| roughly eight medium-sized coal plants). This 4 Gw of capacity must include at least 3 Gw of electric generating units, up to 1 Gw of industrial applications that are capturing and sequestering at least 3 million tons of carbon dioxide annually, and at least two operating 250 megawatt (Mw) or larger generating units sequester captured carbon dioxide in geologic formations other than oil and gas fields; or (2) January 1, 2025 (which can be extended by the EPA Administrator by up to 18 months on a case-by-case basis).<br>• Not later than 2025 and at five-year intervals thereafter, the Administrator is to review the standards for new covered units under this section and shall reduce the maximum carbon dioxide emission rate for new covered units to a rate which reflects the degree of emission limitation achievable through the application of the best system of emission reduction which the Administrator determines has been adequately demonstrated. The Administrator is also to publish biennial reports on the amount of capacity with commercial carbon capture and sequestration technology in the United States. | |

# Subtitle C—Clean Transportation

## Sec. 121. Electric Vehicle Infrastructure

| *Summary of section* | *Comments* |
|---|---|
| Electric utilities are required to develop plans to support the use of plug-in hybrid vehicles (PHEVs) and pure plug-in electric vehicles (EVs), including heavy-duty hybrids. Plans may include deployment of charging stations, battery exchanges, fast-charging infrastructure, and triggers for development based on vehicle market penetration. Infrastructure should be interoperable with products from all manufacturers, to the extent practicable. State regulatory authorities and utilities must establish protocols and standards for integrating plug-in vehicles into the electrical distribution system, and include the ability for each vehicle to be identified individually and associated with its owner's electric utility account, for the purposes of billing of electricity use and the crediting of any power returned to the grid by the vehicle's batteries.<br><br>Within three years of enactment, state regulatory authorities must set a hearing date for considering the plan, and must make a determination on new standards within four years of enactment. State regulatory authorities must consider whether to allow cost recovery for the development and implementation of such plans. | A key issue with the development and expansion of electric vehicles is the availability of infrastructure to support those vehicles. Currently, various protocols and technologies are being tested and have been considered. In some cases, standards have been determined for vehicle recharging plug design and other elements, but most standardization questions remain undecided. Requiring utilities to develop plans for infrastructure development will likely provide an impetus for further standardization, as well as expansion of that infrastructure. |

## Sec. 122. Large-Scale Vehicle Electrification Program

| *Summary of section* | *Comments* |
|---|---|
| Requires the Secretary of Energy to establish a program to deploy and integrate plug-in vehicles in multiple regions. Any state or local government—either solely or jointly with electric utilities, automakers, technology providers, car sharing companies, or other entities—may apply to the Secretary for financial assistance. The Secretary is to determine the design elements and requirements for the program, including the type of financial assistance provided. Financial | |

| *Summary of section* | *Comments* |
|---|---|
| assistance may be used for various purposes: assisting in the purchase of new vehicles; deployment of recharging or battery exchange infrastructure; integration of plug-in vehicles into the grid; and other projects the Secretary deems appropriate to support large-scale deployment of plug-in vehicles. | |

### Sec. 123. Plug-in Electric Drive Vehicle Manufacturing

| *Summary of section* | *Comments* |
|---|---|
| Requires the Secretary of Energy to establish a program to provide financial assistance to automobile manufacturers to facilitate the manufacture of plug-in vehicles. The Secretary may provide assistance for the reconstruction or retooling of vehicles developed and produced in the United States, and for the purchase of domestically produced batteries for such vehicles. However, assistance may be granted only if the manufacturer is unable to finance the project without such assistance. The Secretary is to determine the design elements and requirements for the program, including the type of financial assistance provided. The Secretary is to give preference to facilities located in areas that have the greatest need for the facility. | The details of this program, if enacted, would determine its likely scope and effects. For example, manufacturers are more likely to prefer grants to loans, and direct loans to loan guarantees. |

### Sec. 124. Investment in Clean Vehicles

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to distribute one-quarter of the allowances allocated to the automotive sector in Sec. 782 through the cap-and-trade program (see below) for plug-in electric vehicle development. Half of those allowances (i.e. one-eighth of auto sector allowances) shall be used to implement Sec. 122 and half to implement Sec. 123.<br><br>Directs EPA to distribute the remaining auto sector allowances to automakers and parts suppliers for the development of advanced technology vehicles as defined in Sec. 136 of the | Sec. 136 of EISA established a loan program to support the development of facilities to produce advanced technology vehicles. While DOE has received applications for the Advanced Technology Vehicle Manufacturing Loan Program (ATVM) program, no loans have yet been awarded, and many automakers may not qualify for the loans due to the financial stability requirements in EISA. Sec. 124 contains no similar requirements, and would effectively be a grant program as opposed to a loan |

| *Summary of section* | *Comments* |
|---|---|
| Energy Independence and Security Act of 2007 (EISA, P.L. 110-140). The allowance value may cover up to 30% of the cost of reequipping, expanding, or establishing facilities to produce qualifying vehicles or components. | program. |

### Sec. 125. Advanced Technology Vehicle Manufacturing Incentive Loans

| *Summary of section* | *Comments* |
|---|---|
| Increases the total amount of loans allowed under the Advanced Technology Vehicle Manufacturing Loan Program established in Sec. 136 of EISA (see comment in Sec. 124). EISA authorized up to $25 billion in loans. Sec. 125 authorizes up to $50 billion. | The total value of loan applications under EISA Sec. 136 far exceeded the $25 billion cap on loan authority. |

### Sec. 126. Amendment to Renewable Fuels Standard

| *Summary of section* | *Comments* |
|---|---|
| Replaces the definition of "renewable biomass" in the Renewable Fuel Standard (RFS) that was enacted in EISA. | The EISA definition of "renewable biomass" effectively restricted the types of feedstock that could be used to produce eligible fuels under the RFS. The definition precluded the use of woody biomass from federal lands, and significantly limited the use of woody biomass from private lands. This amendment would significantly expand the amount of biomass from forested lands that could be used to produce fuels under the RFS. |

### Sec. 127. Open Fuel Standard

| *Summary of section* | *Comments* |
|---|---|
| Authorizes the Secretary of Transportation to establish an "open fuel standard" for new automobiles in model year 2016 or later if he determines that E85 (85% ethanol and 15% gasoline) or M85 (85% methanol and 15% gasoline) are available in sufficient quantities to be used by flexible fuel vehicles (FFVs), that sufficient infrastructure exists to fuel the | Currently, automakers are granted credits under the Corporate Average Fuel Economy (CAFE) program for the production of FFVs. FFVs can run on any mixture of conventional gasoline and an alternative fuel (in most cases, E85). Currently, there are an estimated six to eight million FFVs on the road, but the vast majority of these vehicles |

| *Summary of section* | *Comments* |
|---|---|
| vehicles, and that such a requirement is a cost-effective way to meet energy and environmental goals. An open fuel standard would require automakers to produce a share of their new vehicles as FFVs (capable of operating on E85 or M85) or capable of operating on biodiesel. | are operated only on gasoline, due to the higher per-mile cost of E85 and its limited availability. |

### Sec. 128. Temporary Vehicle Trade-In Program

| *Summary of section* | *Comments* |
|---|---|
| Establishes a "Cash for Clunkers" program within the National Highway Traffic Safety Administration (NHTSA). The program would offer vouchers to customers who purchase a new fuel-efficient vehicle to replace an older, less efficient vehicle. The vehicle to be replaced must be crushed or shredded. Vouchers would be valued at $3,500 or $4,500, depending on the class of vehicle (e.g., passenger car, light-duty truck, medium-duty truck), the fuel efficiency improvement from the scrapped vehicle to the new vehicle, and/or the age of the scrapped vehicle. The vouchers may only cover vehicles purchased or leased between March 30, 2009, and March 31, 2010. A total of $4 billion is authorized to implement the program. | This section was added by the Sutton Amendment.<br><br>The concept of a "cash-for-clunkers" program has been around for over a decade. However, earlier programs were generally targeted at improving air quality by removing from the road vehicles with malfunctioning emissions control systems, or vehicles that were certified for significantly less stringent emissions standards compared to current emissions standards. Recent attention has focused on a German program that provided vouchers for the purchase of a new vehicle, although there were no fuel economy or greenhouse gas emissions standards attached—this program was largely seen as aimed at directly promoting vehicle sales, as opposed to any environmental goal. Sec. 128 is similar to bills introduced in the House and Senate that would require fuel economy improvements. Proponents contend that such a program can lead to significant reductions in fuel consumption and greenhouse gas emissions, while critics argue that there are more cost-effective measures for reaching the same results. |

### Sec. 129. Diesel Emissions Reduction

| *Summary of section* | *Comments* |
|---|---|
| Amends the Diesel Emission Reduction Grant Program established in the Energy Policy Act of 2005 (P.L. 109-58) to include American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the Virgin Islands to the states eligible to receive and distribute grant funds. | |

### Sec. 130. Loan Guarantees for Projects to Construct Renewable Fuel Pipelines

| *Summary of section* | *Comments* |
|---|---|
| Amends the loan guarantee program in title XVII of the Energy Policy Act of 2005 to include the construction of pipelines for renewable fuels, including ethanol, biodiesel, and any other qualified fuel under the renewable fuel standard in EISA. | |

## Subtitle D—State Energy and Environment Development Accounts

### Sec. 131. Establishment of SEED Funds

| *Summary of section* | *Comments* |
|---|---|
| Directs the Department of Energy (DOE) to create a program that allows each state energy office to establish a State Energy and Environment Development (SEED) Fund. The state-level SEED Fund is to serve as a common repository that manages and accounts for federal financial assistance that is designated mainly for clean energy, energy efficiency, and climate change purposes. DOE is required to develop model regulations for SEED operations and to assist states with set-up and operations.<br><br>Each state is allowed to deposit into its SEED Fund the appropriations from DOE's Weatherization Assistance Program (WAP), State Energy Program (SEP), and Energy Efficiency and Conservation Block Grant (EECBG) Program. Also, appropriations from the | The SEED Fund is designed to collect a few major, but separate, grant programs into a more unified effort. |

| *Summary of section* | *Comments* |
|---|---|
| Department of Health and Human Services' Low Income Home Energy Assistance Program (LIHEAP) could be deposited in the SEED Fund. To the extent that amounts deposited in a SEED Funds are not tied to a specific use, such amounts may be used to support grants, loans, loan interest subsidies, and revolving loan programs. | |

### Sec. 132. Support of State Renewable Energy and Energy Efficiency Programs

| *Summary of section* | *Comments* |
|---|---|
| Directs the Environmental Protection Agency, during the period from 2012 through 2050, to distribute carbon offset allowances among states according to a legislated formula. The formula would distribute one-third of the allowances among the states equally, one-third to states according to population, and one-third to states according to energy use.<br><br>State use of allowances would also be controlled by a legislated formula. That formula directs that each state distribute a minimum of: 12.5% to local governments for efficiency and renewables; 15% for building codes (§201), manufactured homes (§203), building energy labels (§204), smart grid, transportation planning, low-income energy efficiency programs (§264), and other "cost-effective" efficiency programs for end-use consumers; and 5% for implementation of the Retrofit for Energy and Environmental Performance (REEP) program (§202). Also, 20% would support a variety of incentives aimed to re-equip, expand, or establish a manufacturing facility that produces renewable energy equipment or energy storage systems; deploy renewable energy technologies; or deploy facilities or equipment (e.g. solar panels) for urban buildings. The remaining 47.5% would be used to support any of the preceding categories, with the stipulation that the low-income efficiency programs would get at least 1%.<br><br>Each state receiving emission allowances would be required to submit biennial reports to Congress. Those reports are to include a list of | The carbon allowance distribution program established in this section would be used to help support several energy efficiency programs in Title II. |

| *Summary of section* | *Comments* |
|---|---|
| entities that received allowances; the amount and nature of allowances; the purposes of allowance use; the amount of energy savings and emission reductions; and an assessment of the cost-effectiveness of spending for the low-income energy efficiency programs (§264). | |

## Subtitle E—Smart Grid Advancement

### Sec. 141. Definitions (no summary or comments)

### Sec. 142. Assessment of Smart Grid Cost-Effectiveness in Products

| *Summary of section* | *Comments* |
|---|---|
| Directs the Energy Secretary and EPA Administrator to assess the cost-effectiveness of integrating smart grid capability into all products that are reviewed for potential designation as Energy Star (i.e., energy efficient) products. The evaluation process is to begin within a year of enactment. Within two years of enactment the Administrator and Secretary are to prepare an analysis of the energy, greenhouse gas, and cost savings that could result (under certain specified conditions) from the inclusion of smart grid capability in the products analyzed pursuant to this section. Within three years of enactment the findings from this work are to be summarized in a report to Congress. Additionally, product manufacturers are to be notified if the incorporation of smart grid technology in their products appears to be cost-effective. | |

## Sec. 143. Inclusions of Smart Grid Capability on Appliance ENERGY GUIDE Labels

| *Summary of section* | *Comments* |
|---|---|
| Directs the Federal Trade Commission to begin a rulemaking, within three years of enactment, to consider adding to Energy Guide labels information on the smart grid features of products that incorporate smart grid technology. The information would inform the consumer that the product actually has smart grid technology, that the benefits of the technology can only be realized if the consumer's local utility has implemented a smart grid power system, and the potential cost savings from using the smart grid features of the product. | |

## Sec. 144. Smart Grid Peak Demand Reduction Goals

| *Summary of section* | *Comments* |
|---|---|
| Requires load serving entities (i.e., utilities that sell electricity directly to customers) to establish and meet goals reducing peak electricity demand for the years 2012 and 2015. No targets are set in the bill itself, except that the goals should be "realistically achievable with an aggressive effort to deploy Smart Grid and peak demand reduction technologies and methods." This provision is mandatory for load-serving entities with an annual baseline peak demand of at least 250 megawatts (equivalent to the output of a single, relatively small power plant).<br><br>Goals can be set by individual load-serving entities, by states, or by "regional entities." The goals can be designed to cover a single load-serving entity or a region.<br><br>FERC is ordered to implement this program in coordination, to the extent possible, with state demand response and peak reduction programs. There is no penalty for a load-serving entity's | Although this section is under the smart grid rubric, many of the listed measures for achieving peak demand reductions do not necessarily require deployment of smart grid technology. These include, for example, utility ability to cycle demand at industrial facilities that have signed up for demand response programs (in which they receive lower rates in return for giving the utility the option of interrupting service), and power supply from distributed generation.[10] Other options, such as direct control of residential appliances, do require smart grid technology.<br><br>The term regional entity is not defined in the bill. It could refer to the FERC-sponsored Regional Transmission Organizations that operate the transmission grid and perform other functions in parts of the United States. The term could also refer to the regional reliability entities that assist the North American Electric Reliability Corp. in |

[10] This is generation owned by the customer and located at the customer's site. Distributed generation ranges from rooftop solar on a home to large generating facilities located at big manufacturing plants.

| *Summary of section* | *Comments* |
|---|---|
| failure to reach goals, except for being identified in annual progress reports to Congress. The bill authorizes financial assistance to the states using emission allowances from the SEED Accounts established by Sec. 132 of this bill. | establishing and enforcing power system reliability standards. It also not clear how the states, load-serving entities, and regional entities are supposed to coordinate the process of setting peak reduction goals.<br><br>The Energy Independence and Security Act of 2007 (EISA) articulated a national policy to modernize the power system with smart grid technology, and authorized research and development programs, funding for demonstration projects, and matching funds for investments in smart grid technologies. These and related programs received $4.5 billion in funding in the 2009 stimulus bill. In addition, the Emergency Economic Stabilization Act of 2008 shortens the depreciation period for smart meters and other smart grid equipment from 20 years to 10 years (which increases each year's depreciation tax deduction for the equipment). The value of this tax change to the power industry is reportedly $915 million over 10 years. |

### Sec. 145. Reauthorization of Energy Efficiency Public Information Program to Include Smart Grid Information

| *Summary of section* | *Comments* |
|---|---|
| Modifies an energy efficiency public information program authorized by the Energy Policy Act of 2005 to make it into a smart grid and energy efficiency information program. In addition to the change in emphasis, the end-date for the program is extended from 2010 to 2020. | |

### Sec. 146. Inclusion of Smart-Grid Features in Appliance Rebate Program

| *Summary of section* | *Comments* |
|---|---|
| Modifies an energy efficiency appliance rebate program authorized by the Energy Policy Act of 2005 to add appliances with smart grid capabilities. The section also amends the original language generally such that federal money can be used to fund 100% of the rebate amount instead of just administrative costs (states must still supply at least 50% of administrative costs). Authorized funding is increased from $50 million annually to $100 million, and the authorization is extended to run through FY2015. | |

## Subtitle F—Transmission Planning

### Sec. 151. Transmission Planning

| *Summary of section* | *Comments* |
|---|---|
| Amends the Federal Power Act to create a new voluntary transmission planning process. The primary purpose is to facilitate the development of new renewable power sources.<br><br>Establishes a national transmission planning policy. Based on this policy, FERC is to establish within a year of enactment planning principles which can be adopted and used by a variety of existing and new planning entities to develop transmission plans. FERC is to receive all plans (effectively combining regional plans into super-regional or national plans) no more than 18 months after filing the planning principles, and attempt to resolve conflicts between plans. It is also to report to Congress on the status of the planning efforts three years after enactment and can recommend legislative changes to facilitate development of the transmission system.<br><br>The planning processes are directed to focus primarily on facilitating the "deployment of renewable and other zero-carbon" power sources. Other objectives are noted, such as power system reliability and cost-effective service, but these are to be met in the context of the overarching goal | Unlike some other transmission development proposals, this bill does not direct FERC to designate federally sponsored regional planning entities, does not give transmission projects included in final transmission plans any special benefits, does not give FERC new transmission siting authority, and is not mandatory.<br><br>Specifies that the transmission planning processes should consider non-transmission solutions to power system needs, such as energy efficiency, distributed generation, and electricity storage. These requirements implicitly turn transmission planning into wider scope power system planning. |

| *Summary of section* | *Comments* |
|---|---|
| of facilitating renewable/zero-carbon power deployment.<br><br>The bill authorizes funding as necessary for FERC to assist the planning process with, for example, technical expertise, computer modeling support, and dispute resolution services. | |

