



Greenhouse Gas Legislation: Summary and Analysis of H.R. 2454 as Passed by the House of Representatives

Mark Holt, Coordinator
Specialist in Energy Policy

Gene Whitney, Coordinator
Section Research Manager

July 27, 2009

Congressional Research Service

7-5700

www.crs.gov

R40643

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). It was passed in the House on June 26, 2009, by a recorded vote of 219-212.

H.R. 2454 contains provisions that would amend the Clean Air Act to establish a cap-and-trade system designed to reduce greenhouse gas emissions from covered sources 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 and industrial sources, and a midstream mandate on 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 directs the Environmental Protection Agency (EPA) to establish greenhouse gas emissions standards for various transportation sectors. The bill would also significantly modify the definition of “renewable biomass” under the renewable fuel standard (RFS), expanding the allowable pool of agricultural and forestry feedstocks that could be used.

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.

Contents

Introduction and Overview of Legislation	1
Combined Efficiency and Renewable Electricity Standard.....	1
Geologic Sequestration of Carbon Dioxide.....	2
Vehicles and Fuels	3
Smart Grid.....	4
Energy Efficiency	4
Major Cap-and-Trade Provisions.....	6
Provisions in Title V Added by the “Manager’s Amendment”	10
Title I—Clean Energy	13
Subtitle A—Combined Efficiency and Renewable Energy Standard	13
Sec. 101. Combined Efficiency and Renewable Energy Standard.....	13
Sec. 102. Clarifying State Authority to Adopt Renewable Energy Incentives.....	15
Sec. 103. Federal Renewable Energy Purchases.....	16
Subtitle B—Carbon Capture and Sequestration	17
Sec. 111. National Strategy.....	17
Sec. 112. Regulations for Geologic Sequestration Sites	17
Sec. 113. Studies and Reports.....	18
Sec. 114. Carbon Capture and Sequestration Demonstration and Early Deployment Program	18
Sec. 115. Commercial Deployment of Carbon Capture and Sequestration Technologies.....	20
Sec. 116. Performance Standards for Coal-Fueled Power Plants	22
Subtitle C—Clean Transportation.....	25
Sec. 121. Electric Vehicle Infrastructure	25
Sec. 122. Large-Scale Vehicle Electrification Program	25
Sec. 123. Plug-in Electric Drive Vehicle Manufacturing	26
Sec. 124. Investment in Clean Vehicles	26
Sec. 125. Advanced Technology Vehicle Manufacturing Incentive Loans.....	27
Sec. 126. Definition of Renewable Biomass	27
Sec. 127. Open Fuel Standard.....	27
Deleted Old Sec. 128. Temporary Vehicle Trade-in Program (New Sec. 128 Below).....	28
Sec. 128. Diesel Emissions Reduction	28
Sec. 129. Loan Guarantees for Projects to Construct Renewable Fuel Pipelines	29
Sec. 130. Fleet Vehicles.....	29
Sec. 130A. Report on Natural Gas Vehicle Emissions Reductions.....	29
Subtitle D—State Energy and Environment Development Accounts	29
Sec. 131. Establishment of SEED Funds	29
Sec. 132. Support of State Renewable Energy and Energy Efficiency Programs.....	30
Sec. 133. Support of Indian Renewable Energy and Energy Efficiency Programs.....	31
Subtitle E—Smart Grid Advancement	31
Sec. 141. Definitions (no summary or comments).....	31
Sec. 142. Assessment of Smart Grid Cost-Effectiveness in Products	31
Sec. 143. Inclusions of Smart Grid Capability on Appliance ENERGY GUIDE Labels	32
Sec. 144. Smart Grid Peak Demand Reduction Goals	32

Sec. 145. Reauthorization of Energy Efficiency Public Information Program to Include Smart Grid Information	34
Sec. 146. Inclusion of Smart-Grid Features in Appliance Rebate Program	34
Subtitle F—Transmission Planning	34
Sec. 151. Transmission Planning and Siting.....	34
Sec. 152. Net Metering for Federal Agencies.....	36
Sec. 153. Support for Qualified Advanced Electric Transmission Manufacturing Plants, Qualified High Efficiency Transmission Property, and Qualified Advanced Electric Transmission Property	37
Subtitle G—Technical Corrections to Energy Laws	38
Sec. 161. Technical Corrections to Energy Independence and Security Act of 2007	38
Sec. 162. Technical Corrections to Energy Policy Act of 2005.....	38
Subtitle H—Energy and Efficiency Centers and Research	38
Sec. 171. Energy Innovation Hubs.....	38
Sec. 172. Advanced Energy Research.....	39
Sec. 173. Building Assessment Centers	40
Sec. 174. Centers for Energy and Environmental Knowledge and Outreach.....	40
Sec. 175. High Efficiency Gas Turbine Research, Development, and Demonstration	41
Subtitle I—Nuclear and Advanced Technologies	41
Sec. 181. Revisions to Loan Guarantee Program Authority.....	41
Sec. 182. Purpose.....	41
Sec. 183. Definitions	41
Sec. 184. Clean Energy Investment Fund.....	42
Sec. 185. Energy Technology Deployment Goals.....	42
Sec. 186. Clean Energy Deployment Administration.....	42
Sec. 187. Direct Support	43
Sec. 188. Indirect Support	43
Sec. 189. Federal Credit Authority.....	43
Sec. 190. General Provisions	44
Sec. 191. Conforming Amendments	44
Subtitle J—Miscellaneous	44
Sec. 195. Increased Hydroelectric Generation at Existing Federal Facilities.....	44
Sec. 196. Clean Technology Business Competition Grant Program.....	44
Sec. 197. National Bioenergy Partnership.....	45
Sec. 198. Office of Consumer Advocacy	45
Sec. 199. Development Corporation for Renewable Power Borrowing Authority.....	45
Sec. 199A. Study.....	46
Title II—Energy Efficiency	46
Subtitle A—Building Energy Efficiency Programs	46
Sec. 201. Greater Energy Efficiency in Building Codes	46
Sec. 202. Building Retrofit Program.....	46
Sec. 203. Energy Efficient Manufactured Homes.....	47
Sec. 204. Building Energy Performance Labeling Program.....	47
Sec. 205. Tree Planting Programs	48
Sec. 206. Energy Efficiency for Data Center Buildings.....	48
Sec. 207. Community Building Code Administration Grants	49
Sec. 208. Solar Energy Systems Building Permit Requirements for Receipt of Community Development Block Grant Funds	49

Sec. 209. Prohibition of Restrictions on Residential Installation of Solar Energy System.....	50
Subtitle B—Lighting and Appliance Energy Efficiency Programs.....	50
Sec. 211. Lighting Efficiency Standards	50
Sec. 212. Other Appliance Efficiency Standards	51
Sec. 213. Appliance Efficiency Determinations and Procedures	51
Sec. 214. Best-in-Class Appliances Deployment Program.....	52
Sec. 215. WaterSense	53
Sec. 216. Federal Procurement of Water Efficient Products.....	54
Sec. 217. Early Adopter Water Efficient Product Incentive Programs.....	54
Sec. 218. Certified Stoves Program	54
Sec. 219. Energy Star Standards	55
Subtitle C—Transportation Efficiency.....	55
Sec. 221. Emission Standards.....	55
Sec. 222. Greenhouse Gas Emissions Reductions Through Transportation Efficiency	56
Sec. 223. SmartWay Transportation Efficiency Program.....	57
Sec. 224. State Vehicle Fleets	57
Subtitle D—Industrial Energy Efficiency Programs.....	58
Sec. 241. Industrial Plant Energy Efficiency Standards	58
Sec. 242. Electric and Thermal Waste Energy Recovery Award Programs	58
Sec. 243. Clarifying Election of Waste Heat Recovery Financial Incentives	58
Sec. 244. Motor Market Assessment and Commercial Awareness Program	59
Sec. 245. Motor Efficiency Rebate Program	59
Sec. 246. Clean Energy Manufacturing Revolving Loan Fund Program	59
Sec. 247. Clean Energy and Efficiency Manufacturing Partnerships	60
Sec. 248. Technical Amendments	60
Subtitle E—Improvements in Energy Savings Performance Contracts	61
Sec. 251. Energy Savings Performance Contracts.....	61
Subtitle F—Public Institutions	61
Sec. 261. Public Institutions	61
Sec. 262. Community Energy Efficiency Flexibility	61
Sec. 263. Small Community Joint Participation	61
Sec. 264. Low Income Community Energy Efficiency Program.....	62
Sec. 265. Consumer Behavior Research	62
Subtitle G—Miscellaneous.....	62
Sec. 271. Energy Efficient Information and Communications Technologies	62
Sec. 272. National Energy Efficiency Goals	63
Sec. 273. Affiliated Island Energy Independence Team.....	63
Sec. 274. Product Carbon Disclosure Program.....	64
Sec. 275. Industrial Energy Efficiency Education and Training Initiative	65
Sec. 276. Sense of Congress (on Aircraft Emissions)	65
Subtitle H—Green Resources for Energy Efficient Neighborhoods.....	65
Sec. 281. Short Title.....	65
Sec. 282. Definitions	66
Sec. 283. Implementation of Energy Efficiency Participation Incentives for HUD Programs	66
Sec. 284. Basic HUD Energy Efficiency Standards and Standards for Additional Credit.....	66

Sec. 285. Energy Efficiency and Conservation Demonstration Program for Multifamily Housing Projects Assisted with Project-Based Rental Assistance.....	68
Sec. 286. Additional Credit for Fannie Mae and Freddie Mac Housing Goals for Energy Efficient and Location-Efficient Mortgages	68
Sec. 287. Duty to Serve Underserved Markets for Energy-Efficient and Location-Efficient Mortgages.....	69
Sec. 288. Consideration of Energy Efficiency Under FHA Mortgage Insurance Programs and Native American and Native Hawaiian Loan Guarantee Programs	70
Sec. 289. Energy Efficient Mortgages and Location-Efficient Mortgages Education and Outreach Campaign.....	70
Sec. 290. Collection of Information on Energy-Efficient and Location Efficient Mortgages through Home Mortgage Disclosure Act	71
Sec. 291. Ensuring Availability of Homeowners Insurance for Homes Not Connected to Electricity Grid	71
Sec. 292. Mortgage Incentives for Energy Efficient Multifamily Housing.....	71
Sec. 293. Energy Efficient Certifications for Manufactured Housing with Mortgages	71
Sec. 294. Assisted Housing Energy Loan Pilot Program	72
Sec. 295. Making it Green	72
Sec. 296. Residential Energy Efficiency Block Grant Program	72
Sec. 297. Including Sustainable Development and Transportation Strategies in Comprehensive Housing Affordability Strategies	73
Sec. 298. Grant Program to Increase Sustainable Low-Income Community Development Capacity	73
Sec. 299. HOPE VI Green Developments Requirement	74
Sec. 299A. Consideration of Energy-Efficiency Improvements in Appraisals.....	74
Sec. 299B. Housing Assistance Council	74
Sec. 299C. Rural Housing and Economic Development Assistance.....	75
Sec. 299D. Loans to States and Indian Tribes to Carry Out Renewable Energy Sources Activities	75
Sec. 299E. Green Banking Centers.....	75
Sec. 299F. GAO Reports on Availability of Affordable Mortgages.....	76
Sec. 299G. Public Housing Energy Cost Report.....	76
Sec. 299H. Secondary Market for Residential Renewable Energy Lease Instruments	76
Sec. 299I. Green Guarantees	77
Title III—Reducing Global Warming Pollution.....	77
Sec. 301. Short Title.....	77
Subtitle A—Reducing Global Warming Pollution	78
Sec. 311. Reducing Global Warming Pollution	78
“Title VII—Global Warming Pollution Reduction Program”	78
“Part A—Global Warming Pollution Reduction Goals and Targets”	78
“Sec. 701. Finding and Purpose”	78
“Sec. 702. Economy-Wide Reduction Goals”	78
“Sec. 703. Reduction Targets for Specified Sources”	79
“Sec. 704. Supplemental Pollution Reductions”	79
“Sec. 705. Review and Program Recommendations”	80
“Sec. 706. National Academy Review”	80
“Sec. 707. Presidential Response and Recommendations”	81
“Part B — Designation and Registration of Greenhouse Gases”	81

“Sec. 711. Designation of Greenhouse Gases”	81
“Sec. 712. Carbon Dioxide Equivalent Value of Greenhouse Gases”	82
“Sec. 713. Greenhouse Gas Registry”	82
“Part C — Program Rules”	82
“Sec. 721. Emission Allowances”	82
“Sec. 722. Prohibition of Excess Emissions”	83
“Sec. 723. Penalty for Noncompliance”	85
“Sec. 724. Trading”	85
“Sec. 725. Banking and Borrowing”	86
“Sec. 726. Strategic Reserve”	86
“Sec. 727. Permits”	87
“Sec. 728. International Emission Allowances”	87
“Part D — Offsets”	88
“Sec. 731. Offsets Integrity Advisory Board”	88
“Sec. 732. Establishment of Offsets Program”	88
“Sec. 733. Eligible Project Types”	88
“Sec. 734. Requirements for Offset Projects”	89
“Sec. 735. Approval of Offset Projects”	89
“Sec. 736. Verification of Offset Projects”	90
“Sec. 737. Issuance of Offset Credits”	90
“Sec. 738. Audits”	90
“Sec. 739. Program Review and Revision”	91
“Sec. 740. Early Offset Supply”	91
“Sec. 741. Environmental Considerations”	92
“Sec. 742. Trading”	92
“Sec. 743. International Offset Credits”	92
“Part E — Supplemental Emissions Reductions from Reduced Deforestation”	94
“Sec. 751. Definitions”	94
“Sec. 752. Findings”	94
“Sec. 753. Supplemental Emissions Reductions Through Reduced Deforestation”	94
“Sec. 754. Requirements for International Deforestation Reduction Program”	95
“Sec. 755. Reports and Reviews”	96
“Sec. 756. Legal Effect of Part E”	96
Sec. 312. Definitions	96
“Sec. 700. Definitions”	96
Subtitle B—Disposition of Allowances	97
Sec. 321. Disposition of Allowances for Global Warming Pollution Reduction Program	97
“PART H—DISPOSITION OF ALLOWANCES”	98
“Sec. 781. Allocation of Allowances for Supplemental Reductions”	98
“Sec. 782. Allocation of Emission Allowances”	98
“Sec. 783. Electricity Consumers”	100
“Sec. 784. Natural Gas Consumers”	102
“Sec. 785. Home Heating Oil, Propane, and Kerosene Consumers”	103
[Sec. 786 added in Title I (Clean Energy), Section 115]	103
“Sec. 787. Allocations to Refineries”	103
“Sec. 788. Supplemental Agriculture and Renewable Energy Incentives Programs”	103
“Sec. 789. Climate Change Consumer Refunds”	104

“Sec. 790. Exchange for State-Issued Allowances”	104
“Sec. 791. Auction Procedures”	105
“Sec. 792. Auctioning Allowances for Other Entities”	106
“Sec. 793. Establishment of Funds”	107
“Sec. 794. Oversight of Allocations”	107
“Sec. 795. Exchange for Early Action Offset Credits”	107
Subtitle C—Additional Greenhouse Gas Standards.....	108
Sec. 331. Greenhouse Gas Standards	108
“Title VIII—Additional Greenhouse Gas Standards.....	108
“Sec. 801. Definitions”	108
“Part A — Stationary Source Standards”.....	108
“Sec. 811. Standards of Performance”	108
“Part C — Exemptions from Other Programs”	109
“Sec. 831. Criteria Pollutants”	109
“Sec. 832. International Air Pollution”	109
“Sec. 833. Hazardous Air Pollutants”	109
“Sec. 834. New Source Review”	110
“Sec. 835. Title V Permits”	110
Sec. 332. HFC Regulation	110
“Sec. 619. Hydrofluorocarbons (HFCs)”	110
Sec. 333. Black Carbon	112
“Part E — Black Carbon”	112
“Sec. 851. Black Carbon”	112
Sec. 334. States	112
Sec. 335. State Programs	113
“Part F — Miscellaneous”	113
“Sec. 861. State Programs”	113
“Sec. 862. Grants for Support of Air Pollution Control Programs”	113
Sec. 336. Enforcement	113
Sec. 337. Conforming Amendments	114
Sec. 338. Davis-Bacon Compliance.....	114
Summary of section	114
Comments.....	114
Sec. 339. National Strategy for Domestic Biological Carbon Sequestration	114
Sec. 340. Reducing Acid Rain and Mercury Pollution.....	114
Subtitle D—Carbon Market Assurance.....	115
Sec. 341. Carbon Market Assurance	115
“Part IV—Carbon Market Assurance”	115
“Sec. 401. Oversight and Assurance of Carbon Markets”	115
Sec. 342. Carbon Derivative Markets	116
Subtitle E—Additional Market Assurance	117
Sec. 351. Regulation of Certain Transactions in Derivatives Involving Energy Commodities.....	117
Sec. 352. No Effect on Authority of the Federal Energy Regulatory Commission.....	118
Sec. 353. Inspector General of the Commodity Futures Trading Commission	118
Sec. 354. Settlement and Clearing Through Registered Derivatives Clearing Organizations.....	118
Sec. 355. Limitation on Eligibility to Purchase a Credit Default Swap	118
Sec. 356. Transaction Fees	119

Sec. 357. No Effect on Antitrust Law or Authority of the Federal Trade Commission.....	119
Sec. 358. Effect of Derivatives Regulatory Reform Legislation	119
Sec. 359. Cease-and-Desist Authority.....	120
Sec. 360. Presidential Review of Regulations	120
Title IV — Transitioning to a Clean Energy Economy	120
Subtitle A— Ensuring Real Reductions In Industrial Emissions.....	120
Sec. 401. Ensuring Real Reductions in Industrial Emissions	120
“Part F—Ensuring Real Reductions in Industrial Emissions”	120
“Sec. 761. Purposes”	120
“Sec. 762. Definitions”	121
“Subpart 1—Emission Allowance Rebate Program”	121
“Sec. 763. Eligible Industrial Sectors”	121
“Sec. 764. Distribution of Emission Allowance Rebates”	122
“Subpart 2 — Promoting International Reductions in Industrial Emissions”	123
“Sec. 765. International Negotiations”	123
“Sec. 766. United States Negotiating Objectives with respect to Multilateral Environmental Negotiations”	124
“Sec. 767. Presidential Reports and Determinations”	124
“Sec. 768. International Reserve Allowance Program”	125
“Sec. 769. Iron and Steel Sector”	126
Subtitle B—Green Jobs and Worker Transition.....	126
Part 1—Green Jobs	126
Sec. 421. Clean Energy Curriculum Development Grants	126
Sec. 422. Increased Funding for Energy Worker Training Program	127
Sec. 423. Development of Information and Resources Clearinghouse for Vocational Education and Job Training in Renewable Energy Sectors.....	127
Sec. 424. Monitoring Program Effectiveness	127
Sec. 424A. Green Construction Careers Demonstration Project	128
Part 2—Climate Change Worker Adjustment Assistance.....	128
Sec. 425. Petitions, Eligibility Requirements, and Determinations	128
Sec. 426. Program Benefits	129
Sec. 427. General Provisions	129
Subtitle C—Consumer Assistance	129
Sec. 431. Energy Refund Program.....	129
“Title XXII—Energy Refund Program	130
“Sec. 2201. Energy Refund Program”	130
Sec. 432. Modification of Earned Income Credit Amount for Individuals.....	130
Sec. 433. Protection of Social Security and Medicare Trust Funds	131
Subtitle D—Exporting Clean Technology.....	131
Sec. 441. Findings and Purposes	131
Sec. 442. Definitions	131
Sec. 443. Governance.....	132
Sec. 444. Determination of Eligible Countries	133
Sec. 445. Qualifying Activities	133
Sec. 446. Assistance	134
Subtitle E. Adapting to Climate Change	134
Part 1. Domestic Adaptation.....	134
Subpart A. National Climate Change Adaptation Program	134
Sec. 451. Global Change Research and Data Management.....	135

Sec. 452. National Climate Service	137
Sec. 453. State Programs to Build Resilience to Climate Change Impacts	139
Subpart B. Public Health and Climate Change.....	140
Sec. 461. Sense of Congress on Public Health and Climate Change	140
Sec. 463. National Strategic Action Plan.....	140
Sec. 467. Climate Change Health Protection and Promotion Fund	141
Subpart C. Natural Resource Adaptation.....	141
Sec. 472. Natural Resources Climate Change Adaptation Policy	141
Sec. 474. Council on Environmental Quality	141
Sec. 475. Natural Resources Climate Change Adaptation Panel	142
Sec. 477. Natural Resources Adaptation Science and Information.....	142
Sec. 478. Federal Natural Resource Agency Adaptation Plans	143
Sec. 479. State Natural Resources Adaptation Plans.....	143
Sec. 480. Natural Resources Climate Change Adaptation Fund.....	143
Sec. 481. National Wildlife Habitat and Corridors Information Program.	143
Part 2. International Climate Change Adaptation Program	144
Sec. 493. International Climate Change Adaptation Program	144
Sec. 494. Distribution of Allowances.....	144
Sec. 495. Bilateral Assistance.....	144
Title V—Agriculture and Forestry Related Offsets	145
Subtitle A—Offset Credit Program from Domestic Agricultural and Forestry Sources	145
Sec. 501. Definitions	145
Sec. 502. Establishment of Offset Credit Program from Domestic Agricultural and Forestry Sources	145
Sec. 503. List of Eligible Domestic Agricultural and Forestry Offset Practice Types	146
Sec. 504. Requirements for Domestic Agricultural and Forestry Practices.....	146
Sec. 505. Project Plan Submission and Approval	147
Sec. 506. Verification of Offset Practices.....	147
Sec. 507. Certification of Offset Credits	148
Sec. 508. Ownership and Transfer of Offset Credits.....	148
Sec. 509. Program Review and Revision	148
Sec. 510. Environmental Considerations.....	148
Sec. 511. Audits	149
Subtitle B—USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee	149
Sec. 531. Establishment of USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee	149
Subtitle C—Miscellaneous	149
Sec. 551. International Indirect Land Use Changes	149
Sec. 552. Biomass-Based Diesel.....	150
Sec. 553. Modification of Definition of Renewable Biomass	151

Figures

Figure 1. Simplified Emission Allowance Distribution—2016.....	7
Figure 2. Simplified Emission Allowance Distribution—2030.....	8

Contacts

Author Contact Information	152
Key Policy Staff.....	152

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). It was passed by the House on June 26, 2009. The five titles of the legislation cover clean energy, energy efficiency, reducing global warming pollution, transitioning to a clean energy economy, and agriculture and forestry related offsets. 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 passed by the House, and interpretive or informative commentary for some sections, when appropriate.

