

## Climate Change Bill's Potential Impact on Commercial and Residential Buildings

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On June 26, 2009, the House of Representatives passed the American Clean Energy and Security Act of 2009 ("ACES" - originally H.R. 2454, re-numbered as H.R. 2998). Of course, before ACES can become law, the House and Senate must agree upon terms and if they do, it is likely President Obama will sign the bill into law. Given the focus by Congress and the Administration on health care reform and the on-going economic pressures from the financial crisis, it remains unclear at this point whether or when a climate bill will pass out of Congress. However, the Administration has made passage of a climate bill a priority, and Congress plans to continue work on developing agreeable terms after the August recess.

According to the U.S. Green Building Council, buildings account for 39% of U.S. energy consumption, 72% of the electricity load, and contribute 38% of U.S. carbon dioxide (CO<sub>2</sub>) emissions. CO<sub>2</sub> is the most abundant greenhouse gas blamed for global warming and is produced by the burning of fossil fuels to create energy. Because buildings make a substantial impact on our environment, ACES includes a number of provisions to address the energy efficiency and other environmental impacts of buildings. The summary provided below highlights only key provisions in ACES that will affect buildings and building construction, which should give you an idea of what concepts and requirements may be incorporated into a final bill.

### Large Buildings Subject to Cap and Trade

ACES includes several provisions aimed at reducing emissions of greenhouse gases, some of which may directly impact large buildings. Beginning in 2014, ACES would establish annual caps on emissions of greenhouse gases from fossil fuel-fired combustion devices (e.g., boilers or furnaces) or groups of such devices that emit 25,000 or more tons of CO<sub>2</sub> in a year. In calculating the emissions from such devices, the entity may exclude emissions resulting from combustion of petroleum-based or coal-based liquid fuel, natural gas liquid, renewable biomass or gas derived from renewable biomass, or petroleum coke or gas derived from petroleum coke. Because the bill does not allow the exclusion of emissions from burning the gaseous form of natural gas, large natural gas burning combustion devices, including those servicing buildings, would fall under the cap and trade program. Under the limits established by ACES, greenhouse gases from such sources must be reduced by 17% below 2005 levels by 2020, 42% below 2005 levels by 2030, and 83% below 2005 levels by 2050.

An entity using a fossil fuel-fired combustion device subject to the cap must hold one allowance for each ton of CO<sub>2</sub> emitted. Initially, approximately 80% of the allowances will be freely distributed and the remaining 20% will be auctioned, with the intent to ease the transition to a clean energy economy. By 2030 and beyond, about 70% of the allowances will be auctioned. The Congressional Budget Office estimates that allowance prices in 2005 dollars will be \$16 in 2015 and increase to \$36 by 2030. ACES allows the full trade, sale, exchange, transfer, and holding for compliance of emission allowances.

Within six months after enactment, Section 713 of ACES would require the EPA Administrator to establish a greenhouse gas registry. The regulations creating the registry must require entities operating fossil fuel-fired combustion devices that emit 10,000 or more tons of CO<sub>2</sub> per year (calculated using the same exclusions described above) to submit data on their greenhouse gas emissions and their deliveries of natural gas.

### Performance Standards for Buildings With Uncapped Emissions

Section 811 of ACES amends the Clean Air Act to require the EPA Administrator to publish an inventory of stationary sources that individually had uncapped greenhouse gas emissions greater than 10,000 tons of CO<sub>2</sub> and in the aggregate were responsible for emitting at least 20% annually of the uncapped greenhouse gas emissions. The EPA estimates that a typical Texas office building emits 30 pounds of CO<sub>2</sub>/sq.ft./year, suggesting that even if not subject to the cap and trade program, large office buildings of approximately 670,000 sq. ft. or more could be included on the inventory. The inventory must be published within 12 months after the bill's enactment.

Beginning on the third anniversary of the bill's enactment, the Administrator must begin publishing standards of performance for these uncapped emissions of greenhouse gases, with standards for the most significant emitters required earlier in the program. The EPA must promulgate standards for all categories within 10 years after enactment of the bill. The standards may address design, equipment, work practice, operations, or any combination thereof.

Greater Energy Efficiency in Building Codes.

Upon enactment, Section 201 of ACES would establish a national building code energy efficiency target at 30% below the baseline code. The baseline code is the 2006 International Energy Conservation Code for residential buildings, and the American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 90.1-2004 for commercial buildings. In order to comply with the national code after enactment, energy use in a building must be reduced relative to the baseline code according to the schedule defined below. The Secretary of Energy may modify the energy efficiency targets if it finds greater reductions in energy use are technically feasible and cost-effective on a life-cycle basis.