### Sec. 152. Net Metering for Federal Agencies

| *Summary of section* | *Comments* |
|---|---|
| Amends the Public Utility Regulatory Policies Act of 1978 (PURPA) to require state regulatory authorities to consider ordering utilities under their jurisdiction to implement net metering for federal facilities. It also requires non-regulated utilities (such as many municipal utilities) to make the same evaluation. The standard would not apply to small utilities that sell less than 4 million megawatt-hours of electricity annually.<br><br>Consideration of net metering for federal facilities must take place within a year of enactment. As with other electricity rate standards included in PURPA, state regulatory authorities and non-regulated utilities must evaluate whether to adopt this net metering standard, but can choose not to. A decision not to adopt the standard must be stated in a public document that explains the basis for rejection. | Net metering is a ratemaking concept intended to encourage the development of "distributed generation." Distributed generation is electricity generated at the customer's site, possibly (but not necessarily) using renewable energy. In principal the wider use of distributed generation could reduce the need for new large utility power plants and the need for new transmission lines to bring electricity from power plants to customers.<br><br>Net metering is intended to make distributed generation more economical by requiring the utility that supplies electricity to a facility to also take any electricity generated by that facility, such as from rooftop solar panels or an on-site diesel generator. The ultimate utility bill to the facility is reduced by the amount of electricity supplied to the power company. This cuts the utility bill for the customer, although in a complete economic analysis the cost of building and operating the consumer's power generator would also have to be taken into consideration. |

## Sec. 153. Support for Qualified Advanced Electric Transmission Manufacturing Plants, Qualified High Efficiency Transmission Property, and Qualified Advanced Electric Transmission Property

| *Summary of section* | *Comments* |
|---|---|
| Amends the Energy Policy Act of 2005 (EPACT05) to provide for incentives for the development and construction of transmission lines and related facilities using currently non-commercial technology. The categories of technology include "advanced electric transmission property" (essentially high-efficiency underground transmission lines and associated equipment), "advanced electric transmission manufacturing plant" (plants that manufacture the "advanced electric transmission property"), and "high efficiency transmission property" (essentially high-efficiency overhead transmission lines and associated equipment).<br><br>All three categories of technology would be added to the list of technologies qualifying for the new loan guarantee program added to EPACT05 by the American Recovery and Reinvestment Act of 2009. These loan guarantees are available to specified renewable energy and transmission projects that begin construction no later than September 30, 2011. In addition, the first "advanced electric transmission property" project to qualify pursuant to this amendment will be eligible for a grant from the Department of Energy to cover up to 50% of project development and construction costs. The amendment authorizes up to $100 million for this grant program for FY2010.<br><br>Additionally, "advanced electric transmission property" and "advanced electric transmission manufacturing plant" only would be added to the original loan guarantee program included in EPACT05. This program was originally created to support the development of low carbon and other advanced energy technologies. | |

## Subtitle G—Technical Corrections to Energy Laws

### Sec. 161. Technical Corrections to Energy Independence and Security Act of 2007

| *Summary of section* | *Comments* |
|---|---|
| Clarifying, technical amendments. | No substantive changes. |

### Sec. 162. Technical Corrections to Energy Policy Act of 2005

| *Summary of section* | *Comments* |
|---|---|
| Clarifying, technical amendment. | No substantive change. |

## Subtitle H—Energy and Efficiency Centers

### Sec. 171. Clean Energy Innovation Centers

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to establish regional Clean Energy Innovation Centers to promote commercial deployment of clean indigenous energy forms that help reduce fossil energy use, curb greenhouse gas emissions, and help maintain national technological leadership.<br><br>The Centers are to focus on cross-disciplinary R&D in areas not served by the private sector. Also, the Centers are to promote regional economic development by cultivating "clusters" of clean energy technology firms and other businesses and organizations.<br><br>DOE is required to conduct a competitive process for the distribution of emission allowances to consortia with the aim of establishing eight Centers, each with a unique technology focus. Each consortium must include at least two research universities and at least one other qualifying entity, which can be another university, a state energy institution, or a | |

| *Summary of section* | *Comments* |
|---|---|
| nongovernmental energy organization.<br><br>Each Center is required to use allowances to provide awards to projects managed by qualifying entities. Also, each Center must submit an annual report to DOE. | |

### Sec. 172. Building Assessment Centers

| *Summary of section* | *Comments* |
|---|---|
| Requires DOE to fund Building Assessment Centers at institutions of higher education to promote energy efficiency techniques for new and existing buildings, promote applications of new technologies, provide training, assist community colleges and trade schools, promote R&D, and coordinate with accredited technical training centers. Starting with FY2010, the program is authorized $50 million per year. | A Building Assessment Center may serve as a Center for Energy and Environmental Knowledge and Outreach, as identified in Section 173. |

### Sec. 173. Centers for Energy and Environmental Knowledge and Outreach

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to conduct a competitive process to establish up to 10 regional Centers for Energy and Environmental Knowledge and Outreach at institutions of higher education. Each Center shall consist of at least one industrial research and assessment center, Clean Energy Application Center, or Building Assessment Center (§172). DOE is required to ensure that the Centers cover all geographic regions of the nation. Each Center is required to develop regional goals, cultivate technical resources, and perform outreach.<br><br>Each Center must establish a workforce training internship program. A federal funding share of 50% would be provided. Starting with FY2010, the training program is authorized $5 million per year.<br><br>The Small Business Administration is required to consider loans to affiliated industrial research and assessment centers, Clean Energy Application | |

| *Summary of section* | *Comments* |
|---|---|
| Centers, and Building Assessment Centers.<br><br>Starting with FY2010, DOE is authorized $10 million per year to support these Centers. Also, for Clean Energy Application Centers, a previous authorization of $10 million per year would rise to $30 million per year, starting in FY2010. | |

## Subtitle I—Nuclear and Advanced Technologies

### Sec. 181. Revisions to Loan Guarantee Program Authority

| *Summary of section* | *Comments* |
|---|---|
| Amends DOE's loan guarantee program for low-carbon energy projects under title XVII of the Energy Policy Act of 2005. A procedure for "conditional commitments" for federal loan guarantees is established, potential government losses from loan guarantees can be covered by a combination of payments by project sponsors and appropriations, a fund is established for administrative expenses, and prevailing wages are required for projects receiving loan guarantees. | This section makes some administrative changes in the existing DOE loan guarantee program but otherwise leaves it intact. Perhaps the most significant change is to require projects receiving loan guarantees to pay prevailing wages under the Davis-Bacon Act. |

### Sec. 182. Purpose

| *Summary of section* | *Comments* |
|---|---|
| States that the purpose of the remainder of this subtitle is to promote domestic development and deployment of clean energy technologies. | |

### Sec. 183. Definitions

| *Summary of section* | *Comments* |
|---|---|
| Defines key terms, including: "breakthrough technology" as promising technology with high commercial risk; and "clean energy technology," as technology that can reduce greenhouse gas emissions but for which insufficient commercial lending is available. | |

### Sec. 184. Clean Energy Investment Fund

| *Summary of section* | *Comments* |
|---|---|
| Establishes a revolving fund in the Treasury to be used by the newly established Clean Energy Deployment Administration to provide financial assistance to clean energy projects. | The revolving fund would be in addition to DOE loan guarantee authority under EPACT. |

### Sec. 185. Energy Technology Deployment Goals

| *Summary of section* | *Comments* |
|---|---|
| Requires the Secretary of Energy to establish goals and performance targets for clean energy technology deployment. | |

### Sec. 186. Clean Energy Deployment Administration

| *Summary of section* | *Comments* |
|---|---|
| Establishes Clean Energy Deployment Administration (CEDA) as an agency within DOE and reporting only to the Secretary of Energy. CEDA would be headed by a presidentially appointed administrator for a five-year term and would have a nine-member board of directors, including the CEDA Administrator and the Secretary of Energy. A CEDA Energy Technology Advisory Council would develop methodologies for assessing clean energy technologies for potential CEDA financial support. | |

### Sec. 187. Direct Support

| *Summary of section* | *Comments* |
|---|---|
| Authorizes CEDA to issue direct loans, letters of credit, loan guarantees, insurance products, and other financial instruments to support clean energy projects. CEDA is to establish a loan loss reserve to cover estimated losses from the program; the initial target for the reserve is 10% of the CEDA investment portfolio. No single energy technology may receive more than 30% of CEDA financial support. Projects supported by CEDA must pay prevailing wages to their workers. | The financial support authorized by CEDA would be in addition to the DOE loan guarantee authority under EPACT. The new program would be substantially broader in the types of support that could be provided. The 30% limit on support for any single technology is most likely to affect nuclear power projects. Primarily because of their relatively large size, proposed nuclear plants are currently seeking more total financial assistance than other technologies. |

### Sec. 188. Federal Credit Authority

| *Summary of section* | *Comments* |
|---|---|
| Supports CEDA obligations with the full faith and credit of the United States. | |

### Sec. 189. General Provisions

| *Summary of section* | *Comments* |
|---|---|
| Establishes immunity requirements, procurement procedures, court jurisdiction, and reporting and auditing requirements. | |

## Subtitle J—Miscellaneous

### Sec. 191. Study of Ocean Renewable Energy and Transmission Planning and Siting

| *Summary of section* | *Comments* |
|---|---|
| Directs the Federal Energy Regulatory Commission, the Secretary of the Interior, and the National Oceanic and Atmospheric Administration, in consultation with the Council on Environmental Quality (CEQ) and, as appropriate, coastal States, regional organizations of coastal States, and relevant nongovernmental | |

| *Summary of section* | *Comments* |
|---|---|
| organizations, to jointly conduct a study of the potential for marine spatial planning to facilitate the development of offshore renewable energy facilities in a manner that protects and maintains coastal and marine ecosystem health. A report is required within six months. CEQ is then required to implement the recommendations of the report within four months or propose an alternate implementation. | |

### Sec. 192. Clean Technology Business Competition Grant Program

| *Summary of section* | *Comments* |
|---|---|
| Authorizes $20,000,000 for the Secretary of Energy to provide grants to non-profit organizations to conduct business competitions that provide incentives, training, and mentorship to entrepreneurs and early stage start-up companies throughout the United States to meet high priority economic, environmental, and energy security goals in areas to include energy efficiency, renewable energy, air quality, water quality and conservation, transportation, smart grid, green building, and waste management. | |

### Sec. 193. National Bioenergy Partnership

| *Summary of section* | *Comments* |
|---|---|
| Authorizes $7,500,000 for the Secretary of Energy to establish a National Bioenergy Partnership to provide coordination among programs of state governments, the federal government, and the private sector that support the institutional and physical infrastructure necessary to promote the deployment of sustainable biomass fuels and bioenergy technologies for the United States. | |

### Sec. 194. Office of Consumer Advocacy

| *Summary of section* | *Comments* |
|---|---|
| Establishes an Office of Consumer Advocacy within FERC to serve as an advocate for the public interest to represent, and appeal on behalf of, energy customers on matters concerning rates or service of public utilities and natural gas companies under the jurisdiction of the Commission at hearings of the Commission, in judicial proceedings in the courts of the United States, and at hearings or proceedings of other federal regulatory agencies and commissions. Establishes the Consumer Advocacy Advisory Committee to review rates, services, and disputes and to make recommendations to the Director. | |

# Title II—Energy Efficiency

## Subtitle A—Building Energy Efficiency Programs

### Sec. 201. Greater Energy Efficiency in Building Codes

| *Summary of section* | *Comments* |
|---|---|
| Requires DOE to update the national model building energy codes at least once every three years. The target for nationwide energy savings is set 30% higher than the baseline for updates released after enactment, and then rises to 50% for updates released after January 1, 2016. All model code updates are coordinated with updates of specified industry standards. Federal training and funding assistance is provided to states that adopt advanced building efficiency codes. States are required to certify their code updates and code compliance with DOE. | Working from the beginning of the design phase, new buildings present a major opportunity to improve energy efficiency. In the absence of being able to mandate national standards for new buildings, DOE prepares a model code for efficiency that is available for states to adopt and adapt to local circumstances. |

### Sec. 202. Building Retrofit Program

| *Summary of section* | *Comments* |
|---|---|
| Creates a Retrofit for Energy and Environmental Performance (REEP) program to facilitate the retrofitting of existing buildings nationwide to achieve maximum cost-effective energy efficiency improvements and significant improvements in water use and other environmental attributes. EPA is charged with one part of the program: developing standards for a retrofit policy for single-family and multi-family residences. In creating and operating the residential REEP program, EPA is required to use existing programs, especially the Energy Star for Buildings program.<br><br>DOE is charged with another part of the REEP program: developing standards for a retrofit policy for commercial buildings. In creating and operating the commercial REEP program, DOE is required to use existing programs, including delegating authority to the Director of Commercial High-Performance Green Buildings (established under 42 U.S.C. 17081) to designate and fund a High-Performance Green Building Partnership Consortium.<br><br>Provides federal financial assistance to be deposited in each state's SEED Fund (Sec. 131). DOE is required to administer financing for the REEP program. State and local agencies would have broad flexibility in REEP program operations. | Most building energy use takes place in the population of existing buildings, which is much larger than the annual production of new buildings. This provision directs EPA to develop a program to support efficiency retrofits of existing residential buildings and directs DOE to develop a similar program for existing commercial buildings. |

### Sec. 203. Energy Efficient Manufactured Homes

| *Summary of section* | *Comments* |
|---|---|
| Authorizes DOE grants to states to provide rebates to low-income families residing in pre-1976 manufactured homes. The rebate could be applied only toward the purchase of a new Energy Star-rated manufactured home. The value of the rebates is capped at $7,500. | A rebate program is established to encourage turnover of manufactured homes owned by low-income families. |

### Sec. 204. Building Energy Performance Labeling Program

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to establish a building energy performance labeling program that would apply broadly to residential and commercial building markets. The goal is to encourage owners and occupants to reduce energy use. EPA is required to consider existing programs, such as the Home Energy Rating System and DOE programs. Also, EPA is required to develop model performance labels for residential and commercial buildings and to use incentives and other means to spur the use of labels by public and private sector buildings. | A building energy efficiency labeling program would be established that would be similar to the existing labeling program for cars and appliances. |

### Sec. 205. Tree Planting Programs

| *Summary of section* | *Comments* |
|---|---|
| Requires DOE to establish a grant program to assist retail power providers with targeted tree-planting programs in residential and small office settings. Program goals include reducing peak-load power demand (either summer or winter), curbing pollution (air and water), and reducing electric bills. Program eligibility requires the use of targeted, strategic tree-siting guidelines. The program must either provide maximum shade during summer or maximum wind protection during fall and winter.<br><br>DOE must ensure that at least 30% of funds go to retail power providers that have not operated qualified tree-planting programs. Also, DOE may only award grants to retail providers that have formed binding legal agreements with nonprofit tree-planting organizations. The federal share of support for tree-planting projects is limited to a 50% match. Such sums as may be needed are authorized. | |

### Sec. 206. Energy Efficiency for Data Center Buildings

| *Summary of section* | *Comments* |
|---|---|
| Clarifying technical amendment to EISA that fixes a two-year deadline for identifying an information technology industry to consult with and to coordinate a voluntary national information program about the potential to improve energy efficiency in data centers. | |

## Subtitle B—Lighting and Appliance Energy Efficiency Programs

### Sec. 211. Lighting Efficiency Standards

| *Summary of section* | *Comments* |
|---|---|
| Sets four lighting standards. First, manufacturers of outdoor luminaires are required to achieve a minimum lighting efficiency of 50 lumens per watt by January 1, 2012; 70 lumens per watt by January 1, 2013; and 80 lumens per watt by January 1, 2015. By January 1, 2017, DOE is required to issue a final rule to amend that standard to "the maximum level that is technically feasible and economically justified." The amended standard would take effect by January 1, 2020. Second, manufacturers of outdoor high output lamps are required to achieve a standard of 45 lumens per watt by January 1, 2012. Third, manufacturers of portable light fixtures are required by January 1, 2012, to either meet Energy Star requirements for residential light fixtures or meet a minimum efficiency of 29 lumens per watt for LED light fixtures. DOE is required to publish amended standards by January 1, 2014, that would take effect on January 1, 2016. Fourth, certain technical requirements are set for art work light fixtures; and DOE is required to establish standards for certain incandescent reflector lamps, which would take effect three years after the law is enacted. | Efficiency standards were previously legislated for several types of lighting equipment. This provision adds new standards for a few additional niche categories of lighting equipment. |