Combined Efficiency and 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 2012, 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). The credits can be awarded to generators or to “central procurement states.”¹

RECs could be traded or banked, but would be retired after being submitted in proof of compliance. “Distributed renewable generation”—small-scale, renewable 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 fund 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 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%

¹ A central procurement state is state that as of January 1, 2009, has adopted and implemented a program under which the state, rather than individual utilities, procures renewable electricity.

2018 to 2019: 16.5%
2020 through 2039: 20%

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.

Geologic Sequestration of Carbon Dioxide

H.R. 2454 would require the Administrator of the Environmental Protection Agency (EPA) to submit a report to Congress, within one year 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 CO₂ 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 CO₂ 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 Title VIII of the Clean Air Act (CAA) 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 produced by the unit 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.

H.R. 2454 also directs the Environmental Protection Agency to establish greenhouse gas emissions standards for various transportation sectors. The bill would require EPA to establish standards for heavy-duty vehicles and non-road vehicles (including marine vessels and locomotives). A provision from the version reported by the Energy and Commerce Committee requiring emissions standards for aircraft and aircraft engines was not included in the House-passed version.

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 an increasing amount of biofuels to 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 and from lands not previously cultivated. H.R. 2454 would amend the biomass 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. Further, a “cash for clunkers” provision was removed from the bill because a nearly identical program was enacted as part of P.L. 111-32.

Smart Grid

H.R. 2454 includes several provisions aimed at supporting development and installation of smart grid² 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 GUIDE product labels. (ENERGY GUIDE 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 FY 2015.

Additionally, H.R. 2454 would require state regulatory authorities and self-regulating power suppliers (such as municipal utilities) to consider implementing standards intended 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, the Department of Energy (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,

² 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 that aims to encourage consumer purchases of the most energy-efficient appliances, while also providing an incentive to remove the least efficient appliances from commercial use. An explicit cost-effectiveness purpose would be set by law for 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 use of 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.

A new subtitle was added in the Manager's Amendment that provides a number of provisions for energy efficient neighborhoods. The bill requires The Secretary of Housing and Urban Development (HUD) to promulgate regulations to encourage energy efficiency in HUD housing programs. The language defines standards for energy efficiency to be applied, as appropriate, in the implementation of a number of housing programs. Different programs apply to single-family residences, multi-family residences, rural residences, and some non-residential buildings. Programs provide incentives to improve energy efficiency through mortgage and loan instruments, loans to upgrade existing residential properties, and grants to increase sustainable low-income community development capacity.

Major Cap-and-Trade Provisions

As passed, 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 greenhouse gas (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 will 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 2050.³

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.⁴ The bill achieves its broad coverage through an upstream compliance mandate on petroleum, most fluorinated gas producers and importers, and a

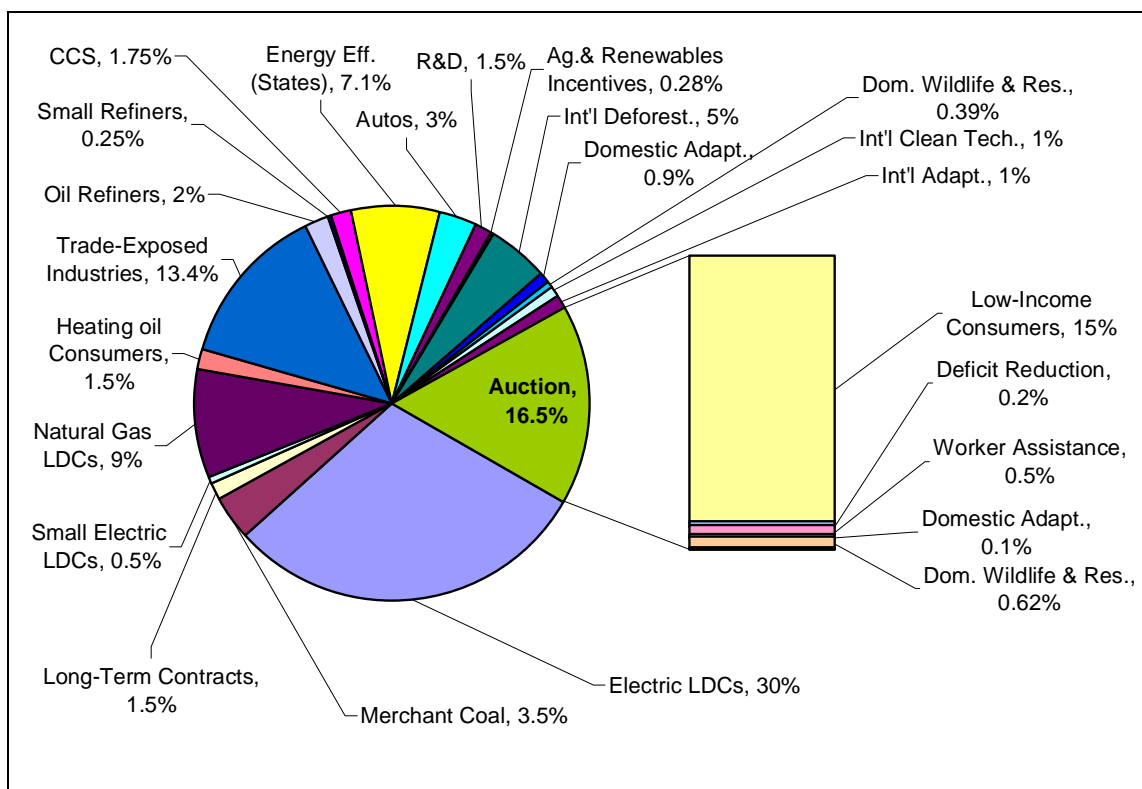
³ John Larsen and Robert Hellmayr, *Emission Reductions Under the American Clean Energy and Security Act of 2009* (World Resources Institute, May 19, 2009).

⁴ See "Common Terms" box for definitions of terms in boldface.

downstream mandate on electric generators and industrial sources, and a midstream mandate on natural gas local distribution companies (LDCs).⁵ 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 (or produce or import products that when used will emit greenhouse gases).

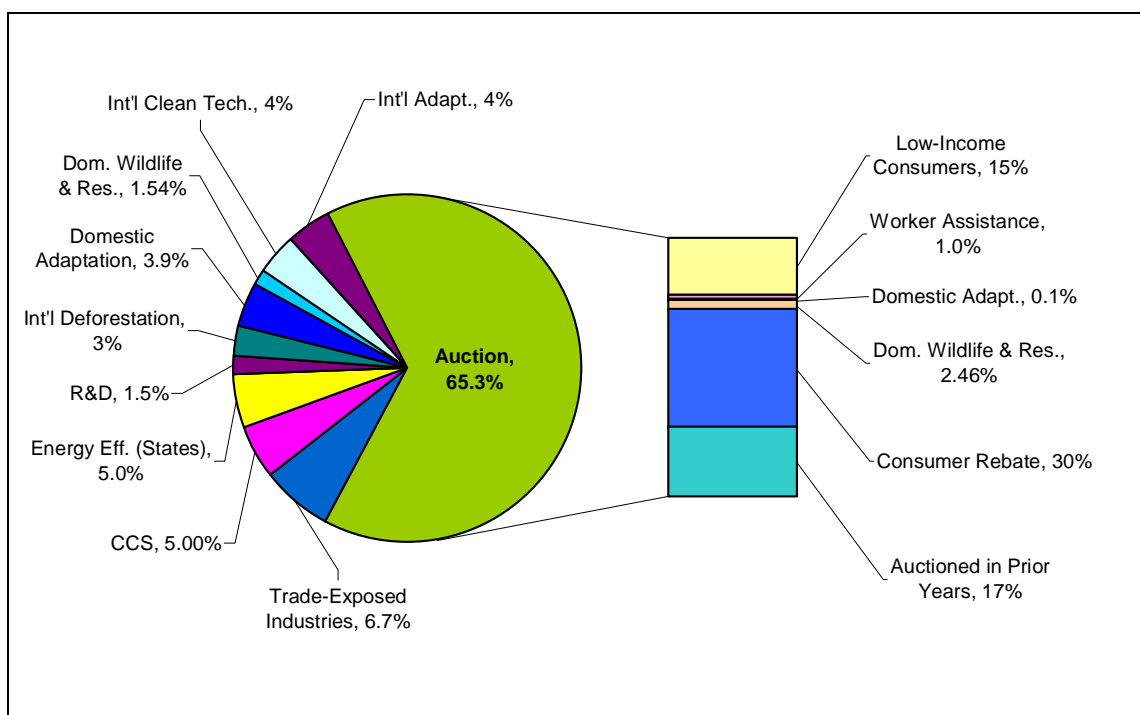
If left unmitigated, any greenhouse gas cap-and-trade program (as well as a carbon tax alternative) would be regressive. In an attempt to mitigate this distributional problem, H.R. 2454 allocates a substantial percentage of the allowances available for the benefit of energy consumers and low-income households.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

⁵ Title III sets up a separate cap-and-trade program for hydrofluorocarbons (HFCs).

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 to mid-2030s.

Finally, H.R. 2454's allocation scheme attempts to address greenhouse gas emissions 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 reserve auction with a pool of allowances available at a minimum reserve price, (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. A strategic reserve of allowances borrowed from future years is 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 5% real 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 tons of emissions annually—divided equally between domestic and international pools. According to analysis done by EPA, the Congressional Budget Office, and CRA International, the availability of these offsets reduces projected allowance prices under the program by half.⁶

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 (FERC) 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 futures 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.

⁶ 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 passed, the cap-and-trade program requires that international offsets submitted for compliance beginning in 2018 be discounted (i.e., it takes 1.25 offset credits to equal 1.00 allowance). 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.

H.R. 2454 takes two primary approaches to mitigating the potential impact of carbon leakage on the net greenhouse gas reductions to be achieved under the bill.⁷ 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.

Whether the international reserve allowance scheme would actually work is unclear. The daunting 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.

Provisions in Title V Added by the “Manager’s Amendment”

The June 26, 2009, “Manager’s Amendment” included a new Title V to H.R. 2454—“Agriculture and Forestry Related Offsets.” Most of this title concerns the establishment of a separate offsets program for agriculture and forestry practices that is to be implemented by the U.S. Department of Agriculture (USDA), rather than EPA under Title III. However, the title also includes provisions that are not part of the new offsets program. Some of these provisions have been the subject of intense debate.

Subtitle A of Title V would create within USDA an offsets program that covers domestic agriculture and forestry-related practices. For the most part, the provisions in Title V are similar to those found in Title III, the most striking exception being the difference in implementing agencies. The separate offset jurisdictions between EPA and USDA are made by the revised definitions of “domestic offset credit” and “offset credit.” These terms now have different meanings between Parts C and D of Title III. In effect, these changes allow (domestic) offset credits generated under Title V (agriculture and forestry offsets) to be used for compliance per Title III, Part C, but would separate the implementation of offsets generated under Title III (Part D) and Title V.

⁷ For a full discussion of carbon leakage, see CRS Report R40100, “*Carbon Leakage*” and *Trade: Issues and Approaches*, by Larry Parker and John Blodgett.

In the reported version of the bill, many stakeholders were concerned that the Title III offset program did not include an explicit list of offset practices. Such a list is now part of the proposal in Title V. However, as written, USDA is not required to include the practices specifically identified in the regulatory program that would carry out the statutory provisions.

Title V would set up a domestic offset development process almost identical to the one in Title III: Offset project developers would submit a petition to USDA; USDA would approve or reject the petition; and third-party verification would be required before USDA would issue offset credits. But there are several differences identified in the section-by-section analysis below.

One key difference is that Title V would allow USDA to issue (in lieu of offset credits) a “term offset credit.” The inclusion of “term offset credits” is a new concept in U.S. cap-and-trade proposals. This mechanism is similar to the temporary certified emission reductions (tCER) that are allowed under the Kyoto Protocol for forestry and agriculture projects. Term offset credits are temporary offsets that may be submitted for compliance per the conditions of Section 722(d)(2). These credits expire at their term’s conclusion and must be replaced with emission allowances, other offsets, or unexpired term offset credits. Term offset credits address concerns regarding the permanence of particular offset practices, such as agriculture sequestration efforts. In contrast to offset credits, reversals from term offset credits are only relevant during their crediting period.

In addition to the offsets program, Title V includes several other provisions. Within Section 501 (definitions), the bill specifically excludes “agriculture and forestry sectors” from the definition of “capped sector” in Title III (i.e., the cap-and-trade program). However, neither the phrase “agriculture and forestry sectors” nor “capped sector” appear elsewhere in the bill.

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 (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). H.R. 2454 adds nitrogen trifluoride (NF₃).

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

<i>Summary of section</i>	<i>Comments</i>
<p>Amends the Public Utility Regulatory Policies Act of 1978 (PURPA) to create an integrated energy efficiency and renewable electricity standard.</p> <p>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. Credits can also be acquired by “central procurement states.”⁸</p> <p>In establishing regulations for this program, FERC 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.</p> <p>RECs can be traded or banked, and can be earned by producing electricity from specified renewable energy sources, including wind, solar, geothermal, marine or hydrokinetic, biomass, landfill gas, or qualified hydropower.</p> <p>“Distributed renewable generation”—small-scale, renewable power production located at consumer sites—qualifies for three RECs for each mwh of eligible renewable electricity. The object of this provision (which is explicitly stated in the bill) is to improve the cost-competitiveness of distributed renewable power versus more conventional electricity sources.</p>	<p>The definition of renewable electricity is augmented by adding <i>other</i> 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.</p> <p>Renewable biomass definition is revised to allow thinning materials and removed invasive species from the National Forest system and public lands.</p> <p>The bill’s requirement that qualified hydropower installations must result in <i>no</i> water surface elevation changes at existing dams has been criticized as impractical. Alternatives include establishing a range of water elevation change per kilowatt-hour of generation and providing for no “net” degradation of downstream resources, habitats, or existing uses.</p> <p>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.</p> <p>Combined heat and power or CHP (also referred to as cogeneration) is an integrated</p>

⁸ A central procurement state is state that as of January 1, 2009, has adopted and implemented a program under which the state, rather than individual utilities, procures renewable electricity.

<i>Summary of section</i>	<i>Comments</i>
<p>The required renewable energy and efficiency percentage for each year is:</p> <p>2012 and 2013: 6%</p> <p>2014 and 2015: 9.5%</p> <p>2016 and 2017: 13%</p> <p>2018 to 2019: 16.5%</p> <p>2020 through 2039: 20%</p> <p>Generally a maximum of 25% of a retailer’s (or a Central Procurement State’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. However, a state governor can petition the Commission to increase the efficiency percentage for the retailers in his or her state up to 40%.</p> <p>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.</p> <p>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.</p> <p>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</p>	<p>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.</p> <p>The fuel cell is a generating technology that relies on chemical reactions, without combustion, to produce electricity. Fuel cells are a developmental technology. 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 using 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.</p> <p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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 electricity credits.)</p> <p>A retailer can choose to meet its annual target in whole or part with an alternative compliance payment to the state 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. The state would be required to use the payments to promote the deployment of renewable electricity and energy efficiency. A retailer that fails to comply with its target must pay to FERC 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).</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>The provision affirms state authority to set rates for sales of renewable electricity produced under a <i>state-approved</i> 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.</p>

Sec. 103. Federal Renewable Energy Purchases

<i>Summary of section</i>	<i>Comments</i>																																	
<p>Requires that, for each of calendar years 2012 through 2039, the President shall ensure that, of the total amount of electricity federal agencies consume in the United States during each calendar year, the following percentage shall be renewable electricity:</p> <table border="0"> <thead> <tr> <th>Calendar year</th> <th>Required</th> <th>annual percentage</th> </tr> </thead> <tbody> <tr> <td>2012</td> <td>.....</td> <td>6.0</td> </tr> <tr> <td>2013</td> <td>.....</td> <td>6.0</td> </tr> <tr> <td>2014</td> <td>.....</td> <td>9.5</td> </tr> <tr> <td>2015</td> <td>.....</td> <td>9.5</td> </tr> <tr> <td>2016</td> <td>.....</td> <td>13.0</td> </tr> <tr> <td>2017</td> <td>.....</td> <td>13.0</td> </tr> <tr> <td>2018</td> <td>.....</td> <td>16.5</td> </tr> <tr> <td>2019</td> <td>.....</td> <td>16.5</td> </tr> <tr> <td>2020</td> <td>.....</td> <td>20.0</td> </tr> <tr> <td>2021 through 2039</td> <td>.....</td> <td>20.0</td> </tr> </tbody> </table> <p>The requirements will be managed by the Federal Energy Management Program in DOE. Standardized contracts for the federal government to acquire renewable energy may be entered into for up to 20 years.</p>	Calendar year	Required	annual percentage	2012	6.0	2013	6.0	2014	9.5	2015	9.5	2016	13.0	2017	13.0	2018	16.5	2019	16.5	2020	20.0	2021 through 2039	20.0	
Calendar year	Required	annual percentage																																
2012	6.0																																
2013	6.0																																
2014	9.5																																
2015	9.5																																
2016	13.0																																
2017	13.0																																
2018	16.5																																
2019	16.5																																
2020	20.0																																
2021 through 2039	20.0																																

Subtitle B—Carbon Capture and Sequestration

Sec. 111. National Strategy

<i>Summary of section</i>	<i>Comments</i>
<p>Within one year 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.</p>	

Sec. 112. Regulations for Geologic Sequestration Sites

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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 the purposes of geologic sequestration.</p> <p>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.</p> <p>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</p>	<p>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 CO₂. 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 CO₂ geologic sequestration wells within one year after enactment.</p>

<i>Summary of section</i>	<i>Comments</i>
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. 113. Studies and Reports.