To achieve the defined targets, the Secretary of Energy must establish a national energy efficiency building code within one year of the deadline set for each target, with the exception that the code to meet the initial 30% reduction target must be established within fifteen months after enactment of the bill. Within one year after the Secretary has established or revised the national code, each State must certify to the Secretary either that it has adopted the national code, it has updated its own building code to meet or exceed the national target, or the local governments representing at least 80% of the State's urban population have adopted the national code or adopted local codes to meet or exceed the national target. If any State fails to make the required certification within 18 months after the national energy code is established or modified, the national code becomes the applicable energy efficiency building code.

A State demonstrates compliance with the national code when an inspection shows that at least 90% of new and substantially renovated building space in that State in the preceding year meets the requirements of the code. States must certify compliance within two years after the date they certified adoption of a compliant energy code. The Secretary of Energy must accept the certification or identify areas of deficiency within 90 days after the State's certification. Compliant States and local governments are eligible for additional federal funding and emission allowances that may be used to cover costs of the development, adoption, implementation, and enforcement of the State or local energy efficiency building code.

Schedule of Required Activities								
	Energy Efficiency Target Relative to Baseline Code		National Energy Efficiency Building Code to Meet Target		State Adoption of National Code		State Certification of Compliance	
	Residential	Commercial	Residential	Commercial	Residential	Commercial	Residential	Commercial
30% Reduction	Enactment	Enactment	15 Mo. After Enactment	15 Mo. After Enactment	2 Years After Established	2 Years After Established	2 Years After Adoption	2 Years After Adoption
50% Reduction	1/1/2014	1/1/2015	1/1/2015	1/1/2016	1/1/2017	1/1/2018	1/1/2019	1/1/2020
55% Reduction	1/1/2017	1/1/2018	1/1/2018	1/1/2019	1/1/2020	1/1/2021	1/1/2022	1/1/2023
60% Reduction	1/1/2020	1/1/2021	1/1/2021	1/1/2022	1/1/2023	1/1/2024	1/1/2025	1/1/2026
65% Reduction	1/1/2023	1/1/2024	1/1/2024	1/1/2025	1/1/2026	1/1/2027	1/1/2028	1/1/2029
70% Reduction	1/1/2026	1/1/2027	1/1/2027	1/1/2028	1/1/2029	1/1/2031	1/1/2031	1/1/2033
75% Reduction	1/1/2029	1/1/2030	1/1/2030	1/1/2031	1/1/2032	1/1/2033	1/1/2034	1/1/2035

Retrofit for Energy and Environmental Performance (REEP) Program.

The stated purpose of the REEP program is to facilitate the retrofitting of existing buildings to achieve maximum cost-effective energy efficiency improvements and significant improvements in water use and other attributes. To accomplish this goal, Section 202 of ACES directs the EPA Administrator to consult with the Secretary of Energy to develop and implement standards for a national

energy and environmental building retrofit policy for single-family and multifamily residences. With additional advice from the Director of Commercial High-Performance Green Buildings, the EPA Administrator must develop and implement standards for an equivalent policy for non-residential buildings. The REEP program must include a number of elements, including a certification system for auditors, inspectors, raters, and retrofit contractors; materials to describe building and retrofit processes; specific roofing requirements to reduce energy consumption and the heat island effect of the building; requirements for post-retrofit inspection and determination of energy savings; and a process for tracking the numbers and locations of retrofitted buildings, with information on projected and actual energy savings over time.

States will maintain responsibility for meeting the requirements of the REEP program, however, each State may delegate its responsibility to local governments. Upon meeting certain standards, emission allowances may be allocated to the State, which funds may be used to make direct expenditures for retrofit improvements or to provide indirect or other forms of financial support not to exceed 50% of the cost to retrofit each building.

#### Building Energy Performance Labeling Program.

Section 204 of ACES directs the EPA Administrator to establish a building energy performance labeling program for all construction beginning after the date of enactment of the bill. The labeling program is intended to have broad applicability to both residential and commercial markets to enable and encourage knowledge about a building's energy performance and to inform efforts to reduce energy consumption. ACES requires the development of complete and robust data on the actual energy performance of at least 90% of all major commercial building types and the residential market. The EPA Administrator must propose a model label within one year of bill enactment and, after notice and comment, publish a final rule containing the label applicable to covered building types. States must seek to ensure that labeled information is made accessible to the public in a manner that makes it useful to owners, lenders, tenants, occupants, and other relevant parties. However, no State may require the labeling of a building to occur after a contract for sale has been executed and before the sale is completed.