### Sec. 212. Other Appliance Efficiency Standards

| *Summary of section* | *Comments* |
|---|---|
| Sets four efficiency standards for certain commercial appliances, in addition to existing standards for a number of other types of residential and commercial equipment. First, by January 1, 2012, water dispensers are required to have a maximum standby energy use of 1.2 kilowatt-hours per day. Second, by January 1, 2012, commercial hot food holding cabinets are required to have a maximum idle energy use rate of 40 watts per cubic foot of interior volume. Third, by January 1, 2012, portable electric spas are required to have a maximum standby power use set by formula that depends on the volume of the spa. DOE is directed to consider revisions to each of the foregoing three standards and publish a final rule by January 1, 2013. Revised standards would take effect on January 1, 2016. Fourth, efficiency standards are set for commercial furnaces with an input heat rate of 225 thousand Btu per hour. Gas-fired furnaces are required to have a minimum combustion efficiency of 80% and oil-fired furnaces would have a minimum combustion efficiency of 81%. | Efficiency standards were previously established for several categories of residential and commercial appliances. This provision extends the coverage to a few additional niche categories of commercial equipment. |

### Sec. 213. Appliance Efficiency Determinations and Procedures

| *Summary of section* | *Comments* |
|---|---|
| Revises the criteria for prescribing new or amended standards to include the estimated value of reduced emissions of carbon dioxide and other greenhouse gases; the estimated impact on average consumer energy prices; and the estimated energy efficiency attributable to Smart Grid technologies. Further, the criteria would require that the carbon output of each covered product be included on the EnergyGuide labels.<br><br>Other criteria for prescribing new or amended standards would require information about the commercial availability of products that meet higher standards; the standard's potential creation of a serious hardship on consumers or manufacturers; and the potential to avoid | Existing criteria for setting appliance efficiency standards would be expanded to include criteria related to greenhouse gas emissions and other factors. |

| *Summary of section* | *Comments* |
|---|---|
| hardship through the prescription of regional standards.<br><br>Requires manufacturers of covered products to submit annual reports and information to DOE regarding compliance, economic impact, annual shipments, facility energy and water use, and sales data that could support an assessment of the need for regional standards.<br><br>Clarifies the definition of "energy conservation standard" to include energy efficiency for some covered equipment, water efficiency for some covered equipment, and both energy and water efficiency for still other equipment.<br><br>Directs that state and local building codes use appliance efficiency requirements that are no less stringent than those set by federal standard.<br><br>Revises other definitions and provisions, including the use of test procedures adopted elsewhere, updated test methods for televisions, a state waiver, waiver of federal preemption, and permitting states to seek injunctive enforcement. | |

### Sec. 214. Best-in-Class Appliances Deployment Program

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to establish a deployment program to reward retailers with bonuses for increasing the sales of best-in-class high-efficiency installed building equipment, high-efficiency consumer electronics, and high-efficiency household appliance models. The goal of the program is to reduce life-cycle costs for consumers, encourage innovation, and maximize energy savings and public benefits. DOE would determine the size of the bonus payments. The best-in-class products would include no more than 10% of the most efficient product models in a class, and that group must show a "distinctly greater" efficiency than the average for that class. Further, DOE would review the class annually and make upward adjustments in the criteria as appropriate. | This program aims to encourage the use of the most energy-efficient appliances, while also providing an incentive to remove the least efficient appliances from commercial use. |

| *Summary of section* | *Comments* |
|---|---|
| In parallel, DOE is to establish bounties to retailers for replacing and recycling old, inefficient, and environmentally harmful appliances. The size of the bounty is based on the increment of energy use above that for an average new product. DOE is allowed to require that a product bonus be accompanied by retirement of old products. Also, DOE is required to ensure that no product receiving a bounty is returned to active service.<br><br>A bonus program is established for manufacturers that develop new "superefficient best-in-class" products. The structure of the program and calculation of bonuses is similar to that for the retail sector. DOE would have the authority to establish a standard, even if no product existed yet, if it determined that a mass-producible product could be made to meet the standard. Products that receive a Sec. 45M federal tax credit would not be eligible for bonus payments. | |

**Sec. 215. WaterSense**

| *Summary of section* | *Comments* |
|---|---|
| Establishes the WaterSense Program at EPA to identify and promote water efficient products, buildings and landscapes, and services to reduce water use; conserve energy used to pump, heat, transport, and treat water; and preserve water for future generations. Specifies EPA duties under the program, including promoting WaterSense-labeled products and researching and updating WaterSense criteria for product categories. Authorizes appropriations totaling $87.5 million for FY2010-FY2013, and $50 million for each year thereafter to implement this section. | In 2006 EPA established WaterSense, a voluntary labeling program to reduce water use. EPA issues performance-based water-use specifications for product categories, such as plumbing products. EPA and the Department of Energy administer a parallel energy efficiency labeling program, Energy Star, that Congress formally authorized in P.L. 109-58. |

**Sec. 216. Federal Procurement of Water Efficient Products**

| *Summary of section* | *Comments* |
|---|---|
| Directs federal agencies to procure water consuming products or services that are | The mission of the Department of Energy's FEMP is to facilitate the federal |

| *Summary of section* | *Comments* |
|---|---|
| WaterSense labeled or designated under the Federal Energy Management Program (FEMP). Allows exceptions if a product or service is not cost-effective or is not reasonably available. WaterSense-labeled and FEMP-designated products are to be clearly listed in federal procurement inventories or listing. | government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship. Executive Order 13423, Strengthening Federal Environmental, Energy, and Transportation Management (72 FR 3919, Jan. 29, 2007) sets goals for federal agencies in the areas of energy efficiency, acquisition, recycling, water conservation and others. The E.O. directs federal agencies, beginning in 2008, to reduce water consumption intensity through life-cycle cost-effective measures by 2% annually through FY2015. The FEMP has resources to assist agencies in complying with the E.O. |

### Sec. 217. Water Efficient Product Rebate Programs

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to provide funds to support state rebate or voucher programs for consumer purchase of residential water efficient products or services. Federal funds are to supplement, not supplant, state funds. Federal funds are to be allocated by EPA according to a population-based formula. Details of the rebate or voucher program are to be determined by the state. Authorizes appropriations totaling $425 million for FY2010-FY2014, and $150 million for each year thereafter to implement this section. | A number of states and localities, as well as some local water utilities, offer incentives for consumers to use water-efficient products, such as product rebates or sales-tax holiday, grants to replace or upgrade landscape irrigation equipment, rebates for replacing grass with water-efficient landscaping, and reduced rates for using reclaimed water for landscaping. Currently there are no federal programs to offer consumers rebates or assist state rebate or voucher programs. |

### Sec. 218. Certified Stoves Program

| *Summary of section* | *Comments* |
|---|---|
| Establishes an environmental performance standard for all new wood stoves and pellet stoves based on regulations set by the Environmental Protection Agency (EPA). The provision requires that old stoves replaced by the program be removed from use and the usable components and materials be recycled. Priority is given to stoves manufactured before July 1, 1990. | Establishes an environmental standard for new residential wood stoves and pellet stoves. |

| *Summary of section* | *Comments* |
|---|---|
| EPA is authorized to provide funds to state and local governments, Indian tribes, Alaskan Native villages, and certain nonprofit organizations to replace stoves that do not meet the standards. A total of $20 million is authorized for FY2010 through FY2014. Of that total, 25% is designated for Indian tribes, 3% for Alaskan Native villages, and 72% for a broader nationwide program.<br><br>EPA is authorized to accept stove replacement "supplementary environmental projects" as part of a settlement of any alleged violation of a federal environmental law. | |

### Sec. 219. Energy Star Standards

| *Summary of section* | *Comments* |
|---|---|
| Amends the statutory authority for the EPA Energy Star program to (1) establish for each category of products a scaled grading system that ranges from "A" for the most efficient product to "F" for the least efficient product, (2) require a review at least once every three years for the 10 product categories that represent the greatest amount of energy use, and (3) require periodic testing of marketed products to verify compliance with current Energy Star criteria. | Addresses a concern that technological improvements gradually erode the true energy efficiency of products identified with the EPA Energy Star label. |

## Subtitle C—Transportation Efficiency

### Sec. 221. Emission Standards

| *Summary of section* | *Comments* |
|---|---|
| Requires the President to use all current statutory authorities to set motor vehicle GHG standards. Standards must be achievable by automakers, harmonize Corporate Average Fuel Economy (CAFE) standards with any standards set by the EPA Administrator under the Clean Air Act, achieve emissions reductions at least as much as those required by California under its current vehicle GHG standards, and not preempt | This section is as amended by the Butterfield Amendment.<br><br>On April 24, 2009, EPA proposed to find that greenhouse gases endanger public health and welfare, and that emissions from motor vehicles cause or contribute to that endangerment. If EPA finalizes that proposal, then the agency is required under the Clean |

| *Summary of section* | *Comments* |
|---|---|
| California's authority to adopt and enforce new emissions standards. EPA must give automakers at least four model years of lead time.<br><br>The EPA Administrator is also required to establish GHG standards for heavy-duty vehicles and engines, non-road vehicles and engines (including locomotives and marine vessels), and aircraft. Such standards must be based on various factors, including the relative contribution to GHG emissions from that class of vehicles, the costs of achieving reductions, technology available to meet the standards, and the effects on safety and energy consumption. The Administrator is granted the authority to establish provisions for averaging, banking, and trading emissions reduction credits within or across classes of vehicles and engines. | Air Act to regulate emissions from motor vehicles. Further, EPA would also have the authority to regulate emissions from other sectors and classes of vehicles, depending on the specific sector/class. For more information, see CRS Report R40506, *Cars and Climate: What Can EPA Do to Control Greenhouse Gases from Mobile Sources?*. This amendment would require EPA to establish emission standards for these vehicles. |

## Sec. 222. Greenhouse Gas Emissions Reductions Through Transportation Efficiency

| *Summary of section* | *Comments* |
|---|---|
| States must submit to EPA goals and plans to stabilize transportation-related GHG emissions in a "designated year" (determined by the state) and reduce emissions in subsequent years. States must consider establishing 2010 as the designated year, and must update goals every four years. If a state fails to submit goals or a plan, the EPA Administrator may prohibit the awarding of federal highway funds.<br><br>Metropolitan planning organizations (MPOs) in areas with population exceeding 200,000 must update transportation plans and transportation improvement programs (TIPs) to achieve such goals. The EPA Administrator may award competitive grants to MPOs to develop or implement submitted plans. The Administrator is required to give priority to applicants based on total or per capita GHG reductions, and other factors the Administrator deems appropriate. | This section was amended by the Sullivan Amendment. |

### Sec. 223. SmartWay Transportation Efficiency Program

| *Summary of section* | *Comments* |
|---|---|
| Codifies EPA's existing SmartWay program (established under EPA's existing authority). The Administrator is required to quantify, demonstrate, and promote the benefits of technologies, products, fuels, and strategies to reduce petroleum consumption, air pollution, and GHG emissions from mobile sources. The Administrator must develop measurement protocols for fuel consumption and emissions reductions, thresholds for designating SmartWay technologies and strategies, develop programs to promote best practices, and promote the availability and adoption of SmartWay technologies and strategies. The Administrator is required to establish a SmartWay Transport Partnership to promote the efficient shipment of goods.<br><br>Requires the EPA Administrator to establish a SmartWay Financing Program. Entities receiving funds are required to use the funds to provide flexible loan and lease terms to public and private entities for the financing of low-GHG technologies and strategies. The Administrator is to determine the type of financial mechanism, the designation of eligible entities, and criteria for evaluating applications. | |

### Sec. 224. State Vehicle Fleets

| *Summary of section* | *Comments* |
|---|---|
| Amends the state vehicle fleet requirements under the Energy Policy Act of 1992 such that any guidance issued by the Department of Energy for federal fleets shall likewise apply to state and alternative fuel provider fleets. | The Energy Policy Act of 1992 requires federal agencies, state agencies, and alternative fuel providers to purchase a minimum percentage (depending on the type of fleet) of their new vehicle purchases as alternative fuel vehicles. |

# Subtitle D—Industrial Energy Efficiency Programs

## Sec. 241. Industrial Plant Energy Efficiency Standards

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to develop industrial plant energy efficiency certification standards as part of the existing DOE program of developing American National Standards Institute (ANSI) accredited standards for industrial benchmarking, and would seek ANSI accreditation of such standards. | Expands an existing industrial standards program to include energy efficiency certification. |

## Sec. 242. Electric and Thermal Waste Energy Recovery Award Programs

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to establish a monetary award program for owners and operators of electric power generation facilities and thermal energy production facilities that use fossil or nuclear fuels. The award is to encourage innovative means for recovering thermal energy as a potentially useful byproduct of electric power generation or certain other electric or thermal energy production processes. The award is capped at the value of 25% of the energy projected to be recovered or generated during the first five years of facility operation that uses the innovative method. Further, DOE is directed to provide appropriate regulatory status for thermal energy byproduct businesses of regulated electric utilities. Owners and operators of electric and thermal energy facilities are eligible for SEED Fund loans for initial capital. | An award is created to spur innovation in the recovery of thermal energy in power plants and industrial facilities. |

## Sec. 243. Clarifying Election of Waste Heat Recovery Financial Incentives

| *Summary of section* | *Comments* |
|---|---|
| Clarifying, technical amendment. | No substantive change. |

### Sec. 244. Motor Market Assessment and Commercial Awareness Program

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to assess electric motors and the national electric motor market. For key industrial and commercial subsectors, the assessment is to identify the equipment stocks and efficiency categories, estimate opportunities for energy efficiency improvements, and develop a profile of motor purchase and maintenance practices.<br><br>Requires DOE to use the assessment to develop methods of estimating energy savings and market penetration resulting from its Save Energy Now Program. DOE is also required to establish a national program targeted at motor end-users that aims to increase awareness of energy and cost-saving opportunities, improvements in motor procurement and management procedures, and decision criteria for motor repair and replacement. | DOE is directed to assess the electric motor market, identify energy efficiency improvement opportunities, and develop methods to estimate energy and cost savings and certain program impacts. |

### Sec. 245. Motor Efficiency Rebate Program

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to establish a rebate program for the purchase and distribution of energy efficient motors. For motors that meet certain efficiency standards, purchasers would be eligible for a rebate amount determined by multiplying the rated horsepower of the motor times $25. Also, distributors would be eligible for a payment related to processing and motor core disposal costs determined by multiplying the rate horsepower of the motor times $5. | A rebate program is established for users and distributors of energy efficient motors. |

## Subtitle E—Improvements in Energy Savings Performance Contracts

### Sec. 251. Energy Savings Performance Contracts

| *Summary of section* | *Comments* |
|---|---|
| Revises regulation of energy savings | |

| *Summary of section* | *Comments* |
|---|---|
| performance contracts (ESPCs) for federal agencies to require that agencies establish competitions for task and delivery orders. Further, the allowable types of energy transactions under ESPCs would be expanded to include thermal forms of renewable energy. Also, onsite renewable energy production would become eligible for helping to meet agency requirements for use of renewable energy. | |

## Subtitle F—Public Institutions

### Sec. 261. Public Institutions

| *Summary of section* | *Comments* |
|---|---|
| Expands the list of eligible facilities under the Energy Conservation Program for Schools and Hospitals to specifically include not-for-profit hospitals and not-for-profit inpatient health facilities. Further, the authorization for grants would be increased from $1 billion to $2.5 billion. | |

### Sec. 262. Community Energy Efficiency Flexibility

| *Summary of section* | *Comments* |
|---|---|
| Makes a technical amendment. | No substantive change. |

### Sec. 263. Small Community Joint Participation

| *Summary of section* | *Comments* |
|---|---|
| Expands the definition of community eligibility for DOE's Energy Efficiency and Conservation Block Grant program to include regional groups of small local governments. | |

### Sec. 264. Low Income Community Energy Efficiency Program

| *Summary of section* | *Comments* |
|---|---|
| Authorizes DOE to create a new grant program for nonprofit community development organizations that provide energy efficiency and renewable energy financing for businesses and projects in low-income communities. | |

## Subtitle G—Miscellaneous

### Sec. 271. Energy Efficient Information and Communications Technologies

| *Summary of section* | *Comments* |
|---|---|
| Requires each federal agency, in collaboration with OMB, to create an implementation strategy for the purchase and use of energy efficient information and communications technologies and practices. The strategy is to include best practices and measurement and verification techniques. Specific technologies and infrastructure are to include advanced metering, data centers, building systems energy efficiency, and telework. OMB is tasked with establishing performance goals to use for evaluating agency efforts. Not more than 18 months after enactment, OMB would be required to submit the first annual report to Congress, which would track the progress of each agency in reducing energy use and describe new and emerging technologies that could help achieve energy efficiency. | This provision would add a new area of focus to a broad array of federal agency energy efficiency measures already underway. |

### Sec. 272. National Energy Efficiency Goals

| *Summary of section* | *Comments* |
|---|---|
| Sets a national goal to improve energy productivity by at least 2.5% per year from 2012 through 2030. Within one year of enactment, DOE, EPA, and other federal agencies are required to prepare a strategic plan for attaining the annual productivity goals. The plan would identify future regulatory, funding, and policy priorities the help meet the goals; estimate energy | EIA reports that U.S. energy intensity dropped about 51.2% over the period from 1973 to 2008, which represents an average annual rate of less than 1.5% per year. This provision would call for the annual rate of improvement to increase by more than two-thirds of the past rate. |

| *Summary of section* | *Comments* |
|---|---|
| savings for each sector; and include methodologies for establishing baseline and energy savings data. Biennial updates of the plan would be required, covering progress on policy implementation and verification of energy savings. The plan and each update must be submitted to Congress and made available to the public. | |