<i>Summary of section</i>	<i>Comments</i>
<p>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 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.</p> <p>Requires a study examining how, and under what circumstances, the environmental statutes for which EPA has responsibility would apply to CO₂ injection and geologic sequestration activities. A report based on the study is due one year after enactment.</p>	<p>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 underground storage of CO₂, such as mineral rights, water rights, rights to the pore space, and others.</p>

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

<i>Summary of section</i>	<i>Comments</i>
<p>Allows for the establishment of a Carbon Storage Research Corporation, by referendum, that would 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.</p>	<p>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.</p> <p>If established, the corporation would award grants, contracts, and assistance to support commercial-scale demonstration of carbon capture or storage technology projects that</p>

<i>Summary of section</i>	<i>Comments</i>						
<p>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 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.</p> <p>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.</p> <p>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 CO₂ emission rates of different fossil fuel-based electricity as follows:</p> <table border="0" data-bbox="232 1583 740 1854"> <thead> <tr> <th data-bbox="232 1583 370 1619">Fuel type</th> <th data-bbox="578 1583 740 1745">Rate of assessment per kilowatt hour</th> </tr> </thead> <tbody> <tr> <td data-bbox="232 1759 561 1787">Coal</td> <td data-bbox="618 1759 721 1787">\$0.00043</td> </tr> <tr> <td data-bbox="232 1818 561 1845">Natural Gas</td> <td data-bbox="618 1818 721 1845">\$0.00022</td> </tr> </tbody> </table>	Fuel type	Rate of assessment per kilowatt hour	Coal	\$0.00043	Natural Gas	\$0.00022	<p>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.</p> <p>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 \$10 billion to be awarded over 15 years.</p> <p>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.”</p>
Fuel type	Rate of assessment per kilowatt hour						
Coal	\$0.00043						
Natural Gas	\$0.00022						

<i>Summary of section</i>	<i>Comments</i>
<p>Oil \$0.00032.</p> <p>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.</p> <p>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.</p> <p>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 adequacy of funding.</p> <p>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.</p> <p>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.</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>Sec. 115 excludes industrial facilities from eligibility if they produce a liquid transportation fuel from a solid fossil-based feedstock.</p> <p>For projects that capture and sequester</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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 dioxide or convert it to a stable form that can be safely and permanently sequestered.</p> <p>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.</p> <p>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</p>	<p>carbon dioxide for the purposes of enhanced hydrocarbon recovery, the Administrator is required to reduce the applicable bonus allowance value compared to projects that capture carbon dioxide solely for purposes of sequestration.</p> <p>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.</p> <p>An amendment was successfully offered during markup to replace the word “source” with the words “emission point” regarding eligibility for emission allowances at an 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.</p> <p>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.</p> <p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>Administrator would divide emission allowances into multiple tranches, each supporting the deployment of a specified quantity of cumulative electric generating capacity utilizing 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.</p> <p>The Administrator would not distribute more than 15% of the allocated allowances under Sec. 782(a) to eligible industrial sources. The 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.</p> <p>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.</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>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:</p> <ul style="list-style-type: none"> • A covered unit that is “initially permitted” on or after January 1, 2020, shall reduce carbon dioxide emissions by 65%. 	<p>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.</p> <p>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</p>

<i>Summary of section</i>	<i>Comments</i>
<ul style="list-style-type: none"> • 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 roughly eight medium-sized coal plants). This 4 Gw of capacity must include at least 3 Gw of electric generating units, may include up to 1 Gw of industrial applications that are capturing and sequestering at least 3 million tons of carbon dioxide annually, and must include at least two operating 250 megawatt (Mw) or larger generating units that 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). • 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 	<p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	

Subtitle C—Clean Transportation

Sec. 121. Electric Vehicle Infrastructure

<i>Summary of section</i>	<i>Comments</i>
<p>Establishes a new standard that state regulatory authorities and non-regulated electric utilities may adopt. The standard would require electric utilities 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.</p> <p>Under the standard, within three years of enactment, state regulatory authorities would be required to set a hearing date for considering the plan, and must make a determination on new standards within four years of enactment. State regulatory authorities would consider whether to allow cost recovery for the development and implementation of such plans.</p>	<p>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.</p>

Sec. 122. Large-Scale Vehicle Electrification Program

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	

<i>Summary of section</i>	<i>Comments</i>
Secretary is to determine the design elements and requirements for the program, including the type of financial assistance provided. Financial 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

<i>Summary of section</i>	<i>Comments</i>
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. 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, and to proposals that are most likely to be successful.	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

<i>Summary of section</i>	<i>Comments</i>
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 for implementation of Sec. 123. 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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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. Definition of Renewable Biomass

<i>Summary of section</i>	<i>Comments</i>
Replaces the definition of “renewable biomass” in the Renewable Fuel Standard (RFS) that was enacted in EISA.	<p>The EISA definition of “renewable biomass” effectively restricted the types of feedstocks 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.</p> <p>This amendment would significantly expand the amount of biomass from forested lands that could be used to produce fuels under the RFS. Further, the House-passed version would eliminate an EISA requirement that feedstock crops come from previously cultivated land.</p>

Sec. 127. Open Fuel Standard

<i>Summary of section</i>	<i>Comments</i>
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	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

<i>Summary of section</i>	<i>Comments</i>
be used by flexible fuel vehicles (FFVs), that sufficient infrastructure exists to fuel the 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.	estimated six to eight million FFVs on the road, but the vast majority of these vehicles are operated only on gasoline, due to the higher per-mile cost of E85 and its limited availability.

**Deleted Old Sec. 128. Temporary Vehicle Trade-in Program
(New Sec. 128 Below)**

<i>Summary of section</i>	<i>Comments</i>
Would have established a “Cash for Clunkers” program within the National Highway Traffic Safety Administration (NHTSA). The program would have offered vouchers to customers who purchased a new fuel-efficient vehicle to replace an older, less efficient vehicle. The vehicle to be replaced was to be crushed or shredded. Vouchers would have been 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 would have covered only vehicles purchased or leased between March 30, 2009, and March 31, 2010. A total of \$4 billion would have been authorized to implement the program.	This section, which was added in committee markup, was removed from the House-passed bill because a similar program was enacted as part of the defense supplemental appropriations bill (H.R. 2346, P.L. 111-32). The key difference between the proposed and enacted language is that under the new law, \$1 billion is appropriated for the program to run between July 1 and November 1, 2009. The deleted section would have <i>authorized</i> , but not appropriated, \$4 billion.

Sec. 128. Diesel Emissions Reduction

<i>Summary of section</i>	<i>Comments</i>
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. 129. Loan Guarantees for Projects to Construct Renewable Fuel Pipelines

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 130. Fleet Vehicles

<i>Summary of section</i>	<i>Comments</i>
Amends the Energy Policy Act of 1992 to allow federal, state, and fuel provider fleets to earn credits from the conversion of existing vehicles to operate on alternative fuels. Those credits can be used to partially offset a fleet's requirement to purchase new alternative fuel vehicles.	The Energy Policy Act of 1992 requires federal, state, and alternative fuel providers to purchase alternative fuel vehicles. Of a given year's vehicle purchases, a percentage must be alternative fuel vehicles—the percentage varies depending on the type of fleet. Currently, vehicle conversions do not generate credits.

Sec. 130A. Report on Natural Gas Vehicle Emissions Reductions

<i>Summary of section</i>	<i>Comments</i>
Within 360 days of enactment, the EPA Administrator must report to Congress on the contribution natural gas vehicles have made to reducing greenhouse gases and criteria pollutants, the likely reductions from these vehicles between 2010 and 2020, and additional federal measures that would maximize the potential of natural gas vehicles.	

Subtitle D— State Energy and Environment Development Accounts

Sec. 131. Establishment of SEED Funds

<i>Summary of section</i>	<i>Comments</i>
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	The SEED Fund is designed to collect a few major, but separate, grant programs into a more unified effort.

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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 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.</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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</p>	<p>The carbon allowance distribution program established in this section would be used to help support several energy efficiency programs in Title II.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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%.</p> <p>Each state receiving emission allowances would be required to submit biennial reports to Congress. Those reports are to include a list of 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).</p>	

Sec. 133. Support of Indian Renewable Energy and Energy Efficiency Programs

<i>Summary of section</i>	<i>Comments</i>
<p>Directs DOE, in consultation with EPA and the Department of the Interior (DOI), to issue regulations that would establish a competitive program to distribute allowances to Indian tribes for cost-effective energy efficiency programs that serve end-use consumers and for deployment of renewable energy power generation technologies. The regulations would include design elements such as criteria for assessing proposals and reporting requirements.</p>	<p>From the allowances provided under Section 132, this section carves out a slice of allowances designated specifically for American Indian tribes.</p>

Subtitle E – Smart Grid Advancement

Sec. 141. Definitions (no summary or comments)

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

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>Directs the Federal Trade Commission to complete 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.</p>	

Sec. 144. Smart Grid Peak Demand Reduction Goals

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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</p>

<i>Summary of section</i>	<i>Comments</i>
<p>megawatts (equivalent to the output of a single, relatively small power plant).</p> <p>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.</p> <p>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 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.</p>	<p>supply from distributed generation.⁹ Other options, such as direct control of residential appliances, do require smart grid technology.</p> <p>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 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.</p> <p>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.</p>

⁹ 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.

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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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 FY 2015.	

Subtitle F—Transmission Planning

Sec. 151. Transmission Planning and Siting

<i>Summary of section</i>	<i>Comments</i>
Amends the Federal Power Act to create new transmission planning and siting processes. The primary purpose is to facilitate the development of new renewable power sources. As discussed below, the siting processes differ between the	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

¹⁰ The transmission grid for the contiguous 48 states consists of three, for the most part electrically independent, “interconnections.” These are the ERCOT Interconnection, which covers most of Texas; the Eastern Interconnection, which extends from the eastern seaboard to the eastern front of the Rockies; and the Western Interconnection, which covers the balance of the country. Transmission operations and planning in ERCOT is the responsibility of a single entity (the Electric Reliability Council of Texas, Inc.). While the Western Interconnection is not centralized to the same degree, there is a single entity (the Western Electric Coordinating Council) with substantial responsibility for interconnection-wide reliability and transmission planning. There is no comparable organization for the Eastern Interconnection, which is covered by 11 different and sometimes overlapping transmission-related organization (six reliability regions and five regional transmission operators). For more information and maps, see CRS Report R40511, (continued...)

<i>Summary of section</i>	<i>Comments</i>
<p>eastern and western parts of the country.</p> <p>Planning: 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 multi-regional or national plans) no more than 18 months after filing the planning principles, and attempt to resolve conflicts between plans. FERC is also to facilitate coordination between the planning entities and related DOE activities. Plans are to be updated by the planning entities not less than every three years.</p> <p>FERC is to report to Congress on the status of the planning efforts three years after enactment and every three years thereafter. As part of these reports FERC can recommend legislative changes to facilitate development of the transmission system.</p> <p>The planning processes are directed to focus primarily on facilitating the “deployment of renewable and other zero-carbon and low-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 of facilitating renewable/zero-carbon power deployment.</p> <p>The bill authorizes funding as necessary for FERC and DOE to assist the planning process with, for example, technical expertise, computer modeling support, and dispute resolution services.</p> <p>Siting of New Transmission Lines: transmission line siting and permitting is currently almost entirely under the control of the states. The bill grants FERC new federal siting and permitting</p>	<p>implicitly turn transmission planning into wider-scope power system planning.</p> <p>The limitation of the new federal transmission permitting authority to the Western Interconnection apparently reflects opposition by some eastern governors to the notion that new long distance and expensive transmission lines are needed to bring renewable power across the country to the east (such as wind power generated in the central plains). The counter-argument is that renewable power can be generated locally in the east, such as from off-shore wind plants or hydroelectric plants in Quebec, which obviates the need for new inter-regional transmission projects.</p>

(...continued)

Electric Power Transmission: Background and Policy Issues, by Stan Mark Kaplan.

<i>Summary of section</i>	<i>Comments</i>
<p>authority within the Western Interconnection.¹⁰ This authority to supersede state permitting decisions applies only to proposed transmission projects that meet certain criteria, including:</p> <ul style="list-style-type: none"> • Interstate projects “identified as needed in significant measure to meet demand for renewable energy.” • The project is included in regional transmission plans that meet FERC planning criteria. • Any conflicts concerning the project between regional transmission planning authorities have been resolved. • The developer has filed a complete application with a state permitting authority, which authority has nonetheless either rejected the project, approved it with conditions that make the project impractical, or failed to act on the application within a year of filing. <p>In addition to having authority to permit facilities that meet these criteria, FERC is to coordinate all federal reviews and approvals for the project (in coordination with the Department of the Interior in respect to Federal lands).</p> <p>The bill also amends existing provisions of the Federal Power Act which require DOE to conduct transmission congestion studies and, under certain limited circumstances, allow FERC to permit transmission lines in special transmission corridors designated by DOE. The bill would limit this provision to the Eastern Interconnect, and then only for interstate transmission lines or intrastate lines essential to an interstate project.</p>	

Sec. 152. Net Metering for Federal Agencies

<i>Summary of section</i>	<i>Comments</i>
<p>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 is also</p>	<p>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</p>

<p>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.</p> <p>Consideration of net metering for federal facilities must take place within a year of enactment. The net metering standard must be adopted if it is consistent with state law and is found by the controlling regulatory authority to be “appropriate.”</p>	<p>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.</p> <p>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.</p>
--	---

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

<i>Summary of section</i>	<i>Comments</i>
<p>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).</p> <p>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</p>	

<p>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.</p> <p>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.</p>	
--	--

Subtitle G— Technical Corrections to Energy Laws

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

<i>Summary of section</i>	<i>Comments</i>
Clarifying, technical amendments.	No substantive changes.

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

<i>Summary of section</i>	<i>Comments</i>
Clarifying, technical amendment.	No substantive change.

Subtitle H— Energy and Efficiency Centers and Research

Sec. 171. Energy Innovation Hubs

<i>Summary of section</i>	<i>Comments</i>
Directs DOE to establish regional Energy Innovation Hubs to promote commercial deployment of clean indigenous energy forms that help reduce fossil energy use, curb	

<i>Summary of section</i>	<i>Comments</i>
<p>greenhouse gas emissions, and help maintain national technological leadership.</p> <p>The Hubs are to focus on cross-disciplinary R&D in areas not served by the private sector. Also, the Hubs are to promote regional economic development by cultivating “clusters” of clean energy technology firms and other businesses and organizations.</p> <p>DOE is required to conduct a competitive process for the distribution of emission allowances to consortia with the aim of establishing eight Hubs, 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 nongovernmental energy organization.</p> <p>Each Hub is required to use allowances to provide awards to projects managed by qualifying entities. Also, each Hub must submit an annual report to DOE.</p>	

Sec. 172. Advanced Energy Research

<i>Summary of section</i>	<i>Comments</i>
<p>Requires that, not later than September 30 of 2011, and each calendar year thereafter through 2049, the Director of the Advanced Research Projects Agency-Energy shall distribute allowances on a competitive basis to institutions of higher education, companies, research foundations, trade and industry research collaborations, or consortia of such entities, or other appropriate research and development entities to achieve the goals of:</p> <p>(1) novel early-stage energy research with possible technology applications;</p> <p>(2) development of techniques, processes, and technologies, and related testing and evaluation.</p>	

Sec. 173. Building Assessment Centers

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>A Building Assessment Center may serve as a Center for Energy and Environmental Knowledge and Outreach, as identified in Section 173.</p>

Sec. 174. Centers for Energy and Environmental Knowledge and Outreach

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p> <p>The Small Business Administration is required to consider loans to affiliated industrial research and assessment centers, Clean Energy Application Centers, and Building Assessment Centers.</p> <p>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.</p>	

Sec. 175. High Efficiency Gas Turbine Research, Development, and Demonstration

<i>Summary of section</i>	<i>Comments</i>
Directs the Secretary of Energy to carry out a multiyear, multiphase program of research, development, and technology demonstration to improve the efficiency of gas turbines used in combined cycle power generation systems and to identify the technologies that ultimately will lead to gas turbine combined cycle efficiency of 65%.	

Subtitle I—Nuclear and Advanced Technologies

Sec. 181. Revisions to Loan Guarantee Program Authority

<i>Summary of section</i>	<i>Comments</i>
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. In addition, the Secretary of Energy is authorized to share the proceeds of any asset sales with other creditors.	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

<i>Summary of section</i>	<i>Comments</i>
States that the purpose of the remainder of this subtitle is to promote domestic development and deployment of clean energy technologies.	

Sec. 183. Definitions

<i>Summary of section</i>	<i>Comments</i>
Defines key terms, including: “breakthrough technology” as promising technology with high commercial risk; and “clean energy technology,”	

<i>Summary of section</i>	<i>Comments</i>
as technology that can help stabilize greenhouse gas concentrations but for which insufficient commercial lending is available.	

Sec. 184. Clean Energy Investment Fund

<i>Summary of section</i>	<i>Comments</i>
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 Secretary of the Treasury is to issue Green Bonds totaling \$7.5 billion to acquire capital stock of the Clean Energy Deployment Administration established by Sec. 186.	<p>The revolving fund would be in addition to DOE loan guarantee authority under EPACT.</p> <p>The Federal Credit Reform Act of 1990 (FCRA) requires the appropriation of budget authority to pay for the estimated subsidy costs, calculated on a net present value basis, of direct loans and loan guarantees (federal credit) in the fiscal year that the credit is provided. The proposed sale of \$7.5 billion in “Green Bonds” is inconsistent with the concepts of the FCRA, because funds raised from the sale of these bonds would not go through the appropriations process.</p>

Sec. 185. Energy Technology Deployment Goals

<i>Summary of section</i>	<i>Comments</i>
Requires the Secretary of Energy to establish goals and performance targets for clean energy technology deployment.	

Sec. 186. Clean Energy Deployment Administration

<i>Summary of section</i>	<i>Comments</i>
Establishes Clean Energy Deployment Administration (CEDA) as an independent corporation wholly owned by the federal government. 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, who would serve as chairman, and the Secretary of Energy. A CEDA Energy Technology Advisory Council would develop methodologies for assessing clean energy technologies for potential	

<i>Summary of section</i>	<i>Comments</i>
CEDA financial support.	

Sec. 187. Direct Support

<i>Summary of section</i>	<i>Comments</i>
Authorizes CEDA to issue direct loans, letters of credit, and loan guarantees 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. CEDA may not provide direct or indirect support to projects receiving loan guarantees under Title XVII of EPACT.	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. Indirect Support

<i>Summary of section</i>	<i>Comments</i>
Authorizes CEDA to provide credit support to enhance the availability of private financing for clean energy deployment. To carry out this section, CEDA may support portfolios of taxable debt obligations through direct loans, letters of credit, loan guarantees, and insurance products, and through the purchase or sale, or commitments to purchase or sell, debt instruments.	

Sec. 189. Federal Credit Authority

<i>Summary of section</i>	<i>Comments</i>
Supports CEDA obligations with the full faith and credit of the United States.	

Sec. 190. General Provisions

<i>Summary of section</i>	<i>Comments</i>
Establishes immunity requirements, as well as various reporting and auditing requirements.	

Sec. 191. Conforming Amendments

<i>Summary of section</i>	<i>Comments</i>
The Clean Energy Development Administration is added to existing lists in the U.S. Code of tax-exempt entities and wholly owned government corporations.	

Subtitle J—Miscellaneous

Sec. 195. Increased Hydroelectric Generation at Existing Federal Facilities

<i>Summary of section</i>	<i>Comments</i>
Directs DOE, the Department of the Army, and the Department of the Interior to update an earlier report on the potential for up-rating or adding hydroelectric generating capacity to federal water facilities. The report, which is to be filed with several House and Senate committees within a year of enactment, would in effect be an update on progress made since the original study.	The original report on “Potential Hydroelectric Development at Existing Federal Facilities” was required by Section 1834 of the Energy Policy Act of 2005. The report is available at http://www.usbr.gov/power/data/1834/Sec1834_EPA.pdf . It found that the potential existed to increase federal hydroelectric generating capacity by up to 2,513 megawatts (equivalent to one or two large power plants).

Sec. 196. Clean Technology Business Competition Grant Program

<i>Summary of section</i>	<i>Comments</i>
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	

<i>Summary of section</i>	<i>Comments</i>
grid, green building, and waste management.	

Sec. 197. National Bioenergy Partnership

<i>Summary of section</i>	<i>Comments</i>
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. 198. Office of Consumer Advocacy

<i>Summary of section</i>	<i>Comments</i>
Amends Sec. 319 of the Federal Power Act to establish 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.	

