

# Senate Comprehensive Energy Bill

## S. 1460 – the Energy and Natural Resources Act

On Thursday, June 29<sup>th</sup> Sens. Lisa Murkowski (R-Alaska) and Maria Cantwell (D-Wash.), the Chair and Ranking Member, respectively, of the Senate Energy and Natural Resources Committee, introduced [S. 1460, the Energy and Natural Resources Act](#). The bill is broken into two major sections – Energy and Natural Resources – and the Energy section is further broken down into several titles: Efficiency, Infrastructure, Supply, and Accountability. Building upon efforts from the 114<sup>th</sup> Congress, this bill encapsulates many of the provisions, with several significant changes particularly to the building energy codes section, of S. 2012, the Energy Policy Modernization Act, which passed the Senate with overwhelming bipartisan support in an 85-12 vote.

### Title I – Energy Efficiency

The following provisions were included under the Efficiency title of the Energy and Natural Resources Act of 2017.

### Subtitle A - Buildings

#### **Section 1101 – Greater energy efficiency in building codes**

Based on language from S. 385, the Energy Savings and Industrial Competitiveness Act, introduced by Sens. Rob Portman (R-Ohio) and Jeanne Shaheen (D-N.H.). Amends Section 304 of ECPA to clarify that established or updated voluntary energy codes under the provisions of this bill are not binding as a matter of federal law. It also requires that the Secretary of Energy encourage and support the adoption of building energy codes by states, local governments, or Indian tribes that meet or exceed voluntary building energy codes. The provision also improves compliance measures with building codes by establishing a better certification process and establishing a concrete standard for full compliance achievement. It does not include language to support the development of stretch codes and advanced standards. Amends Section 307 of ECPA to require that the Secretary of Energy support the updating of voluntary building energy codes. The amended language requires the Secretary to account for the modernizing energy infrastructure in buildings such as efficiency gains enabled by appliance standards, renewables, or SmartGrid technologies when developing code targets. These targets must be “consensus-based” and must be at a level that is technologically feasible and economically justified, not life-cycle cost-effective. It also includes a definition of economically justified, specifically what factors must be considered by the Secretary of Energy during the analysis of a proposed or updated voluntary building energy code.

#### **Section 1102 – Budget-neutral demonstration program for energy and water conservation improvements at multi-family residential units**

Directs the Secretary of Housing and Urban Development to conduct a pilot project that demonstrates the use of budget-neutral, performance-based agreements for energy or water conservation improvements in residential units of multifamily buildings. Each program agreement will include a pay-for-success provision

contingent on documented utility savings and will strive for the greatest feasible geographic diversity to include all types of regional environments.

### **Section 1103 – Coordination of energy retrofitting assistance for schools**

Directs the Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) to coordinate and disseminate information on existing Federal programs that may be used to help initiate