### Sec. 273. Affiliated Island Energy Independence Team

| *Summary of section* | *Comments* |
|---|---|
| Directs DOE to establish a team of technical, policy, and financial experts to address the energy needs of each affiliated island (U.S. Trust Territory). DOE is required to consider including representatives of regional utility organizations on the team. The team is directed to provide technical, programmatic, and financial assistance to each island utility and government to develop and implement an energy action plan. Each plan would identify and implement the most cost-effective strategies to reduce dependence on fossil fuels, promote capacity development through education and training, and develop private-public partnerships. Starting one year after enactment, biannual reports to DOE would be required. Such sums as may be needed are authorized. | DOE has previously provided energy resource assessments and planning assistance to island (U.S. trust territory) governments. This provision would require that DOE provide assistance with a new round of planning and implementation assistance. |

### Sec. 274. Product Carbon Disclosure Program

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to develop a national carbon labeling and disclosure program. As a first step, EPA would be required to study the feasibility of establishing a program to measure, report, publicly disclose, and label the carbon content of products and materials sold in the United States. Based on the study, EPA would report to Congress on the likely effectiveness of such a program in helping to reduce greenhouse gas emissions. | There are some parallels to EPA's current energy labeling program. |

| *Summary of section* | *Comments* |
|---|---|
| The study would examine strengths and weaknesses of other labeling programs worldwide; identify products, processes, and sectors that could have a substantial carbon impact; identify methods for measuring lifecycle carbon content; review product accounting standards; design a label for clear and accurate communication; recommend certification and verification options; assess consumer education options; analyze costs; and evaluate incentives.<br><br>After completing the study, EPA would be required to establish a voluntary national product carbon disclosure program for wholesale and consumer markets. In designing the program, EPA is required to use incentives and develop methods for assessing, verifying, and labeling a product's greenhouse gas content. The agency is also directed to encourage participation from suppliers, manufacturers, and retailers; evaluate program effectiveness; develop training, education, and consumer awareness programs; gather public input from workshops and hearings; develop means for assessing validity of manufacturer claims; and create a process for reviewing label accuracy.<br><br>Within five years of program establishment, EPA would be required to report to Congress on program effectiveness and impact. For the study, $5 million is authorized. For the program, $25 million per year would be authorized for FY2010 through FY2025. | |

# Title III—Reducing Global Warming Pollution

### Sec. 301. Short Title

| *Summary of section* | *Comments* |
|---|---|
| Provides suggested title ─ "Safe Climate Act." | |

## Subtitle A—Reducing Global Warming Pollution

### Sec. 311. Reducing global Warming Pollution

| *Summary of section* | *Comments* |
|---|---|
| Amends the Clean Air Act (42 U.S.C. 7401 et seq.) by adding title VII, below. | |

# "Title VII—Global Warming Pollution Reduction Program"

## "Part A—Global Warming Pollution Reduction Goals and Targets"

### "Sec. 701. Findings and Purpose"

| *Summary of section* | *Comments* |
|---|---|
| Identifies threats posed by global warming. Highlights scientific studies that find links between manmade greenhouse gas (GHG) emissions and global warming. Determines that GHG emission control is vital to the mitigation of global warming and its impacts, some of which are listed. Finds that U.S. action is critical to engage other nations in international efforts. Names purpose as prevention, reduction, and mitigation of global warming and its impacts, to be accomplished by establishing an emissions trading market and advancing clean energy and efficiency technologies. | |

### "Sec. 702. Economy-Wide Reduction Goals"

| *Summary of section* | *Comments* |
|---|---|
| Lists GHG emission reduction goals as:<br>1. in 2012, U.S. GHG emissions not to exceed 97% of 2005 GHG emissions<br>2. in 2020, U.S. GHG emissions not to exceed 83% of 2005 GHG | To increase support for the bill, the 2020 goal was revised from the discussion draft, which called for emissions to not exceed 80% of 2005 levels. The 2012 goal is less stringent than targets (8% below 1990 levels by 2012) imposed by the Kyoto Protocol, which the United States did not ratify. |

| *Summary of section* | *Comments* |
|---|---|
| emissions<br>3. in 2030, U.S. GHG emissions not to exceed 58% of 2005 GHG emissions<br>4. in 2050, U.S. GHG emissions not to exceed 17% of 2005 GHG emissions | H.R. 2454 would not achieve its GHG emission reduction goals through the cap-and-trade program alone; the bill includes complementary policies—international forestry efforts, performance standards, energy efficiency—that are intended to provide reductions in addition to those imposed by the GHG emissions cap. |

**"Sec. 703. Reduction Targets for Specified Sources"**

| *Summary of section* | *Comments* |
|---|---|
| Clarifies that the emissions cap imposed by Sec. 721 would reduce GHG emissions from capped sources in relation to the economy-wide emission reduction goals in Sec. 702. For example, in 2012, GHG emissions from capped sources should not exceed 97% of GHG emissions from such sources in 2005. | |

**"Sec. 704. Supplemental Pollution Reductions"**

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to allot emission allowances to support international deforestation reduction efforts. Between 2012 and 2025, EPA is to transfer (per Sec. 781) up to 5% of each year's emission allowances to nations that enter into and implement agreements (pursuant to Part E) relating to reduction of deforestation. The allotted percentage decreases to 3% between 2026 and 2030 and 2% between 2031 and 2050. The section's objective is to support emission reductions (through avoided deforestation) that is outside of and additional to those required by the U.S. emissions cap. For example, the 2020 goal is to achieve reductions of 720 million metric tons, roughly equivalent to 10% of U.S. emissions in 2005. | The bill drafters are counting on emission reductions from this section to help meet the overall GHG emission reduction goals that the cap will not achieve by itself.<br><br>International deforestation reduction activities are also part of the international offsets program (Sec. 743). Deforestation reduction projects motivated by this section may limit to some degree the pool of international offset opportunities. |

### "Sec. 705. Review and Program Recommendations"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to prepare periodic reports to Congress—starting in 2013 and every four years thereafter—that provide (1) the latest scientific information on various climate change issues, (2) an analysis of GHG emission monitoring and verification capabilities in the United States and abroad, and (3) an assessment of both U.S. and worldwide GHG emission reduction efforts. Instructs EPA to include recommendations relevant to the three categories listed above. | |

### "Sec. 706. National Academy Review"

| *Summary of section* | *Comments* |
|---|---|
| Establishes process for scientific review to be conducted by the National Academy of Sciences (NAS). NAS is to prepare a report by July 1, 2014, and every four years thereafter. The report will include an analysis of (1) latest climate change science, (2) technological feasibility of GHG emission mitigation efforts, and (3) domestic and international efforts to mitigate climate change. (The first report will examine only the latest scientific information). This section provides considerable detail regarding what the NAS is to provide in its reports, including recommendations and identification of improvements. | |

### "Sec. 707. Presidential Response and Recommendations"

| *Summary of section* | *Comments* |
|---|---|
| Directs federal agencies ─ by July 1, 2015, and every four years thereafter ─ to address shortfalls identified in the periodic NAS reports (Sec. 705). If NAS report finds that emission reduction targets (or atmospheric concentration or safe temperature thresholds) are not on schedule, the President is to submit a plan outlining additional domestic and international reduction efforts or legislative recommendations that would address | |

| *Summary of section* | *Comments* |
|---|---|
| these concerns. | |

## "Part B—Designation and Registration of Greenhouse Gases"

### "Sec. 711. Designation of Greenhouse Gases"

| *Summary of section* | *Comments* |
|---|---|
| Designates the following gases as GHGs: (1) carbon dioxide, (2) methane, (3) nitrous oxide, (4) sulfur hexafluoride, (5) hydrofluorocarbons emitted as a byproduct, (6) perfluorocarbons, (7) nitrogen trifluoride. Sets up process by which EPA can designate other GHGs. Allows for any person to petition EPA for other manmade gases to be added as GHGs. Directs EPA to consult with the Scientific Advisory Board before making determinations. | It is unclear to which advisory board this section refers. EPA is to establish an Offsets Integrity Advisory Board per Sec. 731. In addition, Title IV, Sec. 464 directs the Secretary of Health and Human Services to establish a scientific advisory board. In addition, there already exist an EPA Science Advisory Board and a Clean Air Scientific Advisory Committee under the Clean Air Act. |

### "Sec. 712. Carbon Dioxide Equivalent Value of Greenhouse Gases"

| *Summary of section* | *Comments* |
|---|---|
| Lists the carbon dioxide equivalents of other GHGs. For example, one metric ton of methane equals 25 metric tons of carbon dioxide equivalent. Directs EPA to periodically review, not later than February 1, 2017, and every five years thereafter, the carbon dioxide equivalent values. Establishes process by which EPA can revise the values. | |

### "Sec. 713. Greenhouse Gas Registry"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA , no later than six months after enactment, to establish a federal GHG emission registry. The registry will include data on (1) GHG emissions, (2) production/importation of fuels and products that lead to GHG emissions, and (3) electricity delivered to carbon-intensive industries. Reporting entities, including covered entities and other entities that EPA determines | EPA issued a proposed rulemaking April 10, 2009 (74 FR 16448), that would require mandatory emission reporting from facilities that emit 25,000 metric tons or more per year of GHG emissions. The applicability of the proposed rulemaking may be broader than Sec. 713 requirements, but EPA has authority |

| *Summary of section* | *Comments* |
|---|---|
| will help achieve overall goals of the new title VII, must submit 2007-2010 data by March 31, 2011. For calendar year 2011 and each subsequent year, reporting entities will submit quarterly data. In creating the registry, EPA is to consider best practices from ongoing state and regional efforts. EPA is to disseminate the data to states and tribes and publish the data online as soon as practicable. | to expand coverage under Sec. 713(a)(2)(C).<br><br>Some stakeholders may worry that emission reporting requirements may lead to coverage under an emissions cap (assuming their industries are not already identified as covered), because if a source's emissions are amenable to reporting, some may make a case—for efficiency or equity reasons—for that source's inclusion under the "economy-wide" emissions cap. |

## "Part C—Program Rules"

### "Sec. 721. Emission Allowances"

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to establish a specific quantity of emission allowances (the cap), starting in 2012, based on the table provided in Sec. 721(e). Each allowance will have a unique identification number. From a legal standpoint, neither emission allowances, compensatory allowances, strategic reserve allowances, nor offset credits constitute a property right. EPA may adjust the annual caps, if specified assumptions are subsequently found to be inaccurate, such as 2005 emission levels and percentage of emissions from covered sources. Directs EPA to promulgate regulations to establish a process of providing compensatory allowances for several activities, including the use of fossil fuels (e.g., asphalt or plastic manufacturing) that does not lead to emissions. | The actual emission results in any year may not be the same as the emissions limit for that year because of various flexibility mechanisms—banking, borrowing, offsets—designed into the cap-and-trade program. |

### "Sec. 722. Prohibition of Excess Emissions"

| *Summary of section* | *Comments* |
|---|---|
| Requires covered entities, starting April 1, 2013, and each year thereafter, to have one emission allowance for each ton of carbon dioxide equivalent of GHGs that were either, depending on the type of covered | When the phase-in schedule concludes (in 2016), and all of the covered entities are subject to the cap, approximately 85% of the U.S. GHG emissions would be covered. Although this section does not specifically exclude specific emission sources, |

| *Summary of section* | *Comments* |
|---|---|
| entity, (1) directly emitted by the entity in the previous year or (2) emitted downstream in the economy in relation to a covered entity's outputs (e.g., fossil fuels) that were produced or imported for sale or distribution in the previous year. EPA will retire the held allowances after the annual deadline has passed. Covered entities (defined in Sec. 700) include electricity generators, various fuel producers and importers, fluorinated gas producers and importers, geological sequestration sites, various industrial sources, and local distribution companies (LDCs) that deliver natural gas. Compliance provisions are phased in by entity: most entities start compliance in 2012; industrial stationary sources begin compliance in 2014; natural gas LDCs begin in 2016.<br><br>Upon review, EPA may lower the emission threshold, which currently stands at 25,000 tons/year, to not less than 10,000 tons/year, after considering various factors, such as cost-effectiveness.<br><br>In 2012, approximately 30% of an entity's allowance obligation can be satisfied with offsets; this percentage increases to 67% by 2050; if all entities maximized their use of offsets, the aggregate annual number of submitted offsets would total 2 billion tons. Half of an entity's offsets can come from domestic sources and half from international sources (e.g., 15% domestic and 15% international in 2012); EPA can increase the allowable percentage for international offsets (up to 1.5 billion), if the agency determines use of domestic offsets will not be maximized in a particular year. Starting in 2018, international offsets are discounted: 1.25 offsets equals 1 emission allowance. | certain sources do not meet any of the definitions or thresholds. These uncapped sources include: agricultural emissions, residential emissions, commercial buildings, stationary sources that emit less than 25,000 tons/year. The Congressional Budget Office estimates that a total of 7,400 entities would be covered by the cap and trade program as written. According to recent EPA analysis, lowering the threshold to 10,000 tons/year would subject approximately 7,000 additional facilities to the cap, but would only cover an additional 0.6% of U.S. emissions (EPA, *Proposed Mandatory GHG Reporting Rule: Overview*, Powerpoint Presentation).<br><br>Offsets are expected to play a critical role in terms of cost containment. For example, EPA found that if international offsets are excluded, the emission allowance price would increase by 96%. Compared to other cap-and-trade programs and proposals, the offset percentage limitation in H.R. 2454 is relatively generous, particularly for international offsets. However, many details regarding offset implementation are delegated to EPA. Thus, issues, such as which types are eligible, would be determined through a rulemaking process after enactment. See CRS Report RL34436, *The Role of Offsets in a Greenhouse Gas Emissions Cap-and-Trade Program: Potential Benefits and Concerns*, by Jonathan L. Ramseur. |

### "Sec. 723. Penalty for Noncompliance"

| *Summary of section* | *Comments* |
|---|---|
| Establishes penalties for noncompliance. A covered entity must pay a penalty to EPA for each allowance the entity should have held at the compliance deadline. The penalty amount equals the emissions generated in excess to the allowances held multiplied by twice the fair market value for emission allowances in the relevant calendar year. In addition, covered entities must submit, in the following calendar year or other time period determined by EPA, allowances to cover the excess emissions from the previous year. | This provision is similar to previous cap-and-trade proposals. |

### "Sec. 724. Trading"

| *Summary of section* | *Comments* |
|---|---|
| Ensures that emission trading will not be restricted. Allows for both covered and non-covered entities to hold allowances. Holders of allowances may ask the EPA to retire the allowance. Allowance transfers are not effective until EPA receives written certification in accordance with regulations required by Sec. 721. | Some have voiced concern over the prospect of non-covered entity (e.g., banks, investment groups) participation, but others argue that such participation would strengthen the market by providing market liquidity. |

### "Sec. 725. Banking and Borrowing"

| *Summary of section* | *Comments* |
|---|---|
| Allows for unlimited banking of emission allowances for compliance in future years.<br><br>Allows entities to borrow (without interest) emission allowances from the calendar year (vintage) immediately following the compliance year. For example, vintage 2015 allowances can be used for compliance in 2014. In addition, covered entities may borrow at interest allowances (limited to 15% of their emissions) from up to five vintage years in the future. | By allowing covered entities to borrow allowances (without interest) from the next calendar year, the bill effectively creates a rolling, two-year compliance period. Compared to previous cap-and-trade proposals, this is a new design element (although the Regional Greenhouse Gas Initiative—RGGI—program has a three-year compliance period). This feature may help alleviate some of the market volatility that would otherwise exist. |

### "Sec. 726. Strategic Reserve"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to create a "strategic reserve" of approximately 2.7 billion allowances by setting aside a small number of allowances from each vintage year. EPA will conduct quarterly auctions of allowances from the strategic reserve. Only covered entities may participate in the auctions. The auctions will have a reserve price, which in 2012 will be $28/allowance and increase annually (by 5% plus inflation) in 2013 and 2014. Subsequent year reserve prices will be 60% above the 36-month rolling average allowance price. Entities are limited in the number of allowances they may purchase at each auction. Unsold allowances replenish the reserve. EPA is to use the auction proceeds to purchase international (reduced deforestation) offsets (with a 1.25 discount rate) that will replenish the strategic reserve. Under certain conditions, international (reduced deforestation) offsets may be sold by EPA at the strategic reserve auction. | A strategic reserve (SR) auction is meant to provide some cost containment, particularly for emission allowance price spikes. The level of the reserve price will influence the nature of the strategic reserve auction. For example, an SR auction with a relatively high reserve price may be used by entities only during relatively extreme price spike conditions. A relatively lower reserve price may alter the character of the SR auctions, which are held regardless of market conditions. Some covered entities may choose to purchase strategic reserve allowances (at higher than current prices) and bank the allowances for future use, in expectation that the emission allowance price will rise over time. |

### "Sec. 727. Permits"

| *Summary of section* | *Comments* |
|---|---|
| Describes procedural requirements for sources that are also subject to Title V of the Clean Air Act. Requires an entity's designated representative to file a certificate of representation. Describes procedural process for situations involving multiple owners or leasing arrangements. | |

### "Sec. 728. International Emission Allowances"

| *Summary of section* | *Comments* |
|---|---|
| Lists process by which EPA can designate an international climate change program as "qualifying." Only international allowances from "qualifying" programs can be used by covered entities for compliance purposes. Requires covered entities to certify that international | International allowances are not to be confused with international offsets.<br><br>Allows for linkage between other cap-and-trade programs, such as the European Union's Emission Trading Scheme (EU |

| *Summary of section* | *Comments* |
|---|---|
| allowances used for U.S. compliance have not been used for compliance with other programs. Allows EPA to issue a rulemaking that would modify the percentage of international offsets a covered entity may use for compliance purposes. | ETS). See CRS Report RL34150, *Climate Change and the EU Emissions Trading Scheme (ETS): Kyoto and Beyond*, by Larry Parker. |