Sec. 199. Development Corporation for Renewable Power Borrowing Authority

<i>Summary of section</i>	<i>Comments</i>
The Secretary of Energy, in coordination with the Secretary of Commerce, is to recommend to the Committee on Energy and Commerce of the House of Representatives the establishment of any new Federal lending authority, including authorization of additional lending authority for	

<i>Summary of section</i>	<i>Comments</i>
existing Federal agencies, not to exceed \$3,500,000,000 per geographic area identified in subsection. \$25,000,000 is authorized to be appropriated for fiscal year 2010 to carry out the provisions of this section.	

Sec. 199A. Study

<i>Summary of section</i>	<i>Comments</i>
Calls for the Secretary of Energy to submit to Congress a report on the use of thorium-fueled nuclear reactors by February 1, 2011.	

Title II—Energy Efficiency

Subtitle A—Building Energy Efficiency Programs

Sec. 201. Greater Energy Efficiency in Building Codes

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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	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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p> <p>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.</p>	<p>retrofits of existing residential buildings and directs DOE to develop a similar program for existing commercial buildings.</p>

Sec. 203. Energy Efficient Manufactured Homes

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>A rebate program is established to encourage turnover of manufactured homes owned by low-income families.</p>

Sec. 204. Building Energy Performance Labeling Program

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>A building energy efficiency labeling program would be established that would be similar to the existing labeling program for cars and appliances.</p>

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 205. Tree Planting Programs

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p>	

Sec. 206. Energy Efficiency for Data Center Buildings

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 207. Community Building Code Administration Grants

<i>Summary of section</i>	<i>Comments</i>
<p>Directs the Department of Housing and Urban Development (HUD) to establish a competitive grant program for local government building code enforcement departments. The grants could be used to supplement state and local funding or supplement carbon allowance value (under this act) for implementation and enforcement of energy efficiency building codes. The federal grant value would be capped at \$1 million and a matching contribution would be required from each local government that ranges from 12.5% for governments with populations under 20,000 up to 50% for governments with populations greater than 50,000. Grant proposals must include a demonstration of needs and plans for funding use, local government actions, public outreach, and enforcement of safety and fire prevention violations. Grant recipients would be required to report to HUD on program effectiveness. For FY2010 through FY2014, an annual authorization of \$20 million would be provided.</p>	

Sec. 208. Solar Energy Systems Building Permit Requirements for Receipt of Community Development Block Grant Funds

<i>Summary of section</i>	<i>Comments</i>
<p>The general requirements for HUD community development grants would be expanded to include a cap on the cost of any permit or license for the construction or installation of any solar energy system. For residential structures, the cap would be set at \$500. For nonresidential structures, the cost would be set at 1% of the total project cost, not to exceed \$10,000. In the event of noncompliance, HUD could withhold up to 5% of a grant award.</p>	

Sec. 209. Prohibition of Restrictions on Residential Installation of Solar Energy System

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD to issue regulations that expand the general requirements for the use of grant funds to prohibit any contract, lease, or other agreement from impairing the ability of a residential property owner or lessee to install, construct, maintain, or use a solar energy system on that property. Further, the regulations would require that a solar energy system be treated in the same manner as any other architectural modification. Impairment is defined to include unreasonable delays or costs or other actions that prevent installation, maintenance, or use of such a system.</p>	

Subtitle B— Lighting and Appliance Energy Efficiency Programs

Sec. 211. Lighting Efficiency Standards

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
would take effect three years after the law is enacted.	

Sec. 212. Other Appliance Efficiency Standards

<i>Summary of section</i>	<i>Comments</i>
<p>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%.</p>	<p>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.</p>

Sec. 213. Appliance Efficiency Determinations and Procedures

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>Other criteria for prescribing new or amended standards would require information about the</p>	<p>Existing criteria for setting appliance efficiency standards would be expanded to include criteria related to greenhouse gas emissions and other factors.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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 hardship through the prescription of regional standards.</p> <p>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.</p> <p>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.</p> <p>Directs that state and local building codes use appliance efficiency requirements that are no less stringent than those set by federal standard.</p> <p>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.</p>	

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

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>review the class annually and make upward adjustments in the criteria as appropriate.</p> <p>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.</p> <p>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.</p>	

Sec. 215. WaterSense

<i>Summary of section</i>	<i>Comments</i>
<p>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 FY2010-2013, and \$50 million for each year thereafter to implement this section.</p>	<p>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.</p>

Sec. 216. Federal Procurement of Water Efficient Products

<i>Summary of section</i>	<i>Comments</i>
<p>Directs federal agencies to procure water consuming products or services that are 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.</p>	<p>The mission of the Department of Energy’s FEMP is to facilitate the federal 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.</p>

Sec. 217. Early Adopter Water Efficient Product Incentive Programs

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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 rebates to consumers or assist state rebate or voucher programs.</p>

Sec. 218. Certified Stoves Program

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>Establishes an environmental standard for new residential wood stoves and pellet stoves.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>components and materials be recycled. Priority is given to stoves manufactured before July 1, 1990.</p> <p>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.</p> <p>EPA is authorized to accept stove replacement “supplementary environmental projects” as part of a settlement of any alleged violation of a federal environmental law.</p>	

Sec. 219. Energy Star Standards

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>Addresses a concern that technological improvements gradually erode the true energy efficiency of products identified with the EPA Energy Star label.</p>

Subtitle C—Transportation Efficiency

Sec. 221. Emission Standards

<i>Summary of section</i>	<i>Comments</i>
<p>The EPA Administrator is required to establish GHG standards for heavy-duty vehicles and engines, and non-road vehicles and engines (including locomotives and marine vessels). 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</p>	<p>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 Air Act to regulate emissions from passenger vehicles. Further, EPA would also have the</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>authority to regulate emissions from other sectors and classes of vehicles, depending on the specific sector/class. For more information, see CRS Report R40506, <i>Cars and Climate: What Can EPA Do to Control Greenhouse Gases from Mobile Sources?</i>, by James E. McCarthy. This amendment would require EPA to establish emission standards for these vehicles.</p> <p>The House-passed version does not contain a provision from the reported version that would have also required EPA to set emissions standards for new aircraft and new aircraft engines by December 31, 2012. However, language granting EPA the authority to include aircraft in the averaging, banking, and trading portion of Sec. 221 was retained. Therefore, if EPA establishes standards for aircraft under its existing authority, emissions reductions from that program could be applied to other vehicle/engine classes.</p>

Sec. 222. Greenhouse Gas Emissions Reductions Through Transportation Efficiency

<i>Summary of section</i>	<i>Comments</i>
<p>Within 18 months of enactment, the EPA Administrator, in consultation with the Secretary of Transportation, must promulgate national transportation-related greenhouse gas reduction goals, as well as models and methodologies for states and localities to incorporate these goals into their transportation planning.</p> <p>States and metropolitan planning organizations (MPOs) must develop transportation greenhouse gas emissions targets, and strategies to achieve those targets. If a state or MPO fails to develop or submit targets or strategies, the Secretary of Transportation may withhold up to 20% of highway and transit funding (under Title 23 and Chapter 53 of Title 49 of the U.S. Code). Funds would be restored when the Secretary certifies that the above requirements have been met.</p>	

<i>Summary of section</i>	<i>Comments</i>
The Secretary of Transportation must establish performance measures to ensure that transportation plans meet the above requirements and achieve progress toward the national goals stated above.	

Sec. 223. SmartWay Transportation Efficiency Program

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>Requires the EPA Administrator to establish a SmartWay Financing Program. Entities receiving funds are required 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.</p>	

Sec. 224. State Vehicle Fleets

<i>Summary of section</i>	<i>Comments</i>
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	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

<i>Summary of section</i>	<i>Comments</i>
fleets.	alternative fuel vehicles.

Subtitle D—Industrial Energy Efficiency Programs

Sec. 241. Industrial Plant Energy Efficiency Standards

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
Clarifying, technical amendment.	No substantive change.

Sec. 244. Motor Market Assessment and Commercial Awareness Program

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p>	<p>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.</p>

Sec. 245. Motor Efficiency Rebate Program

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>A rebate program is established for users and distributors of energy efficient motors.</p>

Sec. 246. Clean Energy Manufacturing Revolving Loan Fund Program

<i>Summary of section</i>	<i>Comments</i>
<p>Directs DOE to establish a program to award grants to states to establish revolving loan funds that would provide loans to small and medium-sized manufacturers to establish, reequip, or expand a facility to produce clean energy equipment or energy efficient products or to reduce a facility's energy intensity or greenhouse</p>	

<i>Summary of section</i>	<i>Comments</i>
gas emissions. The maximum grant in any fiscal year would be capped at \$500 million. Each state would be required to ensure that a minimum non-federal match of 20% would be provided for each loan. The term of the loan would be limited to 15 years for fixed assets and 3 years for working capital. Loan interest rates can be below market, but may not exceed prime plus 5%. Loan recipients are required to comply with Davis-Bacon prevailing wage rates. State grant recipients and loan recipients are required to report annually. A total of \$15 billion would be authorized per year for FY2010 and FY2011.	

Sec. 247. Clean Energy and Efficiency Manufacturing Partnerships

<i>Summary of section</i>	<i>Comments</i>
Directs the Department of Commerce, under the Hollings Manufacturing Partnership Program, to establish a clean energy manufacturing supply chain initiative to help manufacturers transition to the use of clean energy, reduce energy intensity, curb greenhouse gas emissions, and increase the use of innovative manufacturing technologies. Also, the federal cost-shared matching requirement would be loosened somewhat, allowing DOE to set the share at 50% or less. Funding authorizations are provided in the amounts of \$200 million for FY2010, \$250 million for FY2011, \$300 million for FY2012, \$350 million for FY2013, and \$400 million for FY2014.	

Sec. 248. Technical Amendments

<i>Summary of section</i>	<i>Comments</i>
Clarifying technical amendments.	No substantive changes.

Subtitle E—Improvements in Energy Savings Performance Contracts

Sec. 251. Energy Savings Performance Contracts

<i>Summary of section</i>	<i>Comments</i>
Revises regulation of energy savings 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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
Makes a technical amendment.	No substantive change.

Sec. 263. Small Community Joint Participation

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 265. Consumer Behavior Research

<i>Summary of section</i>	<i>Comments</i>
Authorizes DOE to establish a competitive grant program for institutions of higher education to identify factors that influence consumer actions to conserve energy and improve energy efficiency. Grants may support studies of consumer habits and behaviors as well as projects that promote public knowledge and awareness of energy use and efficiency behaviors. DOE would be required to report to Congress on progress in establishing the program. Such sums as may be necessary are authorized for the program.	

Subtitle G—Miscellaneous

Sec. 271. Energy Efficient Information and Communications Technologies

<i>Summary of section</i>	<i>Comments</i>
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	This provision would add a new area of focus to a broad array of federal agency energy efficiency measures already underway.

<i>Summary of section</i>	<i>Comments</i>
technologies that could help achieve energy efficiency.	

Sec. 272. National Energy Efficiency Goals

<i>Summary of section</i>	<i>Comments</i>
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 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.	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.

Sec. 273. Affiliated Island Energy Independence Team

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	<p>There are some parallels to EPA's current energy labeling program.</p>

Sec. 275. Industrial Energy Efficiency Education and Training Initiative

<i>Summary of section</i>	<i>Comments</i>
<p>Directs DOE to create a national education and awareness program to inform building, facility, and industrial plant owners, government leaders, and industry leaders about the energy-saving potential of mechanical insulation. By July 2013, DOE would be required to report to Congress on program effectiveness, energy and cost savings, greenhouse gas emission reductions, and other benefits. Funding would be authorized at \$3.5 million per year for FY2010 through FY2014. The program would terminate at the end of 2014.</p>	

Sec. 276. Sense of Congress (on Aircraft Emissions)

<i>Summary of section</i>	<i>Comments</i>
<p>Expresses a Sense of the Congress that the United States should promote, within the International Civil Aviation Organization, the development of a global framework for regulating greenhouse gas emissions from civil aircraft in a way that treats commercial aviation industries in all countries fairly.</p>	

Subtitle H— Green Resources for Energy Efficient Neighborhoods

Sec. 281. Short Title

<i>Summary of section</i>	<i>Comments</i>
<p>This subtitle may be cited as the “Green Resources for Energy Efficient Neighborhoods Act of 2008” or the “GREEN Act of 2009.”</p>	<p>The provisions in this subtitle are nearly identical to those in H.R. 2336. The subtitle aims to create and/or modify energy efficiency incentives to encourage greater participation in existing HUD energy efficiency programs or to increase the amount of energy efficiency that could be attained.</p>

Sec. 282. Definitions

<i>Summary of section</i>	<i>Comments</i>
Establishes definitions for various terms, including <i>green building standards</i> , <i>HUD assistance</i> , <i>nonresidential structure</i> , and <i>Secretary</i> .	

Sec. 283. Implementation of Energy Efficiency Participation Incentives for HUD Programs

<i>Summary of section</i>	<i>Comments</i>
Requires HUD, not later than 180 days of enactment, to establish annual energy efficiency participation incentives within the programs under its jurisdiction. The availability of the incentives would be subject to the annual appropriations process.	This section aims to give HUD flexibility to create or improve incentives to encourage higher rates of participation in existing energy efficiency programs.

Sec. 284. Basic HUD Energy Efficiency Standards and Standards for Additional Credit

<i>Summary of section</i>	<i>Comments</i>
<p>(a) Establishes minimum HUD energy efficiency standards for new single family or multifamily buildings as the applicable provisions of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard and the applicable provisions of the 2009 International Energy Conservation Code (IECC). These approved standards cover the building envelope, insulation, and the mechanical, lighting, and power systems.</p> <p>For existing structures to comply with energy efficiency goals when undergoing rehabilitation or improvements, a 20% reduction in energy use must be attained. The percentage reduction would be determined by an energy audit.</p> <p>The Secretary of Housing and Urban Development shall review the adoption of any such requirements, standards, checklists, or rating systems for purposes of this section no later than 180 days after receipt of a written request.</p>	These standards apply only to federal programs that already provide a benefit or credit for compliance. However, this section does give HUD the authority to apply the energy efficiency standards to other HUD programs.

<i>Summary of section</i>	<i>Comments</i>
<p>For nonresidential structures constructed or rehabilitated with HUD assistance, HUD would adopt regulations that incorporate energy efficiency standards or rating systems.</p> <p>(b) Establishes enhanced HUD energy efficiency requirements for a residential or nonresidential building to achieve additional credit under certain federally assisted housing programs.</p> <p>For newly constructed residential buildings, the EPA Energy Star Standards would become the HUD standard for additional credit.</p> <p>For existing residential buildings, a 20% reduction in energy use would establish compliance for additional credit.</p> <p>For nonresidential structures, the following standards and rating systems would apply: the national Green Communities; the gold certification for the Leadership in Energy and Environmental Design (LEED) for New Construction rating system, the LEED for Homes rating system and the LEED for Core and Shell rating system; and the Green Globes assessment and rating system of the Green Building Initiative. The National Green Building Standard will also apply.</p> <p>For manufactured housing to qualify for additional credit, fixtures, appliances, and equipment would have to meet Energy Star ratings.</p> <p>HUD would be required to review the adoption of any such requirements, standards, checklists, or rating systems for purposes of this section no later than 180-day period beginning upon the date of receipt of any written request.</p>	

Sec. 285. Energy Efficiency and Conservation Demonstration Program for Multifamily Housing Projects Assisted with Project-Based Rental Assistance

<i>Summary of section</i>	<i>Comments</i>
<p>Authorizes HUD to conduct a multifamily housing assistance demonstration program of 50,000 units for 4 years to demonstrate the effectiveness of funding a portion of the costs for carrying out energy efficiency and conservation and sustainability. Eligible multi-family housing would include those projects for which project-based rental assistance is provided under a covered multifamily assistance program.</p> <p>HUD would conduct this program subject to congressional appropriations. There would be additional project rental assistance or additional assistance under the Native American Housing Assistance and Self-Determination Act. HUD would seek advice from homebuilders, realtors, nonprofit housing organizations, environmental protection organizations, renewable energy organizations, and advocacy organizations for the elderly and persons with disabilities. The goals of the project would be to encourage energy efficiency improvements, and to install equipment that uses renewable energy resources such as solar, wind, geothermal, or biomass resources. A total of \$50 million would be authorized for each fiscal year in which the demonstration program is conducted.</p>	

Sec. 286. Additional Credit for Fannie Mae and Freddie Mac Housing Goals for Energy Efficient and Location-Efficient Mortgages

<i>Summary of section</i>	<i>Comments</i>
<p>Requires the Director of the Federal Housing Finance Agency (FHFA) to assign more than 125% credit to Fannie Mae and Freddie Mac for certain mortgage purchase activities that comply with the original requirement goals and meet energy efficiency requirements described in Section 284. Those incentives are expected to increase the market for energy-efficient mortgages. The credits cannot be used to increase any other housing goals.</p>	

Sec. 287. Duty to Serve Underserved Markets for Energy-Efficient and Location-Efficient Mortgages

<i>Summary of section</i>	<i>Comments</i>
<p>Amends the Federal Housing Enterprises Financial Safety and Soundness Act of 1992 to include an additional duty to serve underserved markets for energy-efficient and location-efficient mortgages. The enterprises would develop loan products and flexible underwriting guidelines to facilitate a secondary market for energy-efficient and location-efficient mortgages on housing for very low, low, and moderate income families. If urgent circumstances exist, the Director may suspend the applicability of the requirement.</p> <p>An energy-efficient mortgage is defined as a mortgage loan under which the income of the borrower, for purposes of qualification, is considered to be increased by at least \$1 for each \$1 of savings projected to be realized by the borrower as a result of cost-effective energy design.</p> <p>A location-efficient mortgage is defined as a mortgage loan under which the income of the borrower, for purposes of qualification, is considered to be increased by at least \$1 for each \$1 of savings projected to be realized because the location of the home will result in decreased transportation costs for the household of the borrower.</p> <p>A mortgage can also qualify as location-efficient if the sum of the principal, interest, taxes, and insurance due under the mortgage loan is decreased by not less than \$1 for each \$1 of savings projected to be realized by the borrower because the location of the home.</p>	

Sec. 288. Consideration of Energy Efficiency Under FHA Mortgage Insurance Programs and Native American and Native Hawaiian Loan Guarantee Programs

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD to develop underwriting standards for single-family housing that capture the impact that savings on utility costs has on the income of the mortgager for mortgages insured under this act. The goal is for HUD to insure, through FHA, at least 50,000 mortgages that meet the energy-efficiency standards described in this act, by the end of 2012. HUD would apply the same underwriting standards to Indian and Native Hawaiian housing loan guarantees.</p> <p>Data would be collected after December 31, 2011, on the number of mortgages meeting the energy-efficiency standards that went into default or foreclosure. The percentage of such mortgages experiencing default or foreclosure would be gathered, along with the rate of such mortgages compared to the overall rate of single-family housing mortgages experiencing default or foreclosure. The Secretary shall apply the same data collection methods to Indian and Native Hawaiian housing loan guarantees.</p>	

Sec. 289. Energy Efficient Mortgages and Location-Efficient Mortgages Education and Outreach Campaign

<i>Summary of section</i>	<i>Comments</i>
<p>HUD, in consultation with other government officials, would establish a commission to develop and recommend market based incentives to prospective home buyers, lenders, and sellers that incorporate energy efficiency upgrades in new mortgage loan transactions. Not later than 24 months after the date of enactment the commission would provide a written report to Congress on the work of the commission. After submission of the report, HUD would conduct a public awareness, education, and outreach campaign based on the findings of the commission.</p>	

Sec. 290. Collection of Information on Energy-Efficient and Location Efficient Mortgages through Home Mortgage Disclosure Act

<i>Summary of section</i>	<i>Comments</i>
Amends the Home Mortgage Disclosure Act to include the collection of information on the number and dollar amount of mortgage loans for single family and multifamily homes that are energy efficient and location efficient.	

Sec. 291. Ensuring Availability of Homeowners Insurance for Homes Not Connected to Electricity Grid

<i>Summary of section</i>	<i>Comments</i>
Forbids denial of homeowners insurance for a dwelling based solely on the fact that the dwelling is not connected to or able to receive electricity service from any wholesale or retail electric power provider.	

Sec. 292. Mortgage Incentives for Energy Efficient Multifamily Housing

<i>Summary of section</i>	<i>Comments</i>
Requires HUD to establish incentives that aim to increase the energy efficiency of multifamily homes. The incentives would include a discount on the chargeable premiums for mortgage insurance.	Some analysts believe that this section could affect HUD’s ability to cover credit risk or default risk that is unrelated to energy efficiency.