#### Transportation Emissions.

Section 841 of ACES requires the EPA Administrator to propose within 12 months and finalize within 18 months, regulations to implement greenhouse gas emission reductions through transportation efficiency, which will influence land use planning, particularly in large metropolitan areas. Within one year after the promulgation of regulations, each State and metropolitan planning organization established for areas with populations of more than 50,000 individuals must develop surface transportation-related greenhouse gas emission reduction targets and strategies to meet those targets as part of their transportation planning process. In addition, the transportation improvement plans must consider projects and strategies that will reduce surface transportation-related greenhouse gas emissions and reliance on oil, as well as adaptation to the effects of climate change.

#### Low Income Community Energy Efficiency Program.

Section 264 of ACES authorizes the Secretary of Energy to make grants to private, nonprofit, mission-driven community development organizations for projects that improve energy efficiency or increase energy conservation in low income rural and urban communities. The bill authorizes \$50,000,000 for each fiscal year 2010 through 2015.

#### Green Resources for Energy Efficient Neighborhoods.

Section 284 of ACES authorizes the Secretary of Housing and Urban Development (HUD) to require compliance with basic HUD energy efficiency standards, enhanced energy efficiency, and conservation standards and green building standards, or both, for any HUD-assisted residential structures or nonresidential structures appurtenant to single-family or multifamily residential structures.

The basic HUD standard requires compliance with: 1) any energy efficiency building code established by Section 201 of ACES (described above), 2) American Society of Heating, Refrigerating, and Air-Conditioning Engineers Standard 90.1-2007, 3) applicable provisions of the 2009 International Energy Conservation Codes, 4) 20% reduction in energy consumption by a structure rehabilitated or improved, or 5) such other standards promulgated by the HUD Secretary. In addition, the basic HUD standard requires that the structure have appropriate electrical outlets able to recharge a standard electric passenger vehicle where the driver would normally park the vehicle.

The enhanced energy efficiency standard would offer additional credit under certain federally assisted housing programs. It requires greater energy efficiency and conservation, as well as green and sustainable building standards. New residential construction must meet the EPA's Energy Star standards and energy consumption must be reduced in existing structures in amounts in excess of those required under the basic HUD standard. In addition, residential structures must meet the national Green Communities criteria checklist for residential construction, the gold certification level under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) for any of its New Construction, Homes, or Core and Shell rating systems, the Green Globes assessment and rating system of the Green Building Initiative, the National Green Building Standard, or any other requirements established by the HUD Secretary.

During the 4-year period beginning 12 months after enactment, Section 285 of ACES requires that the HUD Secretary implement a program to demonstrate the effectiveness of funding portions of the costs of meeting the enhanced energy efficiency standards. The demonstration program must involve at least 50,000 dwelling units. Within 6 months after the program ends, the HUD Secretary must submit to Congress a report assessing the demonstration program.

Within 180 days after enactment, Section 283 of ACES requires the HUD Secretary to issue regulations to establish incentives encouraging participation in programs intended to achieve substantial improvements in energy efficiency. The HUD Secretary must also establish mortgage incentives for increasing the energy efficiency of single-family and multifamily housing.

#### Solar Energy Systems.

Before the HUD Secretary may make grants to metropolitan cities, urban counties, or Indian tribes for community development activities, Section 208 of ACES requires certification that the grant recipient has limited the cost of permits and licenses for the construction or installation of solar energy systems. Section 209 of ACES requires the HUD Secretary to issue regulations within 180 days of the bill's enactment that prohibit restrictions on the installation, construction, maintenance, or use of a solar energy system on single family housing.

#### Outdoor Lighting Efficiency Standards.

Section 211 of ACES amends the Energy Policy and Conservation Act to define efficiency standards for outdoor luminaries. Outdoor luminaries manufactured after January 1, 2016, must produce at least 50 lumen per watt, be designed to use a light source with lumen maintenance, calculated as mean rated lumens divided by initial lumens, of at least 0.6, and have the capability of producing at least two different light levels. By January 1, 2018, outdoor luminaries must produce at least 70 lumen per watt.

#### Building Assessment Centers.

Section 173 of ACES authorizes appropriation of \$50,000,000 for fiscal year 2010 and each fiscal year thereafter to fund institutions of higher education for Building Assessment Centers to improve and promote energy efficiency and environmental performance of existing buildings and new construction through research, development, and training.

#### Clean Technology Business Competition Grant Program.

Section 196 of ACES authorizes an appropriation of \$20,000,000 for the Secretary of Energy to provide grants to organizations that sponsor business competitions providing incentives, training, and mentorship to entrepreneurs to meet high priority economic, environmental, and energy security goals in areas including green building, water conservation, and waste management, among other things.

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