## "Part D—Offsets"

### "Sec. 731. Offsets Integrity Advisory Board"

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to create an independent Offsets Integrity Advisory Board, which will make recommendations that include (1) which offset types should be eligible for compliance purposes, and (2) methodologies for evaluating offset projects. The Board shall by 2017, and every five years thereafter, provide an analysis to EPA of the offset program and make recommendations regarding the offset program. | The creation of an offsets board is a new development compared to previous cap-and-trade proposals. Regardless of the board's input, EPA has ultimate authority in determining eligible offset types and protocols. |

### "Sec. 732. Establishment of Offsets Program"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA, not later than two years after enactment, to promulgate regulations that establish a program for issuing offsets for compliance purposes. EPA is to consult with other federal agencies and consider the Advisory Board's (Sec. 731) recommendations. EPA must ensure that offsets are verifiable and additional, that sequestration projects are permanent, and that offsets avoid or minimize negative effects. EPA must set up an offset registry. The agency may collect fees from offset project representatives to cover administrative costs. | Although the bill identifies key principles that EPA must address, the details are to be developed through a regulatory process. Some stakeholders argue that Congress should be more explicit in legislation regarding offset implementation. Others contend that the lack of prescriptive details provides more flexibility to the agency and the offsets board. |

### "Sec. 733. Eligible Project Types"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA (through the regulatory process) to | Other cap-and-trade proposals have provided |

| *Summary of section* | *Comments* |
|---|---|
| develop a list of eligible offset project types, which can be revised at a later time. EPA must consider (and give priority to) the Advisory Board recommendations. Persons may petition EPA to add or remove offset project types from the list of eligibility. | lists of specific projects that should be eligible or, at the least, given consideration. Stakeholders in the agricultural sector have raised particular concern regarding the omission of specific project types in the legislation. |

**"Sec. 734. Requirements for Offset Projects"**

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to include certain provisions in its regulations, including project-specific standards that address additionality, baseline calculations, measurement, leakage, and uncertainty. EPA is to develop a process that accounts for offset "reversals," including mechanisms such as an offsets reserve and/or insurance. "An offsets reserve... is a program under which, before issuance of offset credits under this part, the Administrator shall subtract and reserve from the quantity to be issued a quantity of offset credits based on the risk of reversal." EPA will specify the crediting period for each offset type. The periods must fall between 5 and 10 years, except for sequestration projects. | These provisions provide both flexibility and some prescription to EPA. For example, the bill sets some parameters for crediting periods (some stakeholders may seek longer periods), but allows EPA to determine specific timeframes. The offsets reserve provisions are a new concept compared to previous cap-and-trade proposals. However, EPA is provided the authority to address reversals with this approach or another mechanism. |

**"Sec. 735. Approval of Offset Projects"**

| *Summary of section* | *Comments* |
|---|---|
| Describes the process by which an offset project representative seeks approval for a particular offset project. The representative must submit to EPA a petition that includes the information specified in EPA's forthcoming rulemaking. EPA must respond in writing to the petition within 90 days. Procedures for an appeal process are to be established by EPA. In addition, EPA is to establish a voluntary pre-approval review process as an option for project developers. | In general, there are two approaches to issuing offsets in a cap-and-trade system: a project-by-project assessment and a standards scheme. This bill adopts the former strategy. Each project must be submitted to, and approved by, EPA. Some question whether the agency would be able to process offset petitions in timely manner. On the other hand, some argue that this level of oversight is important for offset projects. |

### "Sec. 736. Verification of Offset Projects"

| *Summary of section* | *Comments* |
|---|---|
| Requires offset project representatives to provide EPA with verification from an EPA-accredited third-party. EPA is to create a process to accredit third-parties for this function. Required information (e.g., tons reduced/avoided/sequestered, methodologies used) in the verification and the schedule for its submittal will be determined by EPA. | Many consider third-party verification to be a necessary element in an offsets program. However, some question whether this requirement will create a bottleneck for issuing offsets, particularly if the supply of accredited third-parties is limited (especially in the early years). |

### "Sec. 737. Issuance of Offset Credits"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to make offset issuance determinations no later than 90 days after receipt of the third-party verification reports. EPA may issue offset credits only for approved projects (Sec. 735) and only for reductions, avoidance, or sequestration that have *already occurred* (i.e., no forward crediting) during the project's crediting period. EPA will assign a unique serial number to each offset credit. | Some sequestration offset projects may provide offsets for decades, but this section prevents project developers from receiving credit for sequestration that will occur in the future.<br><br>A tracking system with serial numbers is used to avoid situations of double-counting. |

### "Sec. 738. Audits"

| *Summary of section* | *Comments* |
|---|---|
| Authorizes EPA to conduct random audits of offset projects, credits, and practices of third-party verifiers. EPA is required to annually audit, at minimum, a representative sample of project types and geographic areas. EPA may delegate this duty to a state or tribal government. | |

### "Sec. 739. Program Review and Revision"

| *Summary of section* | *Comments* |
|---|---|
| Requires EPA to review various components — methodologies, reversal policies, accountability measures — of its offset program at least once every five years. | |

### "Sec. 740. Early Offset Supply"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to issue offset credits, if specific conditions are met, for offsets issued under other regulatory or voluntary offset programs. The following are highlights of some of the conditions:<br>• An offset project must have started after January 1, 2001.<br>• EPA can only issue offset credits for reduction/avoidance/sequestration tons that occur after January 1, 2009, and only for a limited period of time (three years after enactment or effective date of regulation, whichever is sooner).<br>• The other-program offsets must have been issued under a program that was established by state (or tribal) law or regulation, or a program specifically approved by EPA.<br>• The offset standards must have been developed through a public consultation process.<br>• All projects must have been or will be verified by a state regulatory agency or accredited third-party.<br>• Offsets are ineligible if used for compliance with a state law. | Allowing offsets to be generated from pre-exiting state or voluntary programs would increase the available supply, which may be an issue in the early years of the program. Thus, this section's purpose is largely one of transition, providing opportunity for the offset pool to increase (under existing programs), while EPA develops its offset regulations. Some may be concerned that offsets created under other systems are developed with less stringent standards, thus imposing some uncertainty as to their legitimacy. As with the offsets program in general, this section would delegate the decision to EPA regarding whether other programs, such as the Chicago Climate Exchange, could contribute offsets during the transition period and beyond. |

### "Sec. 741. Environmental Considerations"

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA, if it lists forestry projects as eligible offset types, to develop regulations that address concerns particular to forestry offsets. The list of concerns includes biodiversity, invasive species, and non-native species. | This section supplements the requirement in Sec. 732 for EPA to consider negative effects of offset projects. |

### "Sec. 742. Trading"

| *Summary of section* | *Comments* |
|---|---|
| States that Sec. 724 shall apply to offsets. | This would allow any party to hold and trade offset credits. |

### "Sec. 743. International Offset Credits"

| *Summary of section* | *Comments* |
|---|---|
| Authorizes EPA to issue (in consultation with Department of State) international offset credits. Directs EPA to promulgate regulations (considering recommendations from the Advisory Board) to carry out this section. EPA may only issue international offset credits if (1) the United States is a party to a bilateral or multilateral agreement that includes the nation hosting the offset project; and (2) the host nation is a "developing country" (defined in Sec. 700).<br><br>Establishes a process through which EPA can issue international offset credits on a sectoral basis in developing nations if such an approach is deemed appropriate to ensure the integrity of the U.S. emissions cap against carbon leakage and would encourage other counties to take measures to reduce, avoid, or sequester greenhouse gases.<br><br>Allows EPA to issue international offset credits that originate from international bodies established by the United Nations Framework Convention on Climate Change (UNFCCC), a UNFCCC protocol, or a treaty that succeeds the UNFCCC.<br><br>Authorizes EPA to issue, if certain conditions are met, international offset credits for projects that reduce deforestation. The United States must be a party to a bilateral or multilateral agreement that includes the nation hosting the offset project. A national deforestation baseline must be established in accordance with an appropriate agreement (details for developing baselines are provided). Credits can only be issued after deforestation reduction has been demonstrated using "ground-based inventories, remote sensing technology, and other methodologies" to ensure carbon stocks are measured. EPA must make country-specific | Considering the importance (e.g., cost containment) of international offsets, this section may warrant particular scrutiny. The section contains a four-prong approach to developing international offsets: (1) project-by-project; (2) sectoral offsets; (3) credits from an international body; and (4) avoided deforestation offsets.<br><br>Regarding the first method, the details—including eligible project types—are largely delegated to EPA to determine through regulation. The second method is a novel approach for cap-and-trade proposals, likely stemming from the 2008 international negotiations in Bali. It is unclear how U.S. parties would participate through this method (and the Copenhagen discussions may influence this concept). The third method, allowing EPA to issue offsets originating from a UNFCCC protocol (e.g., the Kyoto Protocol), suggests that Clean Development Mechanism (CDM) offsets would be available for compliance purposes. Although offsets generated through the CDM undergo a relatively rigorous evaluation, the CDM has received criticism on several fronts (see GAO, *Lessons Learned from the European Union's Emissions Trading Scheme and the Kyoto Protocol's Clean Development Mechanism*, 2008), but this may be partially due to its high profile. The fourth method provides the most prescriptive details in the legislative text. Although this offset category offers enormous potential, there may be questions as to whether these |

| *Summary of section* | *Comments* |
|---|---|
| adjustments, such as discounting. EPA (with Department of State) is to prepare a list of developing nations that are eligible, based on the nation's ability to monitor/measure carbon fluxes from deforestation and its institutional capacities and governance. | project types can be implemented (in accordance with Sec. 743) in a relatively short period of time (i.e., by 2012). |

## "Part E—Supplemental Emissions Reductions from Reduced Deforestation"

### "Sec. 751. Definitions"

| *Summary of section* | *Comments* |
|---|---|
| Includes definitions of five terms relevant to Part E. | |

### "Sec. 752. Findings"

| *Summary of section* | *Comments* |
|---|---|
| States that (1) deforestation amounts to approximately 20% of global GHG emissions, (2) reducing deforestation is cost-effective compared to other GHG emission mitigation efforts, and (3) reducing deforestation yields secondary benefits, such as biodiversity. | |

### "Sec. 753. Supplemental Emissions Reductions Through Reduced Deforestation"

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA, in consultation with the Departments of State and Agriculture, to promulgate regulations that create a program to allot emission allowances for supporting reduced deforestation efforts. Identifies objectives as (1) achieving 720 million tons of reductions in 2020 and a cumulative emission reduction of 6 billion tons by 2025, (2) building institutional capacities in developing nations, and (3) preserving intact, native forests. | The bill drafters are counting the supplemental reductions projected from avoided deforestation efforts toward their overall emission reduction goals, particularly in the first 10-15 years.<br><br>The specific objectives identified in this section are unlikely to be achieved with the initial 5% allotment. (See John Larsen and Robert Hellmayr, *Emission Reductions* |

| *Summary of section* | *Comments* |
|---|---|
| | *Under the American Clean Energy and Security Act of 2009*, World Resources Institute, May 19, 2009). However, Sec. 781(b) allows EPA to make adjustments (effectively borrowing future year allotments) to meet the 2020 and 2025 supplemental reduction objectives. |

**"Sec. 754. Requirements for International Deforestation Reduction Program"**

| *Summary of section* | *Comments* |
|---|---|
| Authorizes EPA to support efforts only in developing nations whose forest carbon stock presents a deforestation risk and have entered a bilateral or multilateral agreement with the United States. EPA may support projects directly or distribute allowances to established international funds. EPA must promulgate standards to ensure emission reductions from reduced deforestation are additional, measureable, verifiable, permanent, monitored, and account for leakage and uncertainty. National baselines for deforestation must be established. EPA must develop a publicly available registry of the supplemental emission reductions. | EPA may distribute the allowances (per Sec. 781) to support a wider variety of efforts than those related to international avoided deforestation offsets (Sec. 743). For example, efforts can include pilot activities that are "subject to significant uncertainty," as well as efforts that improve a developing nation's institutions and governance (at least as they relate to deforestation), but may not by themselves avoid deforestation. |

**"Sec. 755. Reports and Reviews"**

| *Summary of section* | *Comments* |
|---|---|
| Directs EPA to submit, by January 1, 2014, a report that lists the quantity of emission reductions under the program, a breakdown of allowances provided, and the activities supported by the supplemental reduction program. EPA is to conduct a review of the supplemental emission reduction program four years after enactment and every five years thereafter. The review will include an assessment of emission reductions achieved per participating nation and an examination of related factors, such as governance, biodiversity, and leakage. | This report may lead to adjustments as authorized by Sec. 781(b), allowing EPA to effectively borrow allowances allotted to future years for avoided deforestation purposes. Note that these adjustments would not impact allotments for other purposes, because EPA can only reduce the percentages allotted in future years for avoided deforestation efforts. Thus, less support for future avoided deforestation efforts may be the ultimate outcome of such an adjustment. |

### ''Sec. 756. Legal Effect of Part''

| *Summary of section* | *Comments* |
|---|---|
| States that Part E does not supersede, limit, or affect restrictions imposed by federal law on any interaction between an entity in the United States and an entity in another country. | |

### Sec. 312. Definitions

| *Summary of section* | *Comments* |
|---|---|
| Amends Title VII of the Clean Air Act (created by this legislation) by adding a definitions section before Part A. | |

### ''Sec. 700. Definitions''

| *Summary of section* | *Comments* |
|---|---|
| Provides definitions for terms relevant to title VII. | Among other terms, this section defines "covered entity," the applicability of which determines whether an emission source is subject to the cap. Some have voiced concern that the covered entity definition does not specifically exclude certain emission sources, particularly agriculture. However, the three categories of "stationary sources" within the covered entity definition identify specific industrial sectors that are subject, if they exceed the 25,000 ton annual threshold. The definition does not include a provision for EPA to add additional sources, but (per Sec. 722(g)) EPA may lower the threshold to 10,000 tons in 2020, based on certain conditions. |

## Subtitle B—Disposition of Allowances

### Sec. 321. Disposition of Allowances for Global Warming Pollution Reduction Program

| *Summary of section* | *Comments* |
|---|---|
| Adds Part H to the new Title VII of the Clean Air Act. | |

## "Part H—Disposition of Allowances"

### "Sec. 781. Allocation of Allowances for Supplemental Reductions"

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to allot particular percentages of emission allowances to support supplemental reduction efforts, i.e., including the avoided deforestation projects described in Part E. For vintage years 2012 through 2025 the program receives 5% of each year's allotment; for 2026 through 2030, 3%; for 2031 through 2050, 2%. Directs EPA to modify these percentages as necessary to meet the 2020 reduction objective (720 million metric tons of reductions in 2020, which is equivalent to 10% of U.S. emissions in 2005) and the cumulative 2025 objective (achieve total reduction of 6 billion tons). Unused allowances are to be sold at an auction (Sec. 791) in the following year, and the following vintage year's allotment (for supplemental reduction) is increased by the number of unused allowances from the previous year. | EPA will likely need to make adjustments (effectively borrowing future year allotments designated for the same purpose) to meet the 2020 and 2025 supplemental reduction objectives. See John Larsen and Robert Hellmayr, *Emission Reductions Under the American Clean Energy and Security Act of 2009* (World Resources Institute, May 19, 2009). |

### "Sec. 782. Allocation of Emission Allowances"

| *Summary of section* | *Comments* |
|---|---|
| Distributes emission allowance value (which can include auction revenue or no-cost allowances) to a range of parties, both covered and non-covered entities, to support a range of policy objectives. The distribution changes over time. In 2016, allowance value is allotted in the following manner (in some cases, the percentages are | In 2016, 17.5% of the allowances are sold through an auction; in 2030, 71.7% are auctioned. Arguably, a more important distinction is to whom the allowance value (auction revenue and/or no-cost allowance) is distributed and for what purpose. |

| *Summary of section* | *Comments* |
|---|---|
| estimates):<br>• Up to 31.5% to electricity local distribution companies (LDCs); 9% to natural gas local distribution companies; 1.5 % to states for home-heating oil consumers; 15% directly to low-income consumers<br>• 13.5% to energy-intensive, trade-exposed industries; 3.5% to merchant coal-fired generators; 2% to petroleum refineries; an unspecified share of electricity sector allowances for certain long-term power contract operators<br>• 7.5% to states to support renewable energy and energy efficiency efforts<br>• 6% to promote technological advances<br>• 10.5% to further other objectives.<br>In 2030, allotments are as follows:<br>• 36% for consumer rebate; 15% for low-income consumers<br>• 2.3% for trade-exposed industries<br>• 10% for technology;<br>• 5% energy efficiency;<br>• 8% for adaptation<br>• 8% for other objectives<br>• 16% of the 2030 allowances were sold in prior years to support consumer rebate or deficit reduction. | Energy consumers receive a substantial portion of allowance value (in some fashion) throughout the program. In 2016, 42% of no-cost allowances are provided to LDCs (and states for home heating oil users) to help energy consumers, which includes both commercial and residential sectors. As the no-cost allowances to LDCs diminish over time (reaching zero in 2030), a greater percentage of allowances are auctioned, with the revenue used to support consumer rebates. However, "consumers" in this case include households, not commercial energy users. A 15% allotment to assist low-income individuals (via tax credits) remains constant through 2050.<br><br>In the early years of the program, covered entities receive almost 20% of the allowances at no cost. Allowances allotted to covered entities are phased out over time (reaching zero by 2033).<br><br>This section directs EPA to sell a portion of future vintage-year allowances at earlier dates. For example, a percentage of vintage-2026 allowances are sold in 2015. Although covered entities can only use the 2026 allowances for compliance in 2026, the government would collect the value of 2026 allowance (as auction revenue) in 2015, and apply that value in 2015. While this creates additional funds early in the program, which are applied to deficit reduction and then to consumer rebates (in 2026), it depletes the number of allowances (and potentially the total allowance value) available for distribution in later years. The effect of this provision may have unforeseen consequences. |