Sec. 293. Energy Efficient Certifications for Manufactured Housing with Mortgages

<i>Summary of section</i>	<i>Comments</i>
Specifies that manufactured homes comply with EPA Energy Star ratings for wall fixtures, appliances, and equipment. HUD would require an individual who has been accredited by the home energy ratings system council, the residential energy services network, or other appropriate national organization to certify any single or multi-family housing seeking to meet energy efficiency criteria.	Some analysts believe this section could discourage participation, if the loan must be closed prior to obtaining all required certifications.

Sec. 294. Assisted Housing Energy Loan Pilot Program

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD to create a pilot program to improve the energy efficiency of assisted living housing projects. All of the cost savings would go to the project owner. The program would include lenders and would provide for a privately financed loan, which would include financing for capital improvements.</p> <p>HUD would set the requirements for capital improvements, which could involve contracts with third parties.</p>	

Sec. 295. Making it Green

<i>Summary of section</i>	<i>Comments</i>
<p>Requires that HUD provide incentives for developers to form agreements with tree planting and landscaping organizations. For new or substantially rehabilitated housing, HUD would require that developers prepare a “green plan” that promotes site-related energy efficiency, preserves existing trees, employs indigenous plants, includes post-planting care and maintenance, and establishes a goal for minimum greenspace or tree canopy cover for the housing site. To aid with implementation design, HUD is encouraged to consult with national organizations involved with housing, low-income services, tree-planting, and landscape design.</p>	

Sec. 296. Residential Energy Efficiency Block Grant Program

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD to make grants to states, cities, counties, Indian tribes, and insular areas to carry out energy efficiency improvements for single-family and multi-family housing that complies with the International Energy Conservation Code (IECC) standards. The allocation formula would be the same as that for the community development block grant program. Each grant recipient must submit to HUD a statement that covers housing energy efficiency objectives and</p>	

<i>Summary of section</i>	<i>Comments</i>
projected use of funds. Each grantee must also meet non-discrimination standards and Davis-Bacon wage requirements. Funding authorization of \$2.5 billion would be provided for FY2010, with such sums as necessary for ensuing fiscal years.	

Sec. 297. Including Sustainable Development and Transportation Strategies in Comprehensive Housing Affordability Strategies

<i>Summary of section</i>	<i>Comments</i>
Amends the Cranston-Gonzalez National Affordability Act to encourage greater energy efficiency and renewable energy use in single-family and multi-family housing as part of a jurisdiction's strategy for sustainable development of affordable housing. Additional strategic actions are expected to include increased conservation, recycling, and reuse of resources, more effective use of existing infrastructure, and use of healthy (carcinogen-free) building materials.	

Sec. 298. Grant Program to Increase Sustainable Low-Income Community Development Capacity

<i>Summary of section</i>	<i>Comments</i>
Authorizes HUD to make grants to nonprofit organizations to train, educate and advise eligible community development organizations in effective design strategies to maximize the energy efficiency of existing infrastructure in affordable housing and low income communities. Loans and grants can also be used to carry out energy efficiency improvements that comply with the standards described in this act. For each grant, the nonprofit organization would be required to provide a minimum 50% (cash or in-kind) match. An authorization of \$10 million per fiscal year would be provided for FY2010 through FY2014.	

Sec. 299. HOPE VI Green Developments Requirement

<i>Summary of section</i>	<i>Comments</i>
<p>Requires new HOPE VI construction to comply with items on the national Green Communities criteria checklist that are identified as “mandatory.” For non-mandatory items on the checklist, HOPE VI projects must accumulate 25 points for new construction and 20 points for rehabilitation. HUD would identify rating systems and levels for green buildings that would encourage a comprehensive and environmentally sound approach. The systems and levels must meet certain criteria for green building, public comment and verification.</p>	

Sec. 299A. Consideration of Energy-Efficiency Improvements in Appraisals

<i>Summary of section</i>	<i>Comments</i>
<p>Requires housing property appraisers, in the case of a federally related transaction, to take into consideration any renewable energy sources or energy efficiency or energy-conserving improvements.</p> <p>Accordingly, each federal financial institution’s regulatory agency must revise its standards for the performance of real estate appraisals in connection with federally related transactions.</p>	

Sec. 299B. Housing Assistance Council

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD’s Housing Assistance Council to encourage any entity receiving assistance from it to comply with energy efficiency standards under Section 284(a) of this subtitle. Further, the Council would be required to establish incentives to encourage compliance with 284(a) and with the green building standards under Section 284(b).</p>	

Sec. 299C. Rural Housing and Economic Development Assistance

<i>Summary of section</i>	<i>Comments</i>
<p>Directs HUD to require that each tribe, agency, organization, and corporation that receives assistance from HUD’s Office of Rural Housing and Economic Development comply with the energy efficiency standards under Section 284(a) of this subtitle. Further, HUD would be required to establish incentives to encourage compliance with 284(a) and with the green building standards under Section 284(b).</p>	

Sec. 299D. Loans to States and Indian Tribes to Carry Out Renewable Energy Sources Activities

<i>Summary of section</i>	<i>Comments</i>
<p>Establishes an “Alternative Energy Sources State Loan Fund” at the Department of Treasury. The fund would provide loans to states and Indian tribes, which, in turn, would provide assistance to owners of single-family and multi-family housing to support renewable energy sources and energy efficiency improvements and features. For each state and tribe, the outstanding principal loan balance would be limited to \$500 million. For each year during the term of a loan, a state or tribe must submit a report to HUD. Also, HUD must file annual reports to Congress on the total amount of loans and on the effectiveness of the fund. A single appropriation of \$5 billion would be authorized.</p>	

Sec. 299E. Green Banking Centers

<i>Summary of section</i>	<i>Comments</i>
<p>Directs federal banking agencies to encourage the establishment and maintenance of green banking centers by federally-insured depository institutions and credit unions. For any consumer who seeks information about a mortgage, home improvement loan, or home equity loan, the green banking center would provide additional information about home energy ratings, energy audits, financing for energy efficiency improvements, and loan benefits that reflect</p>	

<i>Summary of section</i>	<i>Comments</i>
energy efficiency aspects.	

Sec. 299F. GAO Reports on Availability of Affordable Mortgages

<i>Summary of section</i>	<i>Comments</i>
Requires the Comptroller General to submit every three years a report on whether the amendments made by this subtitle directly or indirectly resulted in consequences that limit the availability or affordability of mortgages in any area.	

Sec. 299G. Public Housing Energy Cost Report

<i>Summary of section</i>	<i>Comments</i>
Directs HUD to collect information from each public housing agency regarding the energy costs for the housing units administered by the agency. The information would be required to include the monthly energy costs and such other information that HUD may determine is appropriate.	

Sec. 299H. Secondary Market for Residential Renewable Energy Lease Instruments

<i>Summary of section</i>	<i>Comments</i>
<p>Requires HUD to establish a means of determining the residual value of a renewable energy asset such that a secondary market for residential renewable energy lease instruments may be facilitated. Such means may include, for example, a calculation based on the net present value of projected future energy production from the renewable energy asset.</p> <p>The main purposes of this provision are to minimize up-front costs and provide immediate utility cost savings through leasing of such systems to homeowners. Additional purposes include lower carbon emissions and environmental impacts, encouragement of renewable energy use, and encouragement of private investment.</p>	

Sec. 299I. Green Guarantees

<i>Summary of section</i>	<i>Comments</i>
<p>Authorizes HUD to make commitments to guarantee the repayment of the incremental portion (up to 10%) of a mortgage that can be demonstrably attributed to the cost of sustainable (“green”) building elements. The costs may include those related to increased energy efficiency from improvements to insulation, ventilation, lighting, or water fixtures. Mortgages for both single and multifamily housing may be eligible.</p> <p>The green portion of the mortgage would be limited to no more than 10% of the total principal mortgage obligation and would not be allowed to exceed the total present value of the projected cost savings expected from the green elements. HUD may also set a dollar limit on the green portion of the mortgage.</p> <p>The determination of the amount of cost savings attributable to the sustainable building elements is to be measured in accordance with provisions of the National Green Building Standard.</p>	

Title III—Reducing Global Warming Pollution

Sec. 301. Short Title

<i>Summary of section</i>	<i>Comments</i>
Provides suggested title—“Safe Climate Act.”	

Subtitle A—Reducing Global Warming Pollution

Sec. 311. Reducing Global Warming Pollution

<i>Summary of section</i>	<i>Comments</i>
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. Finding and Purpose”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
Lists GHG emission reduction goals as: <ol style="list-style-type: none"> 1. in 2012, U.S. GHG emissions not to exceed 97% of 2005 GHG emissions 2. in 2020, U.S. GHG 	The 2012 goal is less stringent than targets (7% below 1990 levels by 2012) imposed by the Kyoto Protocol, which the United States did not ratify.

<i>Summary of section</i>	<i>Comments</i>
<p>emissions not to exceed 80% of 2005 GHG emissions</p> <p>3. in 2030, U.S. GHG emissions not to exceed 58% of 2005 GHG emissions</p> <p>4. in 2050, U.S. GHG emissions not to exceed 17% of 2005 GHG emissions</p>	

“Sec. 703. Reduction Targets for Specified Sources”

<i>Summary of section</i>	<i>Comments</i>
<p>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. However, the 2020 target for capped sources is 17% below 2005 levels, differing from the 2020 economy-wide goal of 20% below 2005 levels (in Sec. 702).</p>	<p>To increase support for the bill, the 2020 target for covered sources was revised from the discussion draft, which called for emissions not to exceed 80% of 2005 levels.</p> <p>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.</p>

“Sec. 704. Supplemental Pollution Reductions”

<i>Summary of section</i>	<i>Comments</i>
<p>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)</p>	<p>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.</p> <p>International deforestation reduction activities are also part of</p>

<i>Summary of section</i>	<i>Comments</i>
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 are 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 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”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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	

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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 (by July 1, 2015) outlining additional domestic and international reduction efforts or legislative recommendations that would address these concerns.	

“Part B — Designation and Registration of Greenhouse Gases”

“Sec. 711. Designation of Greenhouse Gases”

<i>Summary of section</i>	<i>Comments</i>
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, and (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”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	

“Sec. 713. Greenhouse Gas Registry”

<i>Summary of section</i>	<i>Comments</i>
<p>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 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.</p>	<p>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 to expand coverage under Sec. 713(a)(2)(C).</p> <p>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.</p>

“Part C – Program Rules”

“Sec. 721. Emission Allowances”

<i>Summary of section</i>	<i>Comments</i>

<i>Summary of section</i>	<i>Comments</i>
<p>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 once, 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.</p>	<p>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.</p>

“Sec. 722. Prohibition of Excess Emissions”

<i>Summary of section</i>	<i>Comments</i>
<p>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 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</p>	<p>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, certain sources do not meet any of the definitions or thresholds. (Sec. 501(b) specifically excludes the agriculture and forestry sectors as “capped sectors” from requirements under this title. However, neither “agriculture and forestry sectors” nor “capped sector” appear in Title III.) These uncapped sources include: agricultural emissions, residential emissions, commercial buildings, and stationary sources that emit less than 25,000 tons/year. The Congressional Budget Office estimates that a total of</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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 compliance in 2016.</p> <p>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.</p> <p>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 (at current emission allowance prices) in a particular year. Starting in 2018, international offsets are discounted: 1.25 offsets equals 1 emission allowance.</p> <p>Allows entities to use “term offset credits” in lieu of domestic offsets. Term offset credits expire</p>	<p>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, <i>Proposed Mandatory GHG Reporting Rule: Overview</i>, Powerpoint Presentation).</p> <p>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. Many of the details regarding implementation—which offsets practices to include and their methodologies—have been delegated to EPA (Title III offsets) and USDA (Title V offsets, domestic agriculture and forestry practices). For more discussion of offset issues, see CRS Report RL34436, <i>The Role of Offsets in a Greenhouse Gas Emissions Cap-and-Trade Program: Potential Benefits and Concerns</i>, by Jonathan L. Ramseur.</p> <p>The ability to use “term offset credits” was added by the June 26, 2009 Manager’s Amendment. Term offset credits address concerns regarding the permanence of particular offset practices, such as agriculture sequestration efforts. This mechanism is similar to the temporary certified emission reductions (tCER) that are allowed under the Kyoto Protocol for forestry and agriculture projects.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>at the end of its term (no more than five years) and must then be replaced with (1) emission allowances; (2) domestic offset credits; or (3) unexpired term offset credits. To use term offsets, a covered entity must provide financial assurance to EPA to demonstrate that the entity has the resources be in compliance when the term offset expires.</p>	

“Sec. 723. Penalty for Noncompliance”

<i>Summary of section</i>	<i>Comments</i>
<p>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 auction clearing price for the earliest vintage year of the most recently conducted auction. 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.</p> <p>Includes noncompliance provisions for “term offset credits” and their related requirements (per Sec. 722).</p>	<p>This provision is generally similar to previous cap-and-trade proposals.</p>

“Sec. 724. Trading”

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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</p>

<i>Summary of section</i>	<i>Comments</i>
effective until EPA receives written certification in accordance with regulations required by Sec. 721.	liquidity.

“Sec. 725. Banking and Borrowing”

<i>Summary of section</i>	<i>Comments</i>
<p>Allows for unlimited banking of emission allowances for compliance in future years.</p> <p>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.</p>	<p>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.</p>

“Sec. 726. Strategic Reserve”

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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, a SR auction with a relatively high reserve price may be utilized 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</p>

<i>Summary of section</i>	<i>Comments</i>
(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.	emission allowance price will rise over time.

“Sec. 727. Permits”

<i>Summary of section</i>	<i>Comments</i>
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. Requires EPA to promulgate implementing regulations within two years of enactment.	

“Sec. 728. International Emission Allowances”

<i>Summary of section</i>	<i>Comments</i>
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 allowances used for U.S. compliance have not been used for compliance with other programs. Allows EPA to issue a rulemaking that limits the amount of international allowances a covered entity may use for compliance purposes.	<p>International allowances are not to be confused with international offsets.</p> <p>Allows for linkage between other cap-and-trade programs, such as the European Union’s Emission Trading Scheme (EU ETS). See CRS Report RL34150, <i>Climate Change and the EU Emissions Trading Scheme (ETS): Kyoto and Beyond</i>, by Larry Parker.</p> <p>Regarding EPA’s authority to limit the use of international allowances, Section 728(d) includes a reference to international emission allowances under Section 722(d)(2). The reference should likely be Section 722(d)(3).</p>

“Part D – Offsets”

“Sec. 731. Offsets Integrity Advisory Board”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
Directs EPA (through the regulatory process) to develop a list of eligible offset project types, which can be revised at a later time. EPA must consider (and give priority to) the	Other cap-and-trade proposals have provided lists of specific projects that should be eligible or, at the least, given consideration. Stakeholders in the agricultural

<i>Summary of section</i>	<i>Comments</i>
Advisory Board recommendations. Persons may petition EPA to add or remove offset project types from the list of eligibility.	sector have raised particular concern regarding the omission of specific project types in the legislation.

“Sec. 734. Requirements for Offset Projects”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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. Both the petition and EPA’s response are to be made publicly available. 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	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 takes elements from both strategies. Although EPA would establish methodologies for eligible projects, 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

<i>Summary of section</i>	<i>Comments</i>
for project developers.	important for offset projects. The provision to make the petition and EPA's response publicly available was added to the bill after it was reported. An analogous provision is not in the Title V offsets program.

"Sec. 736. Verification of Offset Projects"

<i>Summary of section</i>	<i>Comments</i>
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"

<i>Summary of section</i>	<i>Comments</i>
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 <i>already occurred</i> (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. A tracking system with serial numbers is used to avoid situations of double-counting.

"Sec. 738. Audits"

<i>Summary of section</i>	<i>Comments</i>
Authorizes EPA to conduct random audits of offset projects, credits, and	

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
<p>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:</p> <ul style="list-style-type: none"> • An offset project must have started after January 1, 2001. • 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). • 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 	<p>Allowing offsets to be generated from pre-existing 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 about 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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>approved by EPA.</p> <ul style="list-style-type: none"> • The offset standards must have been developed through a public consultation process. • All projects must have been or will be verified by a state regulatory agency or accredited third-party. • Offsets are ineligible if used for compliance with a state law. 	

“Sec. 741. Environmental Considerations”

<i>Summary of section</i>	<i>Comments</i>
<p>Instructs EPA, if it lists forestry or other relevant land management-related projects as eligible offset types, to develop regulations that address concerns particular to these offset types. The list of concerns includes biodiversity, invasive species, and non-native species.</p>	<p>This section supplements the requirement in Sec. 732 for EPA to consider negative effects of offset projects.</p>

“Sec. 742. Trading”

<i>Summary of section</i>	<i>Comments</i>
<p>States that Sec. 724 shall apply to offsets.</p>	<p>This would allow any party to hold and trade offset credits.</p>

“Sec. 743. International Offset Credits”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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-</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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).</p> <p>EPA may issue international offset credits for project types on the list created per Section 733, which covers both domestic and international offsets.</p> <p>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 countries to take measures to reduce, avoid, or sequester greenhouse gases.</p> <p>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.</p> <p>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</p>	<p>by-project; (2) sectoral offsets; (3) credits from an international body; and (4) avoided deforestation offsets.</p> <p>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, <i>Lessons Learned from the European Union’s Emissions Trading Scheme and the Kyoto Protocol’s Clean Development Mechanism</i>, 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 project types can be implemented (in accordance with Sec. 743) in a relatively short period of time (i.e., by 2012).</p>

<i>Summary of section</i>	<i>Comments</i>
make country-specific adjustments, such as discounting. EPA, working with Department of State, is to prepare (within two years of enactment) 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. EPA is to consult with USDA regarding the implementation of international offset credits for projects that reduce deforestation.	

"Part E – Supplemental Emissions Reductions from Reduced Deforestation"

"Sec. 751. Definitions"

<i>Summary of section</i>	<i>Comments</i>
Includes definitions of five terms relevant to Part E.	

"Sec. 752. Findings"

<i>Summary of section</i>	<i>Comments</i>
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"

<i>Summary of section</i>	<i>Comments</i>
Directs EPA , in consultation with the Departments of State and Agriculture, to promulgate regulations that create a	The bill's drafters are counting the supplemental reductions projected from avoided deforestation efforts

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>toward their overall emission reduction goals, particularly in the first 10-15 years.</p> <p>The specific objectives identified in this section are unlikely to be achieved with the initial 5% allotment. (See John Larsen and Robert Hellmayr, <i>Emission Reductions Under the American Clean Energy and Security Act of 2009</i>, 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.</p>

“Sec. 754. Requirements for International Deforestation Reduction Program”

<i>Summary of section</i>	<i>Comments</i>
<p>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 (in consultation with the Administrator of USAID) must promulgate regulations 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.</p> <p>Clarifies that activities supported under this part would not be eligible as offsets.</p>	<p>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.</p>

“Sec. 755. Reports and Reviews”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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.</p>

“Sec. 756. Legal Effect of Part E”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	

Sec. 312. Definitions

<i>Summary of section</i>	<i>Comments</i>
<p>Amends Title VII of the Clean Air Act (created by this legislation) by adding a definitions section before Part A.</p>	

“Sec. 700. Definitions”

<i>Summary of section</i>	<i>Comments</i>
<p>Provides definitions for terms relevant to Title VII.</p>	<p>Among other terms, this section defines <i>covered entity</i>, 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</p>

<i>Summary of section</i>	<i>Comments</i>
	<p>specifically exclude certain emission sources, particularly agriculture. (However, Sec. 501(b) of Title V does specifically exclude the agriculture and forestry sectors from the definition of “capped sectors” under the cap and trade program. However, the phrase “capped sector” does not appear in Title III.) The three categories of <i>stationary sources</i> within the covered entity definition identify specific industrial sectors that are subject, if they meet or 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.</p> <p>The definitions of <i>domestic offset credit</i> and <i>offset credit</i> were changed in the version that passed the House, distinguishing their meanings between Parts C and D of Title III. In effect, these changes allow (domestic) offset credits generated under Title V (agriculture and forestry offsets) to be used for compliance per Title III, Part C, but would separate the implementation of offsets generated under Title III (part D) and Title V. The former would be implemented by EPA, the latter by USDA.</p>

Subtitle B—Disposition of Allowances

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

<i>Summary of section</i>	<i>Comments</i>
Adds Part H to the new Title VII of the Clean Air	

<i>Summary of section</i>	<i>Comments</i>
Act.	