## "Sec. 783. Electricity Consumers"

| *Summary of section* | *Comments* |
|---|---|
| Outlines process by which EPA is to distribute allowance value to electricity consumers, which includes both households and commercial entities. Recipients of no-cost allowances would include: electricity local distribution companies (LDCs); merchant coal-fired electric generating facilities; and specifically defined power production facilities that have entered into long-term power contracts.<br><br>Instructs EPA, based on specific parameters, to allot a portion of the percentages listed for electricity consumers in Sec. 782 to merchant coal generators and facilities in long-term power contracts; the remainder (which would represent the vast majority of the allotment) would go to LDCs.<br><br>Directs EPA to distribute allowances to LDCs based on specific formula: 50% of the distribution would be based on the $CO_2$ emissions associated with the electricity delivered to customers and 50% would be based on the quantity of electricity delivered (or sold).<br><br>Requires LDCs to use allowances "exclusively for the benefit of retail ratepayers." EPA will develop regulations with specific implementation guidelines. If LDCs choose to provide rebates, the rebates cannot be based solely upon the quantity of electricity delivered. | This section is intended to alleviate the electricity price increases that would be expected under a cap-and-trade program. Although some press reports have described allotment to LDCs as a win for industry, LDCs are different from the industrial sector that generates electricity. In general, LDCs control the wires that deliver electricity to homes and businesses. Unlike electric generating facilities, some of which are (price) regulated and some of which are not, all LDCs are regulated by a state agency that controls the price of delivered electricity.<br><br>The 50/50 formula for allowance allotment to LDCs is an attempt to address regional differences in energy use. For example, some parts of the country use a higher percentage of coal than others, and these areas are expected to experience relatively higher electricity price increases from H.R. 2454 than areas that use less-carbon intensive energy (e.g., hydropower).<br><br>Some have argued that if merchant coal-fired generators receive no-cost allowances, the facilities would simply pass along the opportunity cost of the allowances to consumers and thus gain so-called "windfall profits." (See, for example, comments and testimony from the National Association of Regulatory Utility Commissioners, at http://www.naruc.org.) Indeed, this section requires EPA (in 2014) to examine this issue. Moreover, these entities would receive allowances based on an output-based formula, which some argue would create a (perverse) incentive to generate electricity in order to receive more allowances. |

### "Sec. 784. Natural Gas Consumers"

| *Summary of section* | *Comments* |
|---|---|
| Outlines process by which EPA is to distribute allowance value to natural gas consumers, which includes both households and commercial entities. To meet this objective, EPA is to allot all of the no-cost allowances (per Sec. 782) to natural gas local distribution companies (LDCs). LDCs would receive a portion of allowances based on annual natural gas deliveries from each LDC (i.e., quantity sold).<br><br>Requires natural gas LDCs to use the allowances "exclusively for the benefit of retail ratepayers." Includes rebate provisions that are similar to electricity LDCs. Directs natural gas LDCs to use, at minimum, 33% of the allowances to support energy efficiency programs for natural gas consumers. | Similar to Sec. 783, this section is intended to alleviate the natural gas price increases that would be expected under a cap-and-trade program.<br><br>Some may question why the legislation compels natural gas LDCs to use 33% of the allowances for energy efficiency programs, while not requiring a similar carve-out for electricity LDCs. |

### "Sec. 785. Home Heating Oil and Propane Consumers"

| *Summary of section* | *Comments* |
|---|---|
| Outlines process by which EPA is to distribute allowance value to home heating oil and propane consumers, which includes both households and commercial entities. To meet this objective, EPA would distribute no-cost allowances (per Sec. 782) to states. States would receive allowances based on a ratio of each state's carbon emissions associated with home heating oil sales compared to a similar national value.<br><br>States may use allowances for either energy efficiency programs or financial assistance (rebates) to customers, but at least 50% of the allowances must be used for energy efficiency. | Similar to Sec. 783, this section is intended to alleviate the heating oil and propane price increases that would be expected under a cap-and-trade program.<br><br>Some may question why the legislative carve-out for energy efficiency (at least 50%) differs from the requirement in Secs. 783 and 784. |

**[Sec. 786 added in Title I (Clean Energy), Section 115]**

**"Sec. 787. Allocations to Refineries"**

| *Summary of section* | *Comments* |
|---|---|
| Outlines process by which EPA is to distribute no-cost allowances (per Sec. 782) to petroleum refineries. Distribution formula is based on a refinery's output and its $CO_2$ emissions intensity (emissions per unit of output). Emissions intensity includes both direct, process-related emissions and emissions associated with electricity used at a refinery (indirect emissions). | Distributing no-cost allowances to the petroleum refining industry may generate debate. This industry is sometimes not listed among the carbon-intensive, trade-exposed industries that would receive allowances per Sec. 782 (and described in Sec. 764). Providing no-cost allowances to refineries may encourage other industries to seek a share of no-cost allowances. |

**"Sec. 788. [SECTION RESERVED]"**

**"Sec. 789. Climate Change Consumer Refunds"**

| *Summary of section* | *Comments* |
|---|---|
| Directs the President (or an agency designated by the President) to annually distribute monies from the Consumer Climate Change Rebate Fund (per Sec. 782) to each household—on a per capita basis—in the United States. | The allocation to the Consumer Climate Change Rebate Fund (CCCRF) begins in 2021 and by 2030, 36% of the annual allowance value (plus additional value from future year sales) is allotted to this fund. However, this consumer assistance method differs from the assistance to consumers provided for by Secs. 783-785. Those provisions would support both households and commercial entities. The CCCRF only helps households. Moreover, the allotment from CCCRF (unlike Secs. 783-785) would not account for regional differences in energy use or carbon content of energy use. |

**"Sec. 790. Exchange for State-Issued Allowances"**

| *Summary of section* | *Comments* |
|---|---|
| Instructs EPA to promulgate regulations that would establish a process by which any person can exchange emission allowances issued before December 31, 2011, by California or the Regional Greenhouse Gas Initiative (RGGI) for | This section relates to Sec. 861, which effectively pre-empts state/regional cap-and-trade programs (until 2018). The exchange will not necessarily be a one-to-one swap. EPA's regulations will provide that a person exchanging a "state allowance" receive a |

| *Summary of section* | *Comments* |
|---|---|
| emission allowances under this title. | Title III allowance that is "sufficient to compensate" for the cost of obtaining (this is specifically defined) and holding a state allowance.<br><br>Title III allowances allotted for this purpose will be deducted from the "allowances to be auctioned pursuant to section 782(b)." This citation is likely incorrect, because it is a holdover from the "discussion draft."<br><br>It is difficult to assess the quantity of state emission allowances that will be exchanged. A rough calculation: assuming RGGI entities (the only state program in operation) would need to exchange a year's amount of allowances (188 million tons), this would account for about 4% of the 2012 federal cap. However, RGGI allowance prices have hovered around $3.50/ton. Assuming an exchange based solely on price (assuming a $15/ton price for federal allowances) would thus reduce the 2012 allowance pool by 1%. |

**"Sec. 791. Auction Procedures"**

| *Summary of section* | *Comments* |
|---|---|
| Establishes auction format and procedures. Directs EPA to promulgate regulations, within 12 months of enactment, that govern allowance auctions. Auctions will be held quarterly, starting no later than March 31, 2011. The auctions will include a reserve price, starting at $10/allowance (in 2009 dollars) and increasing by 5% plus inflation each year. At each auction, EPA will offer both current and some proportion of future vintage allowances. Auctions will follow a single-round, sealed-bid, uniform price format. Auctions will be open to any person. EPA may require demonstrations of financial assurance as a condition of participation. Persons may not purchase more than 5% of allowances offered in any auction. EPA may revise auction design (through the regulatory process) if the agency determines an alternative design is more | The auction format largely follows the auction scheme used in RGGI, which has held three auctions, all of which have been successful. However, a federal emission allowance auction would be both larger in scale and broader in scope. Although this section is relatively prescriptive regarding the auction design, EPA has authority to alter the format.<br><br>The reserve price provision was not included in the "discussion draft." A reserve price may help alleviate market volatility to some degree and provide assurance to parties making emission reductions that the reductions will have some value in the allowance market. |

| *Summary of section* | *Comments* |
|---|---|
| effective. | |

### "Sec. 792. Auctioning Allowances for Other Entities"

| *Summary of section* | *Comments* |
|---|---|
| Allows for any holder of emission allowances to request that EPA auction their allowances. EPA will sell the allowances during one of the quarterly auctions per Sec. 791. EPA may permit allowance holders to set a reserve price for their allowances. However, allowance holders from foreign nations (selling allowances received per avoided deforestation projects) may not request a reserve price. EPA is to promulgate regulations to implement this section within 24 months of enactment. | Without this section, parties that receive allowances at no cost would need to sell the allowances in the secondary market, either through a market exchange or an over-the-counter transaction. This activity may involve some level of transaction cost. This section provides the opportunity for parties to effectively let EPA conduct the transaction (through an auction). It is uncertain whether parties would receive a higher price through the latter route. Indeed, there is some evidence (from RGGI) that the market price dips right before an auction event. |

### "Sec. 793. Establishment of Funds"

| *Summary of section* | *Comments* |
|---|---|
| Establishes the Strategic Reserve Fund and the Climate Change Consumer Refund Fund. | The "Climate Change Consumer Refund Fund" likely refers to the fund described in Sec. 789, which is called the "Consumer Climate Change Rebate Fund." Note that the name of this fund is slightly different in Sec 782(r), where it is called the "Climate Change Consumer Refund Account." |

## Subtitle C—Additional Greenhouse Gas Standards

### Sec. 331. Greenhouse Gas Standards

| *Summary of section* | *Comments* |
|---|---|
| Amends the Clean Air Act to include a new subtitle C at the end of the new Title VII. | |

# ‘‘Title VIII—Additional Greenhouse Gas Standards

### ‘‘Sec. 801. Definitions’’

| *Summary of section* | *Comments* |
|---|---|
| Provides a revised definition of “stationary source” under this title (Title VIII). | For this title, the threshold for a “stationary source is lowered from 25,000 metric tons under Title VII to 10,000 metric tons of carbon dioxide equivalent. |

## ‘‘Part A—Stationary Source Standards’’

### ‘‘Sec. 811. Standards of Performance’’

| *Summary of section* | *Comments* |
|---|---|
| Generally provides that EPA promulgate New Source Performance Standards (NSPS) under Sec. 111 of the Clean Air Act for categories of uncapped stationary sources that emit more than 10,000 tons of carbon dioxide equivalent annually. Stipulates the schedule for promulgation of the NSPS for various categories that is not subject to judicial review. Sources of enteric fermentation are expressly exempted from these provisions. In setting the appropriate NSPS, EPA is to take into account projections of allowance prices to ensure that the marginal costs imposed by such standards are not expected to exceed those projected allowance prices. | The provision focuses on categories of stationary sources that are responsible for at least 20% of uncapped greenhouse gases (or 10% of uncapped methane emissions). EPA is not required to make an “endangerment finding” under these provisions to promulgate the necessary NSPS.<br><br>Stationary sources controlled under the Title VII emissions cap would not be subject to a greenhouse gas NSPS under these provisions.<br><br>Some have voiced concern that the performance standards would make certain projects—methane from landfills and/or coal mines—ineligible as offsets under the cap-and-trade program. |

## Part C—Exemptions from Other Programs

### ‘‘Sec. 831. Criteria Pollutants’’

| *Summary of section* | *Comments* |
|---|---|
| Provides that a greenhouse gas can not be listed as a criteria air pollutant under Sec. 108(a) of the Clean Air Act on the basis of its effect on climate | Prevents EPA from regulating greenhouse gases via a National Ambient Air Quality Standard (NAAQS) because of their climate |

| *Summary of section* | *Comments* |
|---|---|
| change. | impacts.<br><br>For more information on stationary sources of greenhouse gases and the Clean Air Act, see CRS Report R40585, *Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act*, by Larry Parker and James E. McCarthy. |

**''Sec. 832. International Air Pollution''**

| *Summary of section* | *Comments* |
|---|---|
| Provides that Sec. 115 of the Clean Air Act shall not apply to a greenhouse gas because of its climate impact. | Prevents EPA from regulating greenhouse gases via the international air pollution provisions of the Clean Air Act. |

**''Sec. 833. Hazardous Air Pollutants''**

| *Summary of section* | *Comments* |
|---|---|
| Provides that a greenhouse gas can not be added to the list of hazardous air pollutants under Sec. 112 of the Clean Air Act unless such gas meets the listing criteria of Sec. 112(b) on a basis other than its climate change effects. | Prevents EPA from regulating greenhouse gases via the hazardous air pollution provisions of the Clean Air Act. |

**''Sec. 834. New Source Review''**

| *Summary of section* | *Comments* |
|---|---|
| Provides that a greenhouse gas can not be subject to the New Source Review provisions of the Prevention of Significant Deterioration (Part C of the Clean Air Act) program solely on the basis of its effect on climate change or its regulation under Title VII. | Prevents new or modified stationary sources from coming under the Clean Air Act's New Source Review provisions (including the requirement to install best available control technology or BACT) solely because they emit greenhouse gases. |

### "Sec. 835. Title V Permits"

| *Summary of section* | *Comments* |
|---|---|
| Provides that in determining whether a source is covered under the permitting provisions of Title V of the Clean Air Act, EPA shall not consider the source's GHG emissions. | Prevents any source (large or small) from having to obtain a state permit under Title V of the Clean Air Act solely because they emit greenhouse gases. |

### Sec. 332. HFC Regulation

| *Summary of section* | *Comments* |
|---|---|
| Amends Title VI of the Clean Air Act to add a new program to reduce hydrofluorocarbons (HFCs) | HFCs are very powerful greenhouse gases. A common use for HFCs (specifically HFC-134a) is as a refrigerant in automobile air conditioning systems. |

### "Sec. 619. Hydrofluorocarbons (HFCS)"

| *Summary of section* | *Comments* |
|---|---|
| Creates a separate cap-and-trade program to reduce emissions of hydrofluorocarbons (HFCs). Basically, the section puts 20 HFC substances in a new class II, group II category to be regulated under Title VI of the Clean Air Act. Beginning in 2012, producers and importers of any class II, group II substance are required to hold a consumption allowance or destruction offset credit for each $CO_2$-equivalent ton of class II, group II substance. The consumption allowances available are capped and that cap is steadily reduced from 90% of the average annual consumption during a 2004-2006 baseline to 15% of that baseline after 2032. Allowances may be banked for future use.<br><br>Consumption allowances are divided into two pools: a producer-importer pool with 80% of available allowances and a secondary pool with 20% of available allowances. In the producer-importer pool, 10% of available consumption allowances are auctioned in 2012, increasing steadily to 90% in 2020 and thereafter. Only covered entities may participate in the auction. The remaining consumption allowances are to be | The cap-and-trade program for HFCs under Title VI is completely separate from the cap-and-trade program for other greenhouse gases set up under the new Title VII.<br><br>The set price for the pool of consumption allowances not auctioned (and for the secondary pool) is set at $1 an allowance in 2012, rising to the average of $1.40 and the 2016 auction clearing price in 2017. For the allowances in the producer-importer pool, these allowances are available to covered entities based on their share of production, importation, or acquisitions, minus exports.<br><br>Auctions are to be held once a year and follow a single-round, sealed-bid uniform price format.<br><br>Program provides for an exception to the reduction program for specific essential uses: medical devices, aviation safety, natural security (fire suppression, etc.) and exports to developing countries.<br><br>All proceeds from auctions and sales are |

| *Summary of section* | *Comments* |
|---|---|
| offered for sale by EPA at a set price for the years 2012-2017, and at the auction clearing price thereafter.<br><br>For the secondary pool, EPA provides for the sale of available consumption allowances at the same price as the un-auctioned allowances above. Covered entities and specific other entities that have taken significant steps to purchase or import any class II, group II substance, or produced or imported any such substance in 2004-2006 are eligible for this pool.<br><br>EPA regulations are to provide offset credits for the destruction of chlorofluorocarbons (CFCs) equal to 80% of the carbon dioxide equivalent reduction achieved by the destruction.<br><br>Other provisions include the regulation of small containers of class II, group II substances used to refill motor vehicle air conditioners. | deposited in a Stratospheric Ozone and Climate Protection Fund to encourage the recovery, recycling, and reclamation of any Class II substance (subject to appropriations) in order to reduce emissions. |

**Sec. 333. Black Carbon**

| *Summary of section* | *Comments* |
|---|---|
| Requires EPA to submit a report to Congress on black carbon abatement within one year of enactment.<br><br>Also amends the new Title VIII of the Clean Air Act to provide for black carbon mitigation (see below). | |

## ‘‘Part E—Black Carbon’’

**‘‘Sec. 851. Black Carbon’’**

| *Summary of section* | *Comments* |
|---|---|
| Authorizes EPA to propose a finding that existing Clean Air Act provisions adequately address black carbon emissions or to promulgate a regulation to reduce black carbon emissions. | Authorizes such sums as necessary to fund this section. |

| *Summary of section* | *Comments* |
|---|---|
| Requires EPA to submit a report to Congress on U.S. efforts internationally to reduce, mitigate, and abate black carbon emissions. The report shall also identify opportunities and recommendations to achieve significant emission reductions in foreign countries through technical and other assistance. | |

**Sec. 334. States**

| *Summary of section* | *Comments* |
|---|---|
| Amends Sec. 116 of the Clean Air Act ─ which allows for states to implement more stringent air pollution standards for stationary sources than the federal government ─ to clarify that the phrase "standard or limitation respecting emissions of air pollutants" includes provisions relating to GHG emission controls. | This section should be read in conjunction with Sec. 335 ("sec. 861") below, which effectively pre-empts state/regional cap-and-trade programs for a specific period of time. |

**Sec. 335. State Programs**

| *Summary of section* | *Comments* |
|---|---|
| Amends Title VIII of the Clean Air Act by adding Part F─"Miscellaneous." | |

## "Part F─Miscellaneous"

**"Sec. 861. State Programs"**

| *Summary of section* | *Comments* |
|---|---|
| Prohibits states from implementing or enforcing a GHG emission cap that covers any (federally) capped emissions during the years 2012 through 2017. Clarifies that a cap does not include fleet-wide motor vehicle emission requirement or life-cycle fuel standards. This section is "notwithstanding section 116." Sec. 116 allows states to implement more stringent standards at stationary sources, including (per Sec. 334 of this bill) GHG emission controls. | Effectively provides federal pre-emption of state cap-and-trade program for covered entities from 2012 through 2017. However, it does not pre-exempt state programs that reduce greenhouse gas emissions by means other than a cap-and-trade program (e.g., fleet-wide motor vehicle emissions requirements). |

### "Sec. 862. Grants for Support of Air Pollution Control Programs"

| *Summary of section* | *Comments* |
|---|---|
| Authorizes the EPA to make grants to air pollution control agencies for purposes of providing implementation assistance in terms of this act. | |

### Sec. 336. Enforcement

| *Summary of section* | *Comments* |
|---|---|
| Amends Sec. 307 of the Clean Air Act to provide that (1) in cases where the EPA is found to have erred in an action, the court may remand that action, without vacatur, if vacatur would impair or delay protection of the environment or public health or timely achievement of the purposes of the Clean Air Act; (2) a petition for reconsideration shall be considered denied for the purpose of judicial review if EPA does not take final action on such petition within 150 days; and (3) that the party denied the petition may seek judicial review in the appropriate court of appeals. | Attempts to prevent delays in environmental regulation through two means: (1) permits the courts to remand an EPA regulation back for reconsideration without requiring the court to vacate the entire rule if doing so would harm public health or the environment; and (2) attempts to prevent EPA from delaying consideration of petitions for reconsideration by putting a 150-day limit on EPA's review process before the petition would be automatically denied and the petitioner could then seek a judicial remedy. |

### Sec. 337. Conforming Amendments

| *Summary of section* | *Comments* |
|---|---|
| Makes various conforming amendments to existing laws. | |

### Sec. 338. Davis-Bacon Compliance

| *Summary of section* | *Comments* |
|---|---|
| Recipients of emission allowances are required to provide reasonable assurances that all laborers and mechanics employed by contractors and subcontractors on funded projects, including the Carbon Storage Research Corporation, will be paid wages at rates not less than those prevailing on projects of a character similar in the locality. | Laborers working on retrofitting certain residential properties are exempted. |

## Subtitle D—Carbon Market Assurance

### Sec. 341. Carbon Market Assurance

| *Summary of section* | *Comments* |
|---|---|
| Amends the Federal Power Act to include a new Part IV at the end entitled "Carbon Market Assurance." | Provides for the regulation of trading in regulated allowances and regulated allowance derivatives. (Both these terms are defined in this section.) |

## "Part IV—Carbon Market Assurance"

### ''Sec. 401. Oversight and Assurance of Carbon Markets"

| *Summary of section* | *Comments* |
|---|---|
| Provides for the Federal Energy Regulatory Commission (FERC) to regulate the cash market in emission allowances and offsets created under Title VII of the Clean Air Act and directs the President to delegate regulatory authority for the derivatives market to "an appropriate agency." FERC is to promulgate regulations for the establishment, operation, and oversight of the cash market, within 18 months of enactment, designed to prohibit fraud, market manipulation, and excess speculation, and provide measures to limit unreasonable allowance price fluctuations. Participants are limited to no more than a 10% position in any class of regulated allowance or allowance derivative, and FERC has the authority to suspend or revoke the registration of any trading entity violating any rule or order issued under this subsection.<br><br>Taking into consideration the recommendations of an interagency working group created under the bill, the President is to delegate to appropriate agencies the authority to promulgate regulations for the establishment, operation, and oversight of all markets for regulated allowance derivatives. The purposes of the derivatives provisions are similar to those above for the cash market. Each federal agency that is designated under these provisions shall have the same authority to enforce compliance as does the Commodity | Regulation of derivatives contracts (futures, options, etc.) based on allowances would fall to the Commodity Futures Trading Commission (CFTC) under current law. This section might assign that responsibility to another agency (or group of agencies), at the President's discretion.<br><br>The bill specifies that the CFTC is to be the default regulator, until (or unless) the President designates another agency. |

| *Summary of section* | *Comments* |
|---|---|
| Futures Trading Commission (CFTC). | |

## Subtitle E—Additional Market Assurance

### Sec. 351. Regulation of Certain Transactions in Derivatives Involving Energy Commodities

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 1a and other sections of the Commodity Exchange Act to increase oversight of carbon markets. Under its provisions energy commodities (as defined) are taken out of the "exempt commodity" category, meaning that energy derivatives must be traded on a CFTC-regulated exchange unless the CFTC issues a specific exemption.<br><br>The section would also restrict CFTC's authority to issue such exemptions—the CFTC must provide 60 days advance notice and take public comments. Limits on CFTC's exemptive authority would apply not only to prospective OTC energy contracts, but also to contracts listed on a foreign futures exchange that involve delivery in the United States or that are traded over a computer located in the United States.<br><br>In addition, the CFTC is required to establish position limits setting ceilings on the number of energy contracts that any person could hold, and creates a Position Limit Energy Advisory Group to make recommendations to the CFTC regarding appropriate levels for position limits. Exemptions from the position limits would be available only for "bona fide hedging transactions," defined as either traders directly involved in physical energy markets, or financial intermediaries who are dealing with such traders.<br><br>Finally, the CFTC is required to publish data on positions of swap dealers and index traders (such as institutional investors and financial intermediaries that deal in derivatives). This | These and most other provisions in this subtitle affect existing energy derivatives markets, not just those based on carbon allowances.<br><br>The Commodity Exchange Act (CEA) currently provides a statutory exemption for over-the-counter (OTC) derivatives based on non-agricultural commodities. This means that legislation is necessary to give CFTC power to regulate OTC derivatives.<br><br>CFTC currently has authority to set position limits, but delegates that authority to the exchanges. There are no position limits applicable to OTC derivatives.<br><br>Index trading—strategies that generate returns replicating an index of commodity prices—by pension funds and others was blamed by some observers for the run up in oil prices in 2008. CFTC disagreed, but does not routinely collect data on index trading. |

| *Summary of section* | *Comments* |
|---|---|
| provision would apply to all commodities, not just energy. | |

### Sec. 352. No Effect on Authority of the Federal Energy Regulatory Commission

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 2 of the Commodity Exchange Act to provide that the Act does not affect FERC's regulatory jurisdiction. | |

### Sec. 353. Inspector General of the Commodity Futures Trading Commission

| *Summary of section* | *Comments* |
|---|---|
| Amends the Commodity Exchange Act to make the Inspector General (IG) of the CFTC a presidential appointee. | Under current law, the IG is appointed by the CFTC chairman. |

### Sec. 354. Settlement and Clearing Through Registered Derivatives Clearing Organizations

| *Summary of section* | *Comments* |
|---|---|
| Amends the Commodity Exchange Act to require that over-the-counter (OTC) derivative contracts, such as swaps, be settled and cleared through a derivatives clearing organization (DCO) registered with the CFTC. DCOs would be required to disclose information about the terms and conditions of contracts, the methodology for determining margin requirements, and data regarding prices, volume, and open interest. In addition, DCOs would have to adopt fitness standards for directors and certain other parties.<br><br>CFTC would be authorized to issue exemptions from the clearing requirement for certain OTC contracts that are not standardized instruments, but contracts so exempted would still have to be reported to the CFTC. | Clearing houses are a standard feature of the futures exchanges. They are a central point for collection of data on all traders' positions; the CFTC currently obtains daily figures from exchange clearing houses on large trader positions. |

### Sec. 355. Limitation on Eligibility to Purchase a Credit Default Swap

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 4c of the Commodity Exchange Act to set new eligibility requirements for trading credit default swaps. Participation in that market would be limited to those who (1) own the credit instrument that the credit swap was insuring, (2) would experience financial loss if the credit event that triggers the swap insurance payment were to occur, or (3) met capital adequacy standards to be established by the CFTC in consultation with the Federal Reserve. | The collapse of AIG in 2008 was attributed to trading in "naked" credit swaps—basically insurance contracts sold to speculators who did not have an insurable interest in the bonds for which the swaps provided insurance against default. |

### Sec. 356. Transaction Fees

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 12 of the Commodity Exchange Act to authorize the CFTC to set and collect fees from registered clearing organizations at a rate calculated to cover the cost of derivatives regulation (with the exception of costs directly related to enforcement). Fee rates would be adjusted annually so that amounts collected would approximate the CFTC's budget authority for non-enforcement activities. | The Securities and Exchange Commission and the federal bank regulators have long been funded by fees and assessments on the financial institutions and markets they regulate. Every administration since President Reagan's has proposed similar fees for the futures market, but none has been enacted. |

### Sec. 357. No Effect on Authority of the Federal Trade Commission

| *Summary of section* | *Comments* |
|---|---|
| The subtitle does not affect FERC jurisdiction to obtain information, carry out enforcement activities or other responsibilities under either the Federal Trade Commission Act or EISA. | Specifies that nothing in this act diminishes the jurisdiction or authority of the Federal Trade Commission. |

### Sec. 358. Regulation 0f Carbon Derivatives Markets

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 2 of the Commodity Exchange Act to specify that the CFTC is the default regulator of allowance derivatives until and unless the President designates another agency. | See Sec. 341 above. The category of "energy commodity" does not exist in current law, but would be created by Sec. 351 of this act. |

| *Summary of section* | *Comments* |
|---|---|
| Also specifies that allowance derivatives are to be regulated like energy commodity contracts—they must be traded on an exchange unless the CFTC issues a specific exemption. | |

**Sec. 359. Cease-and-Desist Authority**

| *Summary of section* | *Comments* |
|---|---|
| Amends Section 20 of the Natural Gas Act to authorize FERC to issue cease-and-desist orders for violations. Provides for administrative and judicial review of such orders. | Market regulators such as the CFTC and SEC already have such authority. |

# Title IV—Transitioning to a Clean Energy Economy

## Subtitle A—Ensuring Real Reductions In Industrial Emissions

**Sec. 401. Ensuring Real Reductions in Industrial Emissions**

| *Summary of section* | *Comments* |
|---|---|
| Amends Title VII of the Clean Air Act by inserting a new "Part F—Ensuring Real Reductions in Industrial Emissions." | For further information on trade and carbon leakage, see CRS Report R40100, *"Carbon Leakage" and Trade: Issues and Approaches*, by Larry Parker and John Blodgett. |

## "Part F—Ensuring Real Reductions in Industrial Emissions."

**"Sec. 761. Purposes"**

| *Summary of section* | *Comments* |
|---|---|
| Lists five environmental and economic purposes for the provisions of Part 1. | The purpose of the new Part F is both environmental in terms of reducing potential carbon leakage resulting from potential shifts of production and investment from the United States to countries without carbon |

| *Summary of section* | *Comments* |
|---|---|
| | controls, and economic in terms of preventing the associated job loss from such a shift. |

**"Sec. 762. International Negotiations"**

| *Summary of section* | *Comments* |
|---|---|
| States U.S. policy is to negotiate binding agreements with all major greenhouse gas-emitting countries to equitably reduce emissions. Foreign countries will be notified by the President no later than January 1, 2020, that the International Reserve Allowance Program described below may apply to them if their carbon policies are determined to be inadequate. | The International Reserve Allowance Program is a border adjustment scheme that would be imposed if provisions of Subpart 1 failed to prevent carbon leakage (as discussed in Subpart 2 below). |

**"Sec. 763. Definitions"**

| *Summary of section* | *Comments* |
|---|---|
| The new Part F generally uses the same definitions as those used in Title VII above, with some specific additions here with respect to defining terms such as eligible sectors and products. | Coverage is for primary products, such as iron, steel, aluminum, cement, and the like. It does not include finished goods, such as automobiles. |

**"Subpart 1—Emission Allowance Rebate Program"**

**"Sec. 764. Eligible Industrial Sectors"**

| *Summary of section* | *Comments* |
|---|---|
| Requires EPA to publish a list of eligible industrial sectors and amount of allowances to be rebated per unit of production for the next two years by June 30, 2011 (revised every four years thereafter). As determined by EPA, presumptively eligible sectors, based on six-digit NAICS classification, are those who meet energy or greenhouse gas intensity criteria (specifically, that energy or greenhouse gas costs are at least 5% of the value of the their shipments) and trade exposure criteria (specifically, a trade intensity of | This new Part F is a modified version of the Inslee-Doyle proposal (H.R. 1759). It creates a rebate program directed at energy/greenhouse gas-intensive, trade-exposed industries harmed by the direct emissions reduction costs and indirect increased energy input costs from implementing Title VII.<br><br>The criteria reflects those contained in H.R. 1759, but with a modification of the |

| *Summary of section* | *Comments* |
|---|---|
| at least 15%); or have very high energy or greenhouse gas intensity (at least 20%). The bill specifies data sources to be used in these determinations and, specifically, annual average data for the 2004-2006 time period, unless unavailable. The bill also has provisions allowing individual entities to petition for inclusion under the program. | greenhouse gas intensity calculation and the addition of the very energy or greenhouse gas intensive category. |

**"Sec. 765. Distribution of Emission Allowance Rebates"**

| *Summary of section* | *Comments* |
|---|---|
| Based on the best data available, EPA is to provide the rebate to eligible companies based on a two-part formula: (1) 100% of the industry's average emissions per unit of output times the company's average output over the preceding two years (direct emissions); and (2) average emissions per kilowatt-hour of electricity purchased by the company times the industry average electricity used per unit of output over the preceding two years times an electricity efficiency factor to be determined by EPA (indirect emissions). Entities not covered by Title VII are eligible for the indirect emissions rebate. If these formulas result in more allowance needs than provided under the bill, the allocations to entities would be reduced on a pro rata basis to match the allowances available.<br><br>Unless modified by the President, the allowance rebates are phased-out over a 10-year period, beginning in 2026. The President may modify the phase-out schedule for a sector if more than 70% of global output for that sector is still produced by countries with inadequate carbon policies. | H.R. 1759 contains an 85% electricity efficiency factor, and an 85% direct emission factor to encourage innovations to reduce emissions. These factors are effectively eliminated in H.R. 2454, which bases these calculations on 100% of the industry's average emissions and electricity use. |

## "Subpart 2—International Reserve Allowance Program"

### "Sec. 766. International Reserve Allowance Program"

| *Summary of section* | *Comments* |
|---|---|
| Within 24 months of a President's determination under Sec. 767, EPA is to promulgate rules establishing an appropriate price and distribution system for international reserve allowances. These allowances will be required for importation into the United States of any covered primary product as determined by EPA. Exemptions are provided for least developed countries or countries who emit less than 0.5% of global greenhouse gas emissions. The purpose of the program is to address the competitive imbalance of production costs resulting from the direct and indirect costs of implementing Title VII. The international reserve allowances issued under this program may not be used by covered entities to comply with the emissions cap under Title VII. Also, this program may not begin before January 1, 2025. | Whether this program can be designed in a manner that would sustain a challenge before the World Trade Organization (WTO) is a hotly debated topic. |

## "Subpart 3—Presidential Determination"

### "Sec. 767. Presidential Reports and Determinations"

| *Summary of section* | *Comments* |
|---|---|
| Requires the President by January 1, 2018, to submit a report to Congress on the effectiveness of the emission rebates under Subtitle 1 at mitigating carbon leakage and recommendations on improving the subtitle's purposes. By June 30, 2022, and every four years thereafter, the President shall determine for each eligible industrial sector whether more than 70% of global output for that sector is from countries that either (1) are parties to international agreements requiring binding national commitments, or within the eligible industrial sector; (2) have annual energy or greenhouse gas intensities comparable or better than the equivalent U.S. sector; or (3) have implemented policies that are at 60% of equivalent U.S. cost of complying with Title VII. If not, the President shall no later than | Implementation of an international reserve allowance program is not automatic, but based on criteria and a Presidential determination that it would be effective in addressing carbon leakage within an eligible industrial sector. |

| *Summary of section* | *Comments* |
|---|---|
| June 30, 2022 (and every four years thereafter) assess the effectiveness of Subpart 1 rebates and the international reserve allowance program in mitigating or potentially mitigating the carbon leakage in that sector, and respond by either modifying the rebate formula under Subpart 1, implementing an international reserve allowance program, or both. | |