“PART H—DISPOSITION OF ALLOWANCES”

“Sec. 781. Allocation of Allowances for Supplemental Reductions”

<i>Summary of section</i>	<i>Comments</i>
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 distributed for other purposes (e.g., deficit reduction, consumer rebate, or low-income assistance) per Section 782(s). In the subsequent year, the allotment for supplemental reduction will increase by the unused quantity from the preceding year, with a corresponding decrease in allotment for the other purposes (listed above) for that 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, <i>Emission Reductions Under the American Clean Energy and Security Act of 2009</i> (World Resources Institute, May 19, 2009).

“Sec. 782. Allocation of Emission Allowances”

<i>Summary of section</i>	<i>Comments</i>
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	In 2016, 16.57% of the allowances are sold through an auction; in 2030, 65.3% are auctioned. Arguably, a more important distinction is to whom the allowance value (auction revenue and/or no-cost allowance) is

<i>Summary of section</i>	<i>Comments</i>
<p>allotted in the following manner (in some cases, the percentages are estimates):</p> <ul style="list-style-type: none"> • 30% (at minimum) to electricity local distribution companies (LDCs); 0.5% for small electric LDCs; 9% to natural gas local distribution companies; 1.5% to states for home-heating oil consumers; 15% directly to low-income consumers; • 13.4% to energy-intensive, trade-exposed industries; up to 3.5% to merchant coal units; 2% to petroleum refineries plus 0.25% for small business refineries; up to 1.5% for certain long-term power contract operators; • 7.1% to states to support renewable energy and energy efficiency efforts; • 6% to promote technological advances; and • roughly 10% to further other objectives. <p>In 2030, allotments are as follows:</p> <ul style="list-style-type: none"> • 30% for consumer rebate; 15% for low-income consumers; • 6.7% for trade-exposed industries; • 6.5% for technology; • 5% energy efficiency; • 8% for adaptation; • 12% for other objectives; and • 17% of the 2030 allowances were sold in prior years to support consumer rebate or deficit reduction. <p>If allowances that are conditionally allotted for various objectives (e.g., avoided deforestation efforts or carbon capture and storage activities) are not distributed in a given year, EPA may redistribute the allowances for deficit reduction, consumer rebate, low-income assistance, or a combination thereof.</p> <p>In 2012, the bill allots 1% for (documented) emission reduction efforts that occurred before 2009.</p>	<p>distributed and for what purpose.</p> <p>Energy consumers receive a substantial portion of allowance value (in some fashion) throughout the program. In 2016, 41% 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. Small LDCs were granted 0.5% of no-cost allowances in the version that passed the House. Unlike other LDCs, small LDCs may use allowance value for purposes other than the exclusive benefit of energy consumers, such as supporting the deployment of renewable energy use.</p> <p>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 remains constant through 2050.</p> <p>In the early years of the program, covered entities (including CCS projects) receive up to 12% of the allowances at no cost. Allowances allotted to covered entities are phased out over time in most cases (reaching zero by 2030).</p> <p>In addition, up to 15% of allowances are distributed at no cost to industries determined to be energy-intensive and trade-exposed. This allocation is phased out, reaching zero in 2035 unless the President makes a</p>

<i>Summary of section</i>	<i>Comments</i>
	<p>determination under Sec. 767.</p> <p>Regarding the redistribution of unused, conditionally allotted allowances, EPA appears to have some discretion regarding how the allowances are redistributed. This provision was not part of the reported version of the bill.</p> <p>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 2021), it depletes the number of allowances (and potentially the total allowance value) available for distribution in later years. The outcome of this provision may have unforeseen effects.</p>

“Sec. 783. Electricity Consumers”

<i>Summary of section</i>	<i>Comments</i>
<p>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), small electric LDCs, merchant coal units; and specifically defined power production facilities that have entered</p>	<p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>into long-term power contracts.</p> <p>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.</p> <p>Directs EPA to distribute allowances to LDCs based on specific formula: 50% of the distribution would be based on the CO₂ emissions associated with the electricity delivered to customers and 50% would be based on the quantity of electricity delivered (or sold). However, the bill prohibits LDCs from receiving a greater quantity of allowances than is necessary to address any increased electricity costs to ratepayers.</p> <p>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.</p>	<p>Unlike electric generating facilities, some of which are (price) regulated and some of which are not, all LDCs are regulated by a state agency (or are cooperatives) that controls the price of delivered electricity.</p> <p>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). Some argued that LDCs selling less-carbon-intensive electricity would potentially receive a windfall under this formula. To address this concern, the version of the bill that passed the House added a provision that would prohibit LDCs from receiving more allowances than are necessary to cover increased costs. Allowances that would have gone to these LDCs (under the reported version) are to be redistributed to LDCs that sell more carbon-intensive electricity.</p> <p>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 e.g., 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 and authorizes</p>

<i>Summary of section</i>	<i>Comments</i>
	<p>EPA to make adjustments to the merchant coal generators' allocations. 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.</p> <p>The as-passed version includes a carve-out for small electric LDCs, approximately half of which would be rural electric cooperatives. These no-cost allowances would be in addition to the share these LDCs would receive under the allotment to LDCs generally.</p>

“Sec. 784. Natural Gas Consumers”

<i>Summary of section</i>	<i>Comments</i>
<p>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).</p> <p>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.</p>	<p>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.</p> <p>The legislation compels LDCs to use at least 33% of allowances for energy efficiency.</p>

“Sec. 785. Home Heating Oil, Propane, and Kerosene Consumers”

<i>Summary of section</i>	<i>Comments</i>
<p>Outlines process by which EPA is to distribute allowance value to home heating oil, propane, and kerosene 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.</p> <p>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.</p>	<p>Similar to Sec. 783, this section is intended to alleviate the heating oil, propane, and kerosene price increases that would be expected under a cap-and-trade program.</p> <p>The legislation compels states to use at least 50% of the allowances for energy efficiency purposes.</p>

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

“Sec. 787. Allocations to Refineries”

<i>Summary of section</i>	<i>Comments</i>
<p>Outlines process by which EPA is to distribute no-cost allowances (per Sec. 782) to petroleum refineries and small business refiners. Within three years of enactment, EPA must promulgate regulations to established an appropriate distribution formula.</p>	<p>Distributing no-cost allowances to the petroleum refining industry may generate debate. Providing no-cost allowances to refineries may encourage other industries to seek a share of no-cost allowances.</p>

“Sec. 788. Supplemental Agriculture and Renewable Energy Incentives Programs”

<i>Summary of section</i>	<i>Comments</i>
<p>Instructs EPA to distribute allowances for agricultural renewable energy programs (per Sec. 782) at the direction of DOE and USDA. At least 50% of the allowances should be</p>	<p>This section was not in the reported version of the bill. The set-aside allowances for agricultural mitigation activities could catalyze offset generation, especially if the</p>

<i>Summary of section</i>	<i>Comments</i>
<p>allotted to a newly established USDA program that would support agriculture-related GHG mitigation efforts. The supported activities would reduce, avoid, or sequester GHG emissions, but not qualify as offsets.</p> <p>Allowances could also be used to support a newly created EPA and DOE program that would support the deployment of renewable energy infrastructure in the states.</p>	<p>allowance value led to the development of new offset practices or methodologies.</p>

“Sec. 789. Climate Change Consumer Refunds”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>The allocation to the Consumer Climate Change Rebate Fund (CCCRF) begins in 2021 and by 2030, 34% 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 Sections 783-785. Those provisions would support both households and commercial entities. The CCCRF only helps households. Moreover, the allotment from CCCRF (unlike Sections 783-785) would not account for regional differences in energy use or carbon content of energy use.</p>

“Sec. 790. Exchange for State-Issued Allowances”

<i>Summary of section</i>	<i>Comments</i>
<p>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, the Western Climate</p>	<p>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</p>

<i>Summary of section</i>	<i>Comments</i>
<p>Initiative, or the Regional Greenhouse Gas Initiative (RGGI) for emission allowances under this title.</p> <p>Allowances allotted for this purpose will be deducted from the allowances to be auctioned for low-income consumers (Section 782(d)).</p>	<p>will provide that a person exchanging a “state allowance” receive a Title III allowance that is “sufficient to compensate” for the cost of obtaining (this is specifically defined) and holding a state allowance.</p> <p>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%.</p>

“Sec. 791. Auction Procedures”

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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.</p> <p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>allowances offered in any auction. EPA may revise auction design (through the regulatory process) if the agency determines an alternative design is more effective.</p> <p>Directs EPA to issue regulations that would establish a small business refiner (defined in Section 787(b)) allowance reserve. EPA would set aside varying percentages of allowances allocated for auction (e.g., between 2016 and 2024, 4.9% of the total allowances) that could be purchased by small business refiners at a price equaling the average auction price from the previous 12 months. These allowances would not be a separate allocation, but would come from the pool of allowances to be auctioned for all purposes under Section 782 (e.g., deficit reduction, consumer rebates, etc.).</p>	<p>The small business refiner reserve would provide this subset of covered entities with some protection against emission allowance price spikes. This provision was added after the bill was reported.</p>

“Sec. 792. Auctioning Allowances for Other Entities”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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.</p>

“Sec. 793. Establishment of Funds”

<i>Summary of section</i>	<i>Comments</i>
Establishes the Strategic Reserve Fund; the Climate Change Consumer Refund Account; and the Climate Change Worker Adjustment Assistance Fund.	

“Sec. 794. Oversight of Allocations”

<i>Summary of section</i>	<i>Comments</i>
Directs the Comptroller General (by 2014 and every two years thereafter) to conduct a review of the programs administered by the federal government that distribute allowances or auction revenue. The review must examine various aspects, including as the effectiveness of the programs and the performance of activities receiving assistance from the programs. The Comptroller General must submit a report to Congress with the findings.	

“Sec. 795. Exchange for Early Action Offset Credits”

<i>Summary of section</i>	<i>Comments</i>
Directs EPA to promulgate regulations that would distribute emission allowances (in 2012 only) to persons who engaged in emission reduction activities between 2001 and 2008. This would include (unretired) offset credits from pre-existing state or voluntary programs that were issued before 2009 (75% of the allocation), as well as other documented efforts that meet specific conditions (25% of the allocation). The allowance exchange would be based on the monetary value of the offset credits between 2006 and 2008 (adjusted for inflation).	The bill allots 1% of the 2012 emission allowances for this purpose—approximately 46 million allowances. There may be a high demand for these allowances. The bill does not specify how EPA would determine which persons would receive the allowances if the demand exceeds supply.

Subtitle C – Additional Greenhouse Gas Standards

Sec. 331. Greenhouse Gas Standards

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
Provides a revised definition of “stationary source” under this title (Title VIII).	For this title, the threshold for a <i>stationary source</i> 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”

<i>Summary of section</i>	<i>Comments</i>
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.	<p>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.</p> <p>Stationary sources controlled under the Title VII emissions cap would not be subject to a greenhouse gas NSPS under these provisions.</p> <p>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-</p>

<i>Summary of section</i>	<i>Comments</i>
	and-trade program.

“Part C – Exemptions from Other Programs”

“Sec. 831. Criteria Pollutants”

<i>Summary of section</i>	<i>Comments</i>
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 change.	Prevents EPA from regulating greenhouse gases via a National Ambient Air Quality Standard (NAAQS) because of their climate impacts. For more information on stationary sources of greenhouse gases and the Clean Air Act, see CRS Report R40585, <i>Climate Change: Potential Regulation of Stationary Greenhouse Gas Sources Under the Clean Air Act</i> , by Larry Parker and James E. McCarthy.

“Sec. 832. International Air Pollution”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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”

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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)”

<i>Summary of section</i>	<i>Comments</i>
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	<p>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.</p> <p>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</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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 offered for sale by EPA at a set price for the years 2012-2017, and at the auction clearing price thereafter.</p> <p>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.</p> <p>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.</p> <p>Other provisions include the regulation of small containers of class II, group II substances used to refill motor vehicle air conditioners.</p>	<p>producer-importer pool, these allowances are available to covered entities based on their share of production, importation, or acquisitions, minus exports.</p> <p>Auctions are to be held once a year and follow a single-round, sealed-bid uniform price format.</p> <p>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.</p> <p>All proceeds from auctions and sales are deposited in a Stratospheric Ozone and Climate Protection Fund for various purposes, including to encourage the recovery, recycling, and reclamation of any Class II substance (subject to appropriations) in order to reduce emissions.</p>

Sec. 333. Black Carbon

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

“Part E – Black Carbon”

“Sec. 851. Black Carbon”

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p>	<p>Authorizes such sums as necessary to fund this section.</p>

Sec. 334. States

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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.</p>

Sec. 335. State Programs

<i>Summary of section</i>	<i>Comments</i>
Amends Title VIII of the Clean Air Act by adding Part F – “Miscellaneous.”	

“Part F – Miscellaneous”

“Sec. 861. State Programs”

<i>Summary of section</i>	<i>Comments</i>
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 the 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”

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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) if a court remands an EPA decision, EPA shall complete final action within	Attempts to prevent delays in environmental regulation through three 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; (2) requires EPA to respond expeditiously to any remand; and (3)

<i>Summary of section</i>	<i>Comments</i>
an expeditious time period, (3) 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 (4) that the party denied the petition may seek judicial review in the appropriate court of appeals.	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

<i>Summary of section</i>	<i>Comments</i>
Makes various conforming amendments to existing laws.	

Sec. 338. Davis-Bacon Compliance

<i>Summary of section</i>	<i>Comments</i>
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.

Sec. 339. National Strategy for Domestic Biological Carbon Sequestration

<i>Summary of section</i>	<i>Comments</i>
Requires EPA, in consultation with other agencies, to submit to Congress within one year of enactment a comprehensive plan to address barriers to maximizing the potential for sustainable biological carbon sequestration.	

Sec. 340. Reducing Acid Rain and Mercury Pollution

<i>Summary of section</i>	<i>Comments</i>
Requires EPA, within 18 months of enactment, to submit to Congress a report that analyzes the effect of various carbon reduction strategies and technologies on emissions of mercury, sulfur dioxide, and nitrogen oxide, identifies the	

<i>Summary of section</i>	<i>Comments</i>
barriers to cost-effective multi-pollutant control technologies and strategies, and makes appropriate recommendations.	

Subtitle D – Carbon Market Assurance

Sec. 341. Carbon Market Assurance

<i>Summary of section</i>	<i>Comments</i>
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 instruments,” which are defined as regulated allowances and regulated allowance derivatives.

“Part IV – Carbon Market Assurance”

“Sec. 401. Oversight and Assurance of Carbon Markets”

<i>Summary of section</i>	<i>Comments</i>
Provides for the Federal Energy Regulatory Commission (FERC) to regulate the cash market in emission allowances. Within 18 months of enactment, FERC shall issue regulations to provide for effective and comprehensive market oversight; prohibit fraud, market manipulation, and excess speculation; and provide measures to limit unreasonable fluctuation in the prices of regulated allowances. If necessary, rules will include margin requirements and position limitations for individual market participants. To provide for the formation and operation of a fair, orderly, and liquid national market system for allowances, FERC shall establish qualification standards for operation of trading facilities and clearing organizations for regulated allowances. FERC will have the authority to issue cease and desist orders and to suspend or revoke the registration of any trading entity	Regulation of derivatives contracts (futures, options, etc.) based on allowances would fall to the Commodity Futures Trading Commission (CFTC) under current law.

<i>Summary of section</i>	<i>Comments</i>
<p>violating any rule or order issued under this subsection.</p> <p>Taking into consideration the recommendations of an interagency working group created under the bill, the Commodity Futures Trading Commission is to promulgate regulations for the establishment, operation, and oversight of markets for regulated allowance derivatives. The purposes of the derivatives provisions are similar to those above for the cash market. The interagency working group shall also make recommendations to Congress regarding legislative changes needed to ensure that allowance derivatives markets are transparent, fair, stable, and efficient.</p> <p>The CFTC shall collect information and report periodically on the operation of the allowance derivatives markets.</p>	

Sec. 342. Carbon Derivative Markets

<i>Summary of section</i>	<i>Comments</i>
<p>Amends the Commodity Exchange Act to place allowance derivatives on the same regulatory basis as derivatives based on agricultural commodities.</p>	<p>This section would mean that allowance derivatives could not be traded in the over-the-counter (OTC) market without a specific regulatory exemption from the CFTC.</p>

Subtitle E—Additional Market Assurance

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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p> <p>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.</p> <p>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 provision would apply to all commodities, not just energy.</p>	<p>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.</p> <p>CFTC currently has authority to set position limits, but delegates that authority to the exchanges. There are no position limits applicable to OTC derivatives.</p> <p>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.</p>

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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
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

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>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.</p>	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

<i>Summary of section</i>	<i>Comments</i>
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)	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

<i>Summary of section</i>	<i>Comments</i>
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.	insurance against default.

Sec. 356. Transaction Fees

<i>Summary of section</i>	<i>Comments</i>
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 Antitrust Law or Authority of the Federal Trade Commission

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

Sec. 358. Effect of Derivatives Regulatory Reform Legislation

<i>Summary of section</i>	<i>Comments</i>
Upon passage of derivatives regulatory reform legislation, Sections 351, 352, 354, 355, 356, and 357 of this act shall be repealed, and regulations issued pursuant to those sections shall be null and void.	See CRS Report R40646, <i>Derivatives Regulation in the 111th Congress</i> , by Mark Jickling and Rena S. Miller, for information on other derivatives reform legislation.

Sec. 359. Cease-and-Desist Authority

<i>Summary of section</i>	<i>Comments</i>
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.

Sec. 360. Presidential Review of Regulations

<i>Summary of section</i>	<i>Comments</i>
Not less than 24 months after enactment, the President shall review offset and derivatives regulations issued pursuant to this act, and shall determine whether they adequately protect the U.S. financial system from systemic risk.	A major purpose of derivatives reform proposals is to reduce the possibility that derivatives losses can spill over into other markets, generating systemic instability.

Title IV – Transitioning to a Clean Energy Economy

Subtitle A – Ensuring Real Reductions In Industrial Emissions

Sec. 401. Ensuring Real Reductions in Industrial Emissions

<i>Summary of section</i>	<i>Comments</i>
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, “ <i>Carbon Leakage</i> ” and <i>Trade: Issues and Approaches</i> , by Larry Parker and John Blodgett.

“Part F—Ensuring Real Reductions in Industrial Emissions”

“Sec. 761. Purposes”

<i>Summary of section</i>	<i>Comments</i>
Lists seven environmental and economic purposes for the provisions of Part F.	The purpose of the new Part F is both environmental in terms of reducing potential carbon leakage resulting from potential shifts of

<i>Summary of section</i>	<i>Comments</i>
	production and investment from the United States to countries without carbon controls, and economic in terms of preventing the associated job loss from such a shift.

“Sec. 762. Definitions”

<i>Summary of section</i>	<i>Comments</i>
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.	As passed, potential product coverage with respect to the subpart 2 international reserve allowance system is greatly expanded compared with the bill as reported. In addition to covering primary products, such as iron, steel, aluminum, and cement, the bill as passed includes “manufactured item for consumption”—i.e., finished goods, which could involve items ranging from aluminum cans to automobiles. Such a potentially broad definition may be difficult to implement and create conflicts with commitments the United States has under the World Trade Organization (WTO) and various free trade treaties (such as NAFTA).

“Subpart 1—Emission Allowance Rebate Program”

“Sec. 763. Eligible Industrial Sectors”

<i>Summary of section</i>	<i>Comments</i>
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	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

<i>Summary of section</i>	<i>Comments</i>
<p>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 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 2004-2006 time period, unless unavailable. However, the bill provides that EPA shall determine additional sectors eligible if they (1) meet the greenhouse gas or energy intensity criteria at the time the rule is promulgated and (2) meet trade intensity criteria based on post-2006 data. The bill also has provisions allowing individual entities to petition for inclusion of their subsector under the program.</p>	<p>costs from implementing Title VII.</p> <p>The criteria generally reflect those contained in H.R. 1759, but with a modification of the greenhouse gas intensity calculation and the addition of the very energy or greenhouse gas intensive category. The provision providing for additional eligible sectors was added after the bill was reported by the Energy and Commerce Committee.</p>

“Sec. 764. Distribution of Emission Allowance Rebates”

<i>Summary of section</i>	<i>Comments</i>
<p>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 annual average emissions per unit of output over the most recent four years times the company’s annual 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</p>	<p>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.</p> <p>As provided in Sec. 767, the President may modify the phase-out schedule for a sector if 15% or more of U.S. imports for that sector is still produced by countries with inadequate carbon policies. This threshold is different from that contained in the bill as reported which was based on global output</p>

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p> <p>Unless modified by the President, the allowance rebates are phased out over a 10-year period, beginning in 2026. Facilities that ceased to engage in qualifying activities would lose their allocations at the point they ceased those activities.</p> <p>Provides that iron and steel made with different processes and metal, soda ash, or phosphate production classified under more than one NAICS code be treated as different categories under the section; and that differences in use of combined heat and power technologies be taken into account.</p>	<p>rather than U.S. imports.</p>

“Subpart 2 – Promoting International Reductions in Industrial Emissions”

“Sec. 765. International Negotiations”

<i>Summary of section</i>	<i>Comments</i>
<p>Requires the President as soon as practicable after enactment to notify all non-exempted countries that the United States (1) seeks international agreements that commit all major emitting nations to contribute equitably to reducing greenhouse gas emissions; (2) requests the country take appropriate measures to limit its greenhouse gas emissions, and (3) may apply the international reserve requirements of this subpart to a covered good beginning on January 1, 2020.</p>	

“Sec. 766. United States Negotiating Objectives with respect to Multilateral Environmental Negotiations”

<i>Summary of section</i>	<i>Comments</i>
States four negotiating objectives of the United States under this subpart.	Lists the environmental and economic elements the United States would seek in negotiating an international greenhouse gas reduction agreement.

“Sec. 767. Presidential Reports and Determinations”

<i>Summary of section</i>	<i>Comments</i>
<p>Requires the President by January 1, 2017 (and biannually thereafter), 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.</p> <p>If there is no multilateral agreement on reducing greenhouse gases in force by January 1, 2018, the President shall establish an international reserve allowance program for all eligible sectors unless the President determines and the Congress concurs that the program, or inclusion of a sector within that program, would not be in the Nation’s economic or environmental interests.</p> <p>Beginning June 30, 2018, and every four years thereafter, the President shall determine for each eligible industrial sector whether more than 85% of U.S. imports for that sector is from countries that are either (1) parties to international agreements requiring economy-wide binding national commitments at least as stringent as those of the United States; (2) have annual energy or greenhouse gas intensities for the sector comparable or better than the equivalent U.S. sector; or (3) parties to</p>	<p>The international reserve allowance program would be implemented unless the Congress either (1) ratifies an multilateral agreement reducing greenhouse gases or (2) votes to concur with a Presidential determination that the program would not be in the Nation’s economic or environmental interest. Likewise, the program must cover each eligible industrial sector unless the Congress votes to concur with a Presidential determination that including that sector would not be in the Nation’s economic or environmental interest. This is a fundamental difference between the bill as passed and the bill as reported. As reported, implementation of the international reserve allowance program was not subject to congressional review, but based on criteria and a Presidential determination that it would be effective in address carbon leakage within an eligible industrial sector.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>an international or bilateral emission reduction agreement for that sector. If not, the President shall no later than June 30, 2018 (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 (1) modifying the rebate formula under Subpart 1, and (2) implementing (or continuing to implement) an international reserve allowance program with respect to imports of covered goods from that sector.</p>	

“Sec. 768. International Reserve Allowance Program”

<i>Summary of section</i>	<i>Comments</i>
<p>Requires EPA to promulgate rules establishing an international reserve allowance system for covered goods from the eligible industrial sector, including allowance trading, banking, pricing, and submission requirements. Allowances will be required for importation into the United States of any covered good of an eligible industrial sector from a covered country. Exemptions are provided for (1) least developed countries, (2) countries who emit less than 0.5% of global greenhouse gas emissions, and (3) countries meeting the criteria of Sec. 767.</p> <p>The program must be consistent with U.S. commitments under international agreements, and in a manner that minimizes the likelihood of carbon leakage resulting from costs differentials resulting from compliance by U.S. companies with the U.S. reduction program compared with compliance by foreign companies with</p>	<p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>their nation’s reduction program.</p> <p>The EPA shall adjust the international reserve allowance requirement based on the value of allowances allocated free under Subpart 1 and under Sec. 782(a) (electricity providers), including reducing the requirement to zero.</p> <p>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, 2020.</p>	

“Sec. 769. Iron and Steel Sector”

<i>Summary of section</i>	<i>Comments</i>
<p>For this subpart, iron and steel produced by different processes shall be considered as one eligible industrial sector.</p>	

Subtitle B—Green Jobs and Worker Transition

Part 1—Green Jobs

Sec. 421. Clean Energy Curriculum Development Grants

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	<p>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</p>

<i>Summary of section</i>	<i>Comments</i>
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 skills and training necessary may be transferable from and to other job classifications.

Sec. 422. Increased Funding for Energy Worker Training Program

<i>Summary of section</i>	<i>Comments</i>
Section 171(e)(8) of the Workforce Investment Act of 1998 is amended by striking \$125,000,000 and adding \$150,000,000.	

Sec. 423. Development of Information and Resources Clearinghouse for Vocational Education and Job Training in Renewable Energy Sectors

<i>Summary of section</i>	<i>Comments</i>
The Secretary of Labor, in collaboration with the Secretary of Energy and the Secretary of Education, is required to develop an internet-based information and resources clearinghouse to aid career and technical education and job training programs for the renewable energy sectors, including solar energy systems, wind energy systems, energy transmission systems, geothermal systems of energy and heating, and energy efficiency technical training, as well as basic environmental science.	

Sec. 424. Monitoring Program Effectiveness

<i>Summary of section</i>	<i>Comments</i>
The Secretary of Labor is instructed to monitor the potential growth of affected and displaced workers to ensure that the funding level is appropriate.	

Sec. 424A. Green Construction Careers Demonstration Project

<i>Summary of section</i>	<i>Comments</i>
<p>The Secretary of Labor, in consultation with the Secretary of Energy, is instructed to establish a Green Construction Careers demonstration project. The purpose of the demonstration project is to promote middle class careers and quality employment practices in the green construction sector among targeted workers and to advance efficiency and performance on construction projects. The Secretary must identify projects under the conditions of this Act and will establish pre-apprenticeship and apprenticeship programs for targeted workers.</p>	

Part 2—Climate Change Worker Adjustment Assistance

Sec. 425. Petitions, Eligibility Requirements, and Determinations

<i>Summary of section</i>	<i>Comments</i>
<p>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. Workers in energy, energy producing, energy-intensive or other industries (that are deemed affected by Title VII of the Clean Air Act) are eligible for assistance. The Labor Secretary will make a determination of eligibility for assistance and inform the industry of the finding.</p>	

Sec. 426. Program Benefits

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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.</p>

Sec. 427. General Provisions

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>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.</p>

Subtitle C – Consumer Assistance

Sec. 431. Energy Refund Program

<i>Summary of section</i>	<i>Comments</i>
<p>Amends the Social Security Act (42 U.S.C. 201) by adding Title XXII.</p>	

“Title XXII—Energy Refund Program

“Sec. 2201. Energy Refund Program”

<i>Summary of section</i>	<i>Comments</i>
<p>Directs the Secretary of Health and Human Services to establish and administer a program to reimburse (via monthly cash payments) eligible low-income households for their loss of purchasing power resulting from the bill’s enactment. Defines eligible households as (among other potential criteria) those with gross incomes not exceeding 150% of the poverty line.</p> <p>Directs EIA to annually provide an estimate of the total purchasing power loss that low-income households would experience in the next fiscal year. Provides a formula for calculating each household’s monthly refund, based on household size and the EIA estimate.</p> <p>Requires state agencies to assume administrative responsibilities, including the certification of household applicants, the issuance of refunds, and related accounting.</p> <p>Stipulates that the refund shall not be considered income under federal, state, or local laws. Further, states cannot decrease assistance that would otherwise be provided because of the receipt of the energy refunds.</p>	<p>Households with gross incomes below 150% of the poverty line would be eligible for the full refund. The refund would decrease for households with incomes above this level, and is estimated to phase out completely near 160% of the poverty line—approximately \$39,000 for a family of 4 in 2009 (see Center on Budget and Policy Priorities, <i>How Low-Income Consumers Fare in the House Climate Bill</i>, July 8, 2009).</p> <p>State agencies are directed to automatically enroll certain groups: current recipients of other low-income assistance (e.g., food stamps). Other potential recipients would need to apply for the refund.</p> <p>The projected purchasing power loss estimated by EIA must consider benefits from allocation to electric and natural gas LDCs and states for home heating oil consumers. The energy refund amount does not account for possible regional differences among lower-income households.</p>

Sec. 432. Modification of Earned Income Credit Amount for Individuals

<i>Summary of section</i>	<i>Comments</i>
<p>Amends Section 32 of the Internal Revenue Code to expand the Earned Income Tax Credit for individuals who work but have no qualifying children.</p>	<p>Relief under Section 431 is projected to leave out this particular group. This section provides relief to these persons. For more information see Center on Budget and Policy Priorities, <i>How Low-Income Consumers Fare in the House Climate Bill</i>, July 8, 2009.</p>

Sec. 433. Protection of Social Security and Medicare Trust Funds

<i>Summary of section</i>	<i>Comments</i>
Amends Section 201 of the Social Security Act (42 U.S.C. 401) to require the Secretary of the Treasury to transfer (“from time to time”) funds from the Treasury (not otherwise appropriated) to the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund, so that these trust fund amounts would account for changes brought on by H.R. 2454.	

Subtitle D—Exporting Clean Technology

Sec. 441. Findings and Purposes

<i>Summary of section</i>	<i>Comments</i>
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.	<p>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.</p> <p>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.</p> <p>Emissions allowances will be set aside from the Clean Air Act provisions and distributed by the Secretary of State. 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.</p>

Sec. 442. Definitions

<i>Summary of section</i>	<i>Comments</i>
<i>Allowance</i> —An emission allowance established	

<i>Summary of section</i>	<i>Comments</i>
<p>under Sec. 721 of CAA.</p> <p><i>Appropriate Congressional Committees</i>—House: Energy and Commerce, Foreign Affairs. Senate: Environment and Public Works, Energy and Natural Resources, Foreign Relations.</p> <p><i>Convention</i>—United Nations Framework Convention on Climate Change</p> <p><i>Developing Country</i>—Country eligible to receive assistance from the World Bank.</p> <p><i>Eligible Country</i>—A developing country determined by the President under Sec. 454 as eligible to receive assistance from the International Clean Technology Fund (ICTF).</p> <p><i>Interagency Group</i>—Group established by the President under Sec. 453 to administer the ICTF.</p> <p><i>International Clean Technology Account</i>—The account to which the Administrator allocates allowances under Sec. 782(o) of CAA.</p> <p><i>Least Developed Country</i>—A foreign country the United Nations has identified as among the least developed of developing countries.</p> <p><i>Qualifying Activity</i>—An activity that meets the criteria in Section 445.</p> <p><i>Qualifying Entity</i>—A national, regional, or local government in, or a nongovernmental organization or private entity located or operating in, an eligible country.</p>	

Sec. 443. Governance

<i>Summary of section</i>	<i>Comments</i>
<p>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 and is to distribute allowances directly in</p>	

<i>Summary of section</i>	<i>Comments</i>
consultation with the interagency group.	

Sec. 444. Determination of Eligible Countries

<i>Summary of section</i>	<i>Comments</i>
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.	<p>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.</p> <p>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).</p>

Sec. 445. Qualifying Activities

<i>Summary of section</i>	<i>Comments</i>
<p>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—</p> <p>(1) deployment of technologies to capture and sequester carbon dioxide emissions from electric generating units or large industrial sources</p> <p>(2) deployment of renewable electricity generation from wind, solar, sustainably-produced biomass, geothermal, marine, or hydrokinetic sources;</p> <p>(3) substantial increases in the efficiency of electricity transmission, distribution, and consumption;</p> <p>(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</p>	<p>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 industrializing economies with substantial GHG emissions.</p> <p>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.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>subtitle in order to reduce, sequester, or avoid GHG emissions;</p> <p>(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;</p> <p>(6) reduction in black carbon emissions; or</p> <p>(7) capacity building activities.</p>	

Sec. 446. Assistance

<i>Summary of section</i>	<i>Comments</i>
<p>Authorizes the Secretary of State, in consultation with the interagency group, to provide assistance for projects in eligible countries in the form of allowances. Assistance may be bilateral, to multilateral funds or institutions, or through some combination of these mechanisms.</p>	

Subtitle E. Adapting to Climate Change

Part 1. Domestic Adaptation

Subpart A. National Climate Change Adaptation Program

<i>Summary of section</i>	<i>Comments</i>
	<p>Overview: Part 1 provides for the continuation and coordination of federal global change research, and provides for establishment of new interagency National Climate Services and a NOAA Climate Service Office. Part 1 also establishes two domestic adaptation programs. Each program has distinct interagency coordination bodies, program offices, requirements for assessments, adaption plans and strategies, funding mechanisms, and reporting requirements.</p>

Sec. 451. Global Change Research and Data Management

<i>Summary of section</i>	<i>Comments</i>
<p>Directs the President to establish an interagency coordinating committee, a U.S. Global Change Research Program (USGCRP), a National Global Change Research and Development Plan, budget coordination, Vulnerability Assessment, Policy Assessments, and annual reports to Congress. It also establishes a Global Change Research Information Exchange and interagency data management, and requires reports on ice sheet melt and sea level rise, and on implications of hurricane frequency and intensity patterns.</p>	<p>(Added following Committee action on H.R. 2454.)</p> <p>Repeals and replaces Titles I and III of the existing Global Change Research Act (GCRA) of 1990 (P.L. 101-606; 15 U.S.C.2921 et seq.), which established an interagency coordinating committee and the U.S. Global Change Research Program (USGCRP). H.R. 2454 provisions are in many aspects similar or identical to those in the GCRA, but more expansive. It leaves in place Title II of the GCRA, which covers international global change research cooperation.</p> <p>Expands participation in the interagency coordinating committee to include resource management and climate mitigation agency representatives.</p>
<p>Sec. 451(4). Continues federal global change research under the “Global Change Research and Data Management Act of 2009.” President must establish a United States Global Change Research Program (USGCRP), to be lead by the Office of Science and Technology Policy (OSTP). Director of OSTP must identify “interagency program activities” in the Research and Assessment (R&A) Plan that are not funded, and allocate funds to agencies to conduct those activities.</p> <p>At least one workshop per year must involve regional, state, and local decision-makers, non-federal experts, and other stakeholder groups.</p> <p>Authorizes \$10 million annually for FY2009-FY20014.</p>	<p>OSTP does not have existing authority to “allocate funds” to agencies. While many observers support an interagency funding mechanism, others would argue that this is not an appropriate role for OSTP. No consensus exists on which agency might be appropriated and reallocate funding meant for interagency program activities.</p> <p>\$10 million annually for “interagency program activities” is approximately twice the amount currently spent for interagency coordination. These coordination costs compare with \$2.4 billion appropriated for conducting climate change R&D in all agencies for FY2009 and \$2.0 billion requested for FY2010.</p>
<p>Sec. 451(5). Requires National Global Change Research and Assessment Plan. President must submit an outline of the Plan to Congress within one year of enactment, and the Plan within three</p>	<p>The purpose of the GCRP is broadened from “scientific understanding” in the GCRA of 1990 to include responding to the information needs of communities and</p>

<i>Summary of section</i>	<i>Comments</i>
<p>years of enactment and every five years thereafter. The Plan is for research which most effectively advances scientific understanding of global change and provides information of use to authorities in developing related policies. Among other requirements, the Plan must recommend how to coordinate with research and assessments of other nations and international organizations. It must also catalog the types of information needed by decision makers to develop policies to reduce vulnerabilities to global change. The Plan also must provide for global observations; economic, demographic, and technological trends; indicators of global change; paleoclimatic studies; “assessment of predictability” of models simulating global and regional environmental processes and trends; interdisciplinary research initiatives; and research initiatives to meet the information needs of decision-makers.</p> <p>In additional to reviews of the research plan by the National Research Council, the National Governors Association’s Center for Best Practices is to evaluate the utility of each plan and information outputs, and recommend research priorities; and public comment is to be invited.</p>	<p>decision makers, and to provide periodic assessments of vulnerability to global and regional climate change. The provisions also add data acquisition and management to the functions of the GCRP more explicitly.</p> <p>Adds a new external review through the National Governor Association’s Center for Best Practices.</p>
<p>Sec. 451(6). For budget coordination, the President is to provide general guidance to agencies, and is to submit with the annual budget request a description of elements in each agency’s budget that are parts of the GCRP.</p>	<p>Provides for budget coordination. Also establishes a new requirement for a description of each element in the GCRP in each agency’s budget proposal.</p>
<p>Sec. 451(7) Requires a Vulnerability Assessment within 1 year of enactment and every 5 years thereafter, with a time frame of the subsequent 25 to 100 years. Assessment is to cover the United States and other world regions, and multiple sectors and categories of impacts.</p>	
<p>Sec. 451(8) Requires a Policy Assessment within one year of enactment and every four years thereafter by the National Academy of Public Administration and the National Academy of Sciences, to cover both climate change mitigation and adaptation options.</p>	<p>Extends the GCRP into evaluation of implementation of policies and of new policy options. The Policy Assessment paragraphs use the term “policy options,” which sometimes seems to refer to policies and program under implementation, as well as into economic analysis of policy options.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>Sec. 451(9) Requires annual reports with agency budget requests describing the activities of the GCRP in the preceding year, those planned for the next year, and of the decision makers identified as potential users of information generated by the GCRP, and outreach activities to these groups.</p>	<p>These elements were not included in the GCRA of 1990.</p>
<p>Sec. 451(12). Requires the President to establish or designate a Global Change Research Information Exchange to archive research and other information, and to make it accessible electronically. Requires an interagency climate and other global change data management working group to make recommendations.</p> <p>Requires a study by the National Academy of Sciences on current ice sheet melt, “as caused by climate change,” and implications for sea level rise, due within 18 months of enactment.</p> <p>Requires a study on potential implications of climate change on hurricane frequency and intensity, storm tracks, and implications for storm-prone coastal regions, due within 18 months of enactment.</p> <p>Requires reports to Congress within one year of enactment and every four years thereafter. The report should, inter alia, identify gaps in data and recommend actions to fill those gaps; propose an interagency coordinated strategy for a capital investment strategy, funding and allocating responsibilities, and “evaluate optimal design of observation system components to ensure a cost-effective, adequate set of observations detecting and tracking global change.”</p>	<p>The relationship of the Global Change Research Information Exchange to the new National Climate Services (Sec. 452) and the new Climate Service Office in NOAA (Sec. 452(e)) is not defined, and is to be established or designated by the President.</p>

Sec. 452. National Climate Service

<i>Summary of section</i>	<i>Comments</i>
<p>The National Climate Service Act of 2009. Establishes a National Climate Service (NCS) and defines the activities to be undertaken within the National Oceanic and Atmospheric Administration (NOAA), to:</p>	<p>Establishes a new National Climate Service, leaving evaluation of options, and design and location of the program, to the President.</p> <p>The relationship of the National Climate</p>

<i>Summary of section</i>	<i>Comments</i>
<ul style="list-style-type: none"> • advance understanding of climate variability and change at different scales; • provide forecasts, warnings, and other information on weather and climate; and • support development of adaptation and response plans by federal agencies. 	<p>Service, or the new Climate Service Office in NOAA, to the Global Change Research Program and the Global Change Research Information Exchange is not made explicit.</p> <p>“Climate” and “climate variability,” as distinct from “weather,” are not defined, and have been inconsistently used in some proposals for a national climate service. Sec. 452(b)(2) explicitly calls for “weather” forecasts, warnings and other information.</p>
<p>Sec. 452(d). Requires a process through the Committee on Environment and Natural Resources (CENR) of the National Science and Technology Council (NSTC), led by the Director of OSTP, “to evaluate alternative structures to support a collaborative, interagency research and operational program” to meet the surveyed needs of decision makers for information related to climate variability and change. The Director of OSTP must report to Congress within one year of enactment on current climate products and on the needs of users and stakeholders for new climate products and services.</p>	
<p>Sec. 452(e). Requires the Under Secretary of Commerce to establish a Climate Service Office (CSO) within NOAA and appoint a Director of the Office to collaborate with NOAA line offices, and additional entities (see Regional Integrated Science and Assessment Teams and Regional Climate Change Centers, below) as well as with other federal agencies, to collect, ensure quality control, and disseminate climate-related information. The CSO must coordinate programs at NOAA to produce and distribute data and information over “all time scales” relevant for planning and response. In Sec. 452(j), the Under-Secretary of Commerce must prepare a plan to create the CSO within NOAA, in consultation with the Director of OSTP and the process to develop the NCS. The Under-Secretary must submit the plan to the President and Congress within one year of enactment.</p>	<p>Requires the Under-Secretary of Commerce to establish a new Climate Services Office within NOAA, and defines responsibilities and some relationships to operational parts of NOAA, including the National Weather Service.</p> <p>The relationship of the NOAA Climate Services Office to the National Climate Services is left to be determined, but its implementation plan must be coordinated with the Director of OSTP and also with the process to evaluate alternative structures for, and to establish, the National Climate Services.</p>
<p>Sec. 452(f). Requires the Under-Secretary of Commerce to appoint a Climate Service Advisory</p>	

<i>Summary of section</i>	<i>Comments</i>
Committee, with two subcommittees, to advise on (1) research, technology development, observations, etc., and (2) products needed and delivered for information users. Sec. 14 of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to this committee.	
Sec. 452(h). Establishes Regional Integrated Science and Assessment Teams (RISAs) to contribute to NOAA's efforts to deliver climate services in U.S. regions.	RISAs exist under existing NOAA climate change programs. The list of eligible participants does not include non-research non-governmental organizations and certain other non-profit entities, although it includes for-profit entities.
Sec. 452(i). Requires a survey of current and climate services delivered by NOAA and on needs of users for new climate products and services. To be reported to Congress within nine months of enactment.	Although not explicitly stated, Sec. 452(i) may authorize NOAA's contribution to the interagency survey of climate service products and needs required under Sec. 452(d)(2).
Sec. 452(k). Establishes Summer Institutes at the Regional Climate Centers for interaction with and training of students and educators. The Under-Secretary must submit a biennial report to Congress on the Summer Institutes.	
Sec. 452(l). Requires the Under-Secretary to establish a Clearinghouse of Federal Climate Service Products and Links to Federal Agencies Providing Climate Services.	The relationship of the Clearinghouse to functions of the NOAA CSO and National Climate Services is unspecified.
Sec. 452(m). Specifies that nothing in Sec. 452 authorizes requirements for States, tribes or local governments to develop adaptation or response plans or to take any other actions in response to variations in climate that may impose a financial burden to such governments.	