## Subtitle B—Green Jobs and Worker Transition

### Part 1—Green Jobs

#### Sec. 421. Clean Energy Curriculum Development Grants

| *Summary of section* | *Comments* |
|---|---|
| The Secretary of Education may competitively award grants to eligible partnerships for developing programs focused on emerging careers and jobs in renewable energy, energy efficiency, and climate change mitigation. Partnerships shall include at least one local agency eligible for funding under Sec. 131 of the Perkins Career and Technical Education Act of 2006 (PCTEA), or an area career and technical education school or education service agency; at least one post-secondary institution eligible for PCTEA funding; and representatives of the community (including business, labor or industry) with experience in clean energy. Application criteria and priorities are prescribed. A peer review panel (comprised of educators and clean energy professionals) is to review applications and recommend awards. | The term "Green Jobs" is undergoing definition at the Labor Department as to what these jobs are, and under which sector or sectors they will be classified under the North American Industry Classification System (NAICS). The NAICS is used by the federal government to collect and analyze data with regard to the U.S. economy. There is agreement that Green Jobs will relate to renewable energy and energy efficiency, but the extent to which these jobs will be exclusive to these areas is under debate as the skills and training necessary may be transferable from and to other job classifications. |

#### Sec. 422. Increased Funding for Energy Worker Training Program

| *Summary of section* | *Comments* |
|---|---|
| Section 171(e)(8) of the Workforce Investment Act of 1998 is amended by striking $125,000,000 and adding $150,000,000. | |

## Part 2—Climate Change Worker Adjustment Assistance

### Sec. 425. Petitions, Eligibility Requirements, and Determinations

| *Summary of section* | *Comments* |
|---|---|
| Workers can file for certification of eligibility as a group, or a union or authorized representative can file on their behalf with the Labor Secretary and the governor of the state where the workers are employed. Workers can then apply for adjustment assistance, subsequent to a hearing to determine if they are eligible. Partial or total separation from employment or such a possibility will be considered by the Secretary in the determination of eligibility. Impacts are defined which may be felt by workers in energy-intensive or energy-producing industries which may be affected by measures to mitigate climate change (pursuant to Title VII of the Clean Air Act). The Labor Secretary will make a determination of eligibility for assistance and inform the industry of the finding. | The level and specialization of these jobs could vary from tradesmen such as electricians and welders to technical engineers or financial managers, and from intellectual design to maintenance workers. |

### Sec. 426. Program Benefits

| *Summary of section* | *Comments* |
|---|---|
| Rules for eligibility under the program are established. Eligibility for payments under the program make the worker ineligible for certain other benefits (unemployment insurance) while receiving a climate change adjustment allowance. Workers must participate in retraining programs during the period of eligibility (no longer than 156 weeks). Workers may be eligible for employment services, on-the-job training, and career counseling. Funds will be made available to states to assist in these purposes. | Climate change mitigation may affect the competitiveness of U.S. industries. As such, if a group of workers can show how their current or prospective employment is impaired by such measures, then these workers may apply for climate change adjustment assistance. Assistance may include a monetary allowance while workers are retrained or otherwise seeking new jobs or seeking full employment if their work hours are reduced. Assistance may be provided for up to three years for eligible workers. |

### Sec. 427. General Provisions

| *Summary of section* | *Comments* |
|---|---|
| The Labor Secretary may enter into agreements with states for the workforce investment purposes such as mentioned above. Data sharing may be required with the federal government for coordination, program control, verification and review. Penalties for fraud and collection of overpayment are described. The program will not displace employed workers or impair existing contracts. | Funds will be made available to states to carry out the retraining, on-the-job training, career counseling or other employment services. The federal government may seek to audit use of funds and applicants to guard against fraud or misuse of funds. |

## Subtitle C—Consumer Assistance

### Sec. 431. Energy Tax Credit

| *Summary of section* | *Comments* |
|---|---|
| Amends the Internal Revenue Service code by adding Section 36A to Subpart C of Part IV of Subchapter A of Chapter 1. | |

### "Sec. 36B. Energy Tax Credit"

| *Summary of section* | *Comments* |
|---|---|
| Amends the Internal Revenue Service code (Title 26) by adding an income tax credit that would seek to alleviate the effects of higher energy prices on low-income households.<br><br>Directs EPA to determine the average annual reduction in purchasing power that the cap-and-trade program would impose on low-income households (bottom 20%) of varying sizes. EPA must factor in the benefit of no-cost distribution of allowances, such as those provided (for consumer benefit) to LDCs.<br><br>Restricts credit to incomes below a certain level.<br><br>Reduces tax credit for households if they participate in the energy refund program in Sec. 432 (below). | This credit would be funded from the auction revenues allotted for low-income consumers (per Sec. 782(d)).<br><br>Tax credit would only be available to individuals or households that file a tax return. Section 432 would address non-filing households.<br><br>The Congressional Budget Office (CBO) estimates that a family of four would be eligible for the credit if their income was below $42,000. In addition, CBO estimates (in 2012) an individual would receive an annual credit of $161; a five-person household would receive $359. See CBO, *Congressional Budget Office Cost Estimate: H.R. 2454 – American Clean Energy and* |

| *Summary of section* | *Comments* |
|---|---|
| | *Security Act of 2009* (June 2009). |

### Sec. 432. Energy Refund for Low-Income Consumers

| *Summary of section* | *Comments* |
|---|---|
| Establishes a program to provide a monthly cash refund to low-income households. The monthly refund would be based on the average annual reduction in purchasing power that the cap-and-trade program would impose on low-income households: equal to one-twelfth of the tax credit determined by EPA pursuant to Sec. 431 ("Sec. 36B") above.<br><br>Households that participate in other low-income subsidy programs (e.g., food stamps) would automatically be included.<br><br>Monthly refund would be deposited directly into eligible bank accounts or distributed through a state's existing electronic benefit transfer system. | This refund would be funded from the auction revenues allotted for low-income consumers (per Sec. 782(d)).<br><br>This section is meant to cover the low-income households that do not file income tax returns, and thus would not be eligible for the tax credits per Sec. 431. |

## Subtitle D—Exporting Clean Technology

### Sec. 441. Findings and Purposes

| *Summary of section* | *Comments* |
|---|---|
| Provides developing countries with assistance from the United States to encourage widespread deployment of technologies that reduce GHG emissions, and encourage developing countries to adopt policies and measures that will reduce GHG emissions. | Climate change mitigation is perceived as being in the best interests of the American people, and recognition is given that most new growth in GHG emissions may result from energy and economic activity in developing countries.<br><br>Assistance to help deploy clean energy technologies in developing countries is seen as the route to GHG mitigation, and the benefits of such a program to the technology deployment cycle and development of markets for U.S. industries is recognized. |

| *Summary of section* | *Comments* |
|---|---|
| | Emissions allowances will be set aside from the Clean Air Act provisions and placed in the International Clean Technology Account (ICTA). This will be the mechanism used to provide assistance to developing countries for climate change mitigation, and implies such emissions allowances will be an international marketable commodity. |

**Sec. 442. Definitions**

| *Summary of section* | *Comments* |
|---|---|
| *Allowance*—An emission allowance established under Sec. 721 of CAA.<br><br>*Appropriate Congressional Committees*—House: Energy and Commerce, Foreign Affairs. Senate: Environment and Public Works, Energy and Natural Resources, Foreign Relations.<br><br>*Convention*—United Nations Framework Convention on Climate Change<br><br>*Developing Country*—Country eligible to receive assistance from the World Bank.<br><br>*Eligible Country*—A developing country determined by the President under Sec. 454 as eligible to receive assistance from the International Clean Technology Fund (ICTF).<br><br>*Interagency Group*—Group established by the President under Sec. 453 to administer the ICTF.<br><br>*International Clean Technology Account*—The account to which the Administrator allocates allowances under Sec. 782(o) of the CAA.<br><br>*Least Developed Country*—A foreign country the United Nations has identified as among the least developed of developing countries.<br><br>*Qualifying Activity*—An activity that meets the criteria in Sec. 445. | |

| *Summary of section* | *Comments* |
|---|---|
| *Qualifying Entity*—A national, regional, or local government in, or a nongovernmental organization or private entity located or operating in, an eligible country. | |

### Sec. 443. Governance

| *Summary of section* | *Comments* |
|---|---|
| Establishes an International Clean Technology Fund in the U.S. Treasury. An Interagency Group is to consist of the Secretaries of State, Energy, and the Treasury, the EPA Administrator, and any other federal agency head or executive branch appointee the President designates. The Secretary of State is to chair the Group. | |

### Sec. 444. Determination of Eligible Countries

| *Summary of section* | *Comments* |
|---|---|
| Directs the President to publish a list of countries eligible for assistance no later than January 1, 2012, and revise this list annually. Criteria for eligibility shall include developing countries that have signed and ratified an agreement or treaty to undertake GHG mitigation activities; a determination by the President that such activities will achieve substantial, measurable and verifiable GHG reductions (relative to business as usual); and such other criteria as the President determines. | The Development Assistance Committee of the Organization for Economic Co-operation and Development (OECD) will decide which countries are "developing countries," and thus eligible to receive assistance.<br><br>It is noted that while a category of "least developed countries" is defined, there is no subsequent mention or note of whether specific advantage or disadvantage results from such a designation (as compared to "developing country" status). |

### Sec. 445. Qualifying Activities

| *Summary of section* | *Comments* |
|---|---|
| Assistance under this subtitle may be provided only to qualifying entities for clean technology activities that contribute to substantial, measurable, reportable, and verifiable reductions, sequestration, or avoidance of greenhouse gas emissions including— | U.S. assistance is linked to "nationally appropriate mitigation" strategies in the eligible country to achieve "substantial reductions, sequestration or avoidance of greenhouse gas emissions." This may mean that assistance is primarily targeted at |

| *Summary of section* | *Comments* |
|---|---|
| (1) deployment of technologies to capture and sequester carbon dioxide emissions from electric generating units or large industrial sources<br><br>(2) deployment of renewable electricity generation from wind, solar, sustainably-produced biomass, geothermal, marine, or hydrokinetic sources;<br><br>(3) substantial increases in the efficiency of electricity transmission, distribution, and consumption;<br><br>(4) deployment of low- or zero emissions technologies that are facing financial or other barriers to their widespread deployment which could be addressed through support under this subtitle in order to reduce, sequester, or avoid GHG emissions;<br><br>(5) reduction in transportation sector emissions through increased transportation system and vehicle efficiency or use of transportation fuels that have lifecycle greenhouse gas emissions that are substantially lower than those attributable to fossil fuel-based alternatives;<br><br>(6) reduction in black carbon emissions; or<br><br>(7) capacity building activities. | industrializing economies with substantial GHG emissions.<br><br>The establishment of viable measuring and reporting capabilities in developing countries is recognized as a necessary tool in understanding GHG emissions impacts and eventual mitigation. |

**Sec. 446. Assistance**

| *Summary of section* | *Comments* |
|---|---|
| Authorizes the Secretary of State, in consultation with the Interagency group, to provide assistance from the ICTF for projects in eligible countries. Assistance may be in the form of grants, loans, or other assistance. Distribution of assistance from the ICTF may be direct, via the World Bank or other international development bank or institution; through an international fund created by the UNFCCC; or through some combination of these mechanisms. The Interagency Group will establish criteria for project selection. The | |

| *Summary of section* | *Comments* |
|---|---|
| Secretary of State shall monitor project performance and shall have authority to terminate assistance in whole or part for noncompliance with the approved proposal. | |

# Subtitle E. Adapting to Climate Change

## Part 1. Domestic Adaptation

### Subpart A. National Climate Change Adaptation Program

| *Summary of subpart* | *Comments* |
|---|---|
| Directs the President to establish a National Climate Change Program within the U.S. Global Change Research Program (USGCRP) to increase the effectiveness of federal climate change adaptation efforts.<br><br>Establishes a National Climate Service within NOAA to develop climate information, forecasts and warnings, and to distribute information related to climate impacts to state, local and tribal governments and the public.<br><br>Beginning no later than FY2012 and annually though 2050, the EPA Administrator must distribute emission allowances to states on the basis of population and the ratio of each state's per capita income relative to that of the United States as a whole. Allowances must be sold within one year, with proceeds deposited into the State Energy and Environment Development (SEED) Funds and used to support State Climate Adaptation Plans according to rules promulgated within two years of enactment. To be eligible to receive these allowances, each state must gain federal approval of its state climate adaptation plan within two years of enactment. State reporting and independent evaluation are required within one year of receiving allowances and every two years thereafter. | Parts 1 and 2 establish cooperative federal programs to reduce domestic and international vulnerabilities to climate change, and to develop adaptation strategies and plans. The Parts fund the new programs with proceeds from distribution of allowances.<br><br>Part 1 establishes three overlapping domestic programs with distinct interagency coordination bodies, program offices, requirements for assessments, adaption plans and strategies, funding mechanisms, and reporting requirements. Part 2 addresses an international adaptation assistance program. |

## Subpart B. Public Health and Climate Change

| *Summary of subpart* | *Comments* |
|---|---|
| States the sense of the Congress that the federal government should "use all practicable means and measures" to assist the efforts of public health professionals and communities to adjust health systems to address impacts of climate change, to ensure they have sufficient information, to encourage research, to enhance preparedness, and to encourage public education, and to assist developing nations to prepare health systems to respond to climate change.<br><br>Requires the Secretary of Health and Human Services (HHS) to prepare a national strategic action plan to prepare for and respond to public health impacts of climate change in the United States and other nations, in consultation with relevant agencies and stakeholders. The plan must be revised by 2014 and every four years thereafter. Requires a public health needs assessment from the National Research Council and the Institute of Medicine within one year of enactment.<br><br>A Climate Change Health and Protection Fund is established in Treasury, without specification of the source of resources to be deposited into the Fund, except that the funds should supplement existing sources of funding. The Secretary of HHS may distribute funds from the Fund to federal agencies, other governments, or other entities, to carry out any of the provisions of the health and climate change provisions in this subtitle. | |

## Subpart C. Natural Resource Adaptation

| *Summary of subpart* | *Comments* |
|---|---|
| States that federal policy is "to use all practicable means and measures to protect, restore, and conserve natural resources to enable them to become more resilient, adapt to, and withstand the impacts of climate change and ocean acidification" (hereafter "adapt to"). | |

| *Summary of subpart* | *Comments* |
|---|---|
| Directs the Chair of the Council on Environmental Quality (CEQ) to advise the President on development and implementation of a Natural Resources Climate Change Adaptation Strategy and federal natural resource agency adaptation plans, and to coordinate such strategies and activities. Each agency represented on the Panel must consider climate change impacts and ocean acidification in agency plans and activities, and develop a Natural Resources Climate Change Adaptation Strategy within one year after development of the national adaptation strategy. After approval by the President, agencies must report these agency strategies to relevant congressional committees.<br><br>Establishes a new Natural Resources Climate Change Adaptation Panel as a forum for coordination of related federal agencies' adaptation strategies, plans, programs and activities. CEQ is to chair the Panel. The Panel must be established within 90 days of enactment of the law, and include NOAA, Forest Service, National Park Service, U.S. Fish and Wildlife Service, Bureau of Land Management, USGS, Bureau of Reclamation, Bureau of Indian Affairs, EPA, Army Corps of Engineers, and CEQ. The Panel must develop the Natural Resources Climate Change Adaptation Strategy within two years of enactment.<br><br>A Science Advisory Board appointed by the Secretaries of Commerce and Interior shall advise the Program. Its advice and recommendations shall be publicly available.<br><br>Directs the Administrator of NOAA and the Director of the U.S. Geological Survey (USGS) to establish a Natural Resource Climate Change Adaptation Science and Information Program, to be led by the USGS National Global Warming and Wildlife Center and the National Climate Service in NOAA. This Program is to provide technical assistance, research, monitoring tools, and information. The Secretaries of Commerce and Interior must conduct five-year surveys of natural resources impacts of climate change and | |

| *Summary of subpart* | *Comments* |
|---|---|
| ocean acidification, monitoring of baselines and trends, and stakeholder needs for monitoring, research, and decision tools.<br><br>Establishes a fund in a new Natural Resources Climate Change Adaptation Account in Treasury. Specifies percentages of the amounts allocated from the fund to states for various categories of adaptation activities and resources. To be eligible for more than three years for funding from the new fund, each state must prepare a state natural resources adaptation plan, to include priorities, programs, measures of effectiveness, and to be reviewed and updated every five years. Directs percentages of the fund to support a variety of agencies, governments, and programs.<br><br>Establishes a National Wildlife Habitat and Corridors Information Program within DOI to support States and Tribes to develop a geographic information system of fish and wildlife habitat and corridors for information and modeling of climate change impacts and adaptation, and to enhance state wildlife action plans. | |

**Part 2. International Climate Change Adaptation Program**

| *Summary of section* | *Comments* |
|---|---|
| The Secretary of State, with the Administrators of the U.S. Agency for International Development (USAID) and EPA, and the Secretary of Treasury, is to establish an International Climate Change Adaptation Program.<br><br>Directs that an unspecified portion of allowances be allocated to carry out an International Climate Change Adaptation Program, supplementing other available U.S. public resources for similar activities. 40%-60% of these allowances may be distributed to multilateral funds if any meet specified conditions, and provided that at least 15 days advance notice is given to Congress. The Secretary of State or other agency designated by the President shall oversee the distribution of allowances to multilateral funds or international | |

| *Summary of section* | *Comments* |
|---|---|
| institutions.<br><br>USAID may carry out programs and give allowances to any private or public group to assist with the development of adaptation plans and projects to assist the most vulnerable developing countries, support investments, research programs and activities, and encourage engagement of local communities. No more than 10% of the allowances distributed for bilateral assistance in a year may support activities in any one country. The USAID Administrator must provide for consultation and disclosure of information to stakeholders regarding any programs or activities carried out under this section.<br><br>The Administrator of USAID must report within 180 days after enactment, and within 18 months to the President and Congress, and annually thereafter. The reports would detail potential impacts and ramifications, describe how allowances were distributed, make recommendations, and describe cooperation with other countries and international organizations. | |

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