Sec. 453. State Programs to Build Resilience to Climate Change Impacts

<i>Summary of section</i>	<i>Comments</i>
By September 30 of each year from 2011 and annually through 2049, the EPA Administrator or other federal agency head(s) designated by the President must distribute allowances for the subsequent calendar year to States and Tribes. States receive allowances on the basis of (1)	

<i>Summary of section</i>	<i>Comments</i>
<p>population and (2) the ratio of each State’s per capita income relative to that of the United States as a whole. Tribes receive 1% of allowances, distributed competitively based on their adaptation plan or project proposals. Uses of allowances are listed, with priority being given to reduce flood risks.</p> <p>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.</p>	

Subpart B. Public Health and Climate Change

Sec. 461. Sense of Congress on Public Health and Climate Change

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	<p>Requires a strategic plan to address public health impacts in the United States, and establishes a fund to help implement the strategic plan.</p>

Sec. 463. National Strategic Action Plan

<i>Summary of section</i>	<i>Comments</i>
<p>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</p>	

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 467. Climate Change Health Protection and Promotion Fund

<i>Summary of section</i>	<i>Comments</i>
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

Sec. 472. Natural Resources Climate Change Adaptation Policy

<i>Summary of section</i>	<i>Comments</i>
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”).	Establishes a cross-agency program to develop and carry out a strategy to address impacts of climate change on U.S. natural resources. Provides financial support and incentives for programs, strategies and activities.

Sec. 474. Council on Environmental Quality

<i>Summary of section</i>	<i>Comments</i>
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	

<i>Summary of section</i>	<i>Comments</i>
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.	

Sec. 475. Natural Resources Climate Change Adaptation Panel

<i>Summary of section</i>	<i>Comments</i>
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, U.S. Geological Survey (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.	

Sec. 477. Natural Resources Adaptation Science and Information

<i>Summary of section</i>	<i>Comments</i>
Directs the Administrator of NOAA and the Director of 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 the Interior must conduct five-year surveys of natural resources impacts of climate change and ocean acidification, monitoring of baselines and trends, and stakeholder needs for monitoring, research, and decision tools.	

Sec. 478. Federal Natural Resource Agency Adaptation Plans

<i>Summary of section</i>	<i>Comments</i>
Requires each federal agency represented on the Natural Resources Climate Change Adaptation Panel to complete a Natural Resources Climate Change Adaptation Plan, consistent with the policy under Sec. 472, within one year of enactment. After approval by the President, adaptation plans must be submitted to Congress within 30 days of approval.	

Sec. 479. State Natural Resources Adaptation Plans

<i>Summary of section</i>	<i>Comments</i>
Requires States to prepare a state natural resources climate change adaptation plan in order to be eligible to receive funds under Sec. 480. The plan must include priorities, programs, measures of effectiveness, and be reviewed and updated every five years.	

Sec. 480. Natural Resources Climate Change Adaptation Fund

<i>Summary of section</i>	<i>Comments</i>
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. Directs percentages of the fund to support a variety of agencies, governments, and programs.	

Sec. 481. National Wildlife Habitat and Corridors Information Program.

<i>Summary of section</i>	<i>Comments</i>
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

Sec. 493. International Climate Change Adaptation Program

<i>Summary of section</i>	<i>Comments</i>
The Secretary of State, consulting with the Administrators of the U.S. Agency for International Development (USAID), EPA, and the Secretary of the Treasury, is to establish an International Climate Change Adaptation Program.	

Sec. 494. Distribution of Allowances

<i>Summary of section</i>	<i>Comments</i>
Directs that 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 institutions.	

Sec. 495. Bilateral Assistance

<i>Summary of section</i>	<i>Comments</i>
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.	Does not explicitly provide for bilateral programs in other agencies that may have capacity-building, technological, financing or other expertise related to adapting to climate change.

<i>Summary of section</i>	<i>Comments</i>
<p>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.</p>	

Title V—Agriculture and Forestry Related Offsets

Subtitle A—Offset Credit Program from Domestic Agricultural and Forestry Sources

Sec. 501. Definitions

<i>Summary of section</i>	<i>Comments</i>
<p>Provides definitions relevant for this title.</p> <p>Subsection 501(b) states that agricultural and forestry sectors are not considered “capped sectors” for the purposes of Titles III (the cap-and-trade provisions) or V. However, the phrase “capped sector” appears nowhere else in the bill.</p>	<p>Definitions similar to those found in CEA Sec. 700.</p> <p>Regarding the capped sector exclusion, <i>agricultural and forestry sectors</i> are not defined in Title V or any other section of H.R. 2454.</p>

Sec. 502. Establishment of Offset Credit Program from Domestic Agricultural and Forestry Sources

<i>Summary of section</i>	<i>Comments</i>
<p>Directs the Secretary of Agriculture to establish an offsets program within one year of enactment of Title V. Instructs USDA to issue rulemakings that would include offset methodologies, provisions to address leakage and/or reversals, third-party verification requirements, and audit procedures.</p> <p>Provides technical assistance to offset project developers from funds appropriated to the</p>	<p>The Conservations Operations account is a technical assistance account in the Natural Resources Conservation Service. This provision is the only mention of funding or appropriation for the Title V offset program.</p>

<i>Summary of section</i>	<i>Comments</i>
Conservation Operations account.	

Sec. 503. List of Eligible Domestic Agricultural and Forestry Offset Practice Types

<i>Summary of section</i>	<i>Comments</i>
<p>Directs USDA within one year of enactment to publish in the <i>Federal Register</i> a list of eligible offset practice types. When preparing the list, USDA shall consider the recommendations of the Advisory Committee. The list “shall include” practices that reduce/sequester GHG emissions, “such as” altered tillage, reduced fertilizer use, afforestation, and manure management, among other examples.</p> <p>Provides for procedures for USDA to add practices to the list or revise the list. Allows parties to petition USDA to add practices to the list.</p>	<p>The “Advisory Committee” is defined (in Section 501) as the USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee established under Section 1245(f) of the Food Security Act of 1985 (16 U.S.C. 3845).</p> <p>Title III (part D) does not have an analogous list of potential offset practices. However, the House Committee on Energy and Commerce report (H.Rept. 111-137, p. 411) did include a list of project types for EPA to consider. The list in the committee report is very similar (but not identical) to the list in Title V.</p> <p>Because the text includes the phrase “such as” instead of “including,” USDA is not required to include on the list the practices specifically identified.</p>

Sec. 504. Requirements for Domestic Agricultural and Forestry Practices

<i>Summary of section</i>	<i>Comments</i>
<p>Directs USDA to establish methodologies (per a regulatory rulemaking process) for the offset practices listed per Sec. 503. For each eligible practice type, USDA is to develop standardized methodologies that address additionality, baseline calculations, measurement, leakage, and uncertainty.</p> <p>USDA 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 Secretary shall subtract and reserve from the quantity to be issued a quantity of offset credits</p>	<p>The text of this section is similar to its analogous section in Title III (Sec. 734). However, this section includes a provision (not found in Sec. 734) stating that the methodology for accounting for leakage cannot consider indirect land use changes. This provision complements the issues addressed in Sec. 551.</p> <p>The crediting period provisions differ from the provisions in Title III, particularly the stipulation that crediting periods for agriculture sequestration practices not exceed five years.</p>

<i>Summary of section</i>	<i>Comments</i>
<p>based on the risk of reversal.”</p> <p>USDA may issue “term offset credits” in lieu of offset credits for offset practices with crediting periods of five years or less. Requires USDA to implement different reversal requirements for term offset credits.</p> <p>USDA will specify the crediting period for each offset practice. Crediting periods will not exceed 5 years for agriculture sequestration; 20 years for forestry sequestration; and 10 years for other practices.</p>	<p>The inclusion of “term offset credits” is a new concept in U.S. cap-and-trade proposals. This mechanism is similar to the temporary certified emission reductions (tCER) that are allowed under the Kyoto Protocol for forestry and agriculture projects. Term offset credits are temporary offsets that may be submitted for compliance per the conditions of section 722(d)(2). These credits expire at their term’s conclusion and must be replaced with emission allowances, other offsets, or unexpired term offset credits.</p> <p>Term offset credits address concerns regarding the permanence of particular offset practices, such as agriculture sequestration efforts. In contrast to offset credits, reversals from term offset credits are only relevant during their crediting period.</p>

Sec. 505. Project Plan Submission and Approval

<i>Summary of section</i>	<i>Comments</i>
<p>Describes the process by which an offset project developer seeks approval for a particular offset project. Requires offset project developers to submit for approval to USDA an offset project plan. Directs USDA within 90 days to either approve or deny the plan. If approved, USDA must provide an estimate of offset credits that would be earned (subject to third-party verification). Includes appeals process. Clarifies that a project plan need only be submitted once in a crediting period.</p>	<p>The Title III offset program requires EPA to make petitions and EPA’s petition decisions publicly available. An analogous requirement does not exist for Title V offsets.</p> <p>Unlike Title III, a voluntary pre-approval process is not established.</p>

Sec. 506. Verification of Offset Practices

<i>Summary of section</i>	<i>Comments</i>
<p>Requires offset project developer to provide USDA with verification from a USDA-accredited third party. USDA 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</p>	<p>Similar to the verification requirements under Title III.</p>

<i>Summary of section</i>	<i>Comments</i>
submittal will be determined by USDA.	

Sec. 507. Certification of Offset Credits

<i>Summary of section</i>	<i>Comments</i>
Directs USDA to make offset issuance determinations no later than 90 days after receipt of the third-party verification reports. After making the determination, USDA is to issue credits within 14 days. Offsets will be assigned unique serial numbers provided by EPA.	<p>Similar to Title III.</p> <p>The assignment of unique serial numbers is one of the few interactions that EPA has with Title V offsets.</p> <p>Title III offsets are to be listed on an offsets registry created in Sec. 732. Sec. 507 states that the unique serial number “will allow for the registration” of Title V offset credits, but it is unclear whether they would be listed on the Title III offsets registry.</p>

Sec. 508. Ownership and Transfer of Offset Credits

<i>Summary of section</i>	<i>Comments</i>
Clarifies that the initial owner of an offset credit would be the project developer. Allows offset credits to be sold, traded, or transferred until they are retired or expired.	Similar to Title III.

Sec. 509. Program Review and Revision

<i>Summary of section</i>	<i>Comments</i>
Requires USDA to review various components—methodologies, reversal policies, accountability measures—of its offset program at least once every five years.	Similar to Title III.

Sec. 510. Environmental Considerations

<i>Summary of section</i>	<i>Comments</i>
Instructs USDA, 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.	Similar to Title III.

Sec. 511. Audits

<i>Summary of section</i>	<i>Comments</i>
Authorizes USDA to conduct random audits of offset projects, credits, and practices of third-party verifiers. Requires USDA to annually audit, at minimum, a representative sample of project types and geographic areas.	Similar to Title III, except that Title V does not contain a provision to delegate audit duties to states.

Subtitle B—USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee

Sec. 531. Establishment of USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee

<i>Summary of section</i>	<i>Comments</i>
<p>Instructs USDA to create an independent USDA Greenhouse Gas Emission Reduction and Sequestration Advisory Committee, which will make recommendations regarding offsets as a whole and methodologies for each eligible offset practice. The Board shall by 2017, and every five years thereafter, provide an analysis to USDA of the Title V offset program and make recommendations regarding the program.</p> <p>Directs the USDA Advisory Committee to consult with the EPA-established Offsets Integrity Board.</p>	Unlike the Title III Offsets Advisory Board, USDA’s committee is not required to make recommendations regarding which offset practices should be considered eligible, but the USDA committee may make recommendations regarding for “the program as a whole,” which could address specific practice types.

Subtitle C—Miscellaneous

Sec. 551. International Indirect Land Use Changes

<i>Summary of section</i>	<i>Comments</i>
Amends the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 and expanded in the Energy Independence and Security Act (EISA) of 2007. To qualify under the program, most renewable fuels must achieve	As expanded by EISA, in determining which fuels qualify under the RFS, EPA must calculate the full lifecycle greenhouse gas emissions from biofuels. For example, biofuels from new refineries must achieve at

<i>Summary of section</i>	<i>Comments</i>
<p>lower lifecycle greenhouse gas emissions relative to petroleum fuels. As defined in EISA, lifecycle emissions include all major direct and indirect emissions attributable to the fuel. Sec. 551 would eliminate a requirement that this lifecycle analysis include indirect land use changes attributable to biofuels that occur outside of the feedstock crop's country of origin.</p> <p>The EPA Administrator and Secretary of Agriculture must contract with the National Academy of Sciences to study whether models exist or can be developed to adequately predict international indirect land use change from biofuels. Within five years of enactment, EPA and USDA must jointly determine whether methodologies can be developed to predict these changes, and, if so, promulgate new regulations on determining those emissions. The new regulations would take effect six years after enactment.</p>	<p>least a 20% reduction in lifecycle emissions relative to gasoline. To qualify for specific carve-outs within the RFS, advanced biofuels (fuels other than corn ethanol) must achieve a 50% reduction, while cellulosic fuels must achieve a 60% reduction.</p> <p>EPA's analysis of emissions must include all major direct and indirect emissions from the development of the feedstock and production of the fuel, including changes in land use resulting from decisions about growing biofuel feedstock crops. Some biofuels proponents have sharply criticized the indirect land use change provision of the RFS, and EPA's proposed regulations on that provision, especially as they related to expected changes in international land use. Critics argue that the provision unfairly penalizes feedstock producers for decision outside of their control and in other countries. Further, they argue that the methodology for determining those changes is in its early stages and is not yet reliable. For more information, see CRS Report R40460, <i>Calculation of Lifecycle Greenhouse Gas Emissions for the Renewable Fuel Standard</i>, by Brent D. Yacobucci and Kelsi S. Bracmort.</p>

Sec. 552. Biomass-Based Diesel

<i>Summary of section</i>	<i>Comments</i>
<p>Amends the renewable fuel standard (RFS) established in the Energy Policy Act of 2005 and expanded in the Energy Independence and Security Act (EISA) of 2007 to grandfather existing biomass-based diesel plants from greenhouse gas reduction requirements.</p>	<p>Under the expanded RFS, biomass-based diesel fuels are granted a specific mandate within the larger RFS mandates. By 2012, the RFS mandates the use of at least 1.0 billion gallons of biomass-based diesel fuels. To qualify for this mandate, biomass-based diesel fuels must achieve at least a 50% reduction in lifecycle greenhouse gas emissions relative to petroleum diesel (see above section). This provision would exempt from that requirement biomass diesel fuels produced from plants that commenced construction before the enactment of EISA</p>

<i>Summary of section</i>	<i>Comments</i>
	(December 19, 2007).

Sec. 553. Modification of Definition of Renewable Biomass

<i>Summary of section</i>	<i>Comments</i>
<p>The EPA Administrator, the Secretary of Agriculture, and the Federal Energy Regulatory Commission are required to contract with the National Academy of Sciences to evaluate how renewable biomass sources contribute to the goals of energy security, environmental protection, and greenhouse gas reduction. After reviewing that report, EPA and FERC may independently modify the definitions of which sources qualify as “renewable biomass” under the renewable fuel standard (RFS) and the renewable electricity standard (RES), respectively (excluding the use of biomass on federal lands). Likewise, the Secretary of the Interior, the Secretary of Agriculture, and the EPA Administrator may jointly modify the definition of “renewable biomass” as it applies to federal lands.</p>	<p>Sec. 126 of H.R. 2454 significantly modifies the definition of “renewable biomass” under the RFS.</p>

Author Contact Information

Mark Holt, Coordinator
Specialist in Energy Policy
mholt@crs.loc.gov, 7-1704

Gene Whitney, Coordinator
Section Research Manager
gwhitney@crs.loc.gov, 7-7231

Brent D. Yacobucci
Specialist in Energy and Environmental Policy
byacobucci@crs.loc.gov, 7-9662

Larry Parker
Specialist in Energy and Environmental Policy
lparker@crs.loc.gov, 7-7238

Jonathan L. Ramseur
Analyst in Environmental Policy
jramseur@crs.loc.gov, 7-7919

Fred Sissine
Specialist in Energy Policy
fsissine@crs.loc.gov, 7-7039

Stan Mark Kaplan
Specialist in Energy and Environmental Policy
skaplan@crs.loc.gov, 7-9529

Richard J. Campbell
Specialist in Energy Policy
rcampbell@crs.loc.gov, 7-7905

Peter Folger
Specialist in Energy and Natural Resources Policy
pfolger@crs.loc.gov, 7-1517

Renée Johnson
Specialist in Agricultural Policy
rjohnson@crs.loc.gov, 7-9588

Jane A. Leggett
Specialist in Energy and Environmental Policy
jaleggett@crs.loc.gov, 7-9525

Megan Stubbs
Analyst in Agricultural Conservation and Natural
Resources Policy
mstubbs@crs.loc.gov, 7-8707

Mark Jickling
Specialist in Financial Economics
mjickling@crs.loc.gov, 7-7784

James M. Bickley
Specialist in Public Finance
jbickley@crs.loc.gov, 7-7794

Key Policy Staff

Area of Expertise	Name	Phone	E-mail
Renewable energy and RES	Richard Campbell	7-7905	rcampbell@crs.loc.gov
Carbon capture and storage	Peter Folger	7-1517	pfolger@crs.loc.gov
Agriculture provisions	Renee Johnson	7-9588	rjohnson@crs.loc.gov
Electricity grid	Stan Kaplan	7-9529	skaplan@crs.loc.gov
Global warming and adaptation	Jane Leggett	7-9525	jaleggett@crs.loc.gov
Pollution/emission reduction programs	Larry Parker	7-7238	lparker@crs.loc.gov
Pollution/emission reduction programs	Jonathan Ramseur	7-77919	jramseur@crs.loc.gov
Energy efficiency and renewables	Fred Sissine	7-7039	fsissine@crs.loc.gov
Agriculture provisions	Megan Stubbs	7-8707	mstubbs@crs.loc.gov
Transportation	Brent Yacobucci	7-9662	byacobucci@crs.loc.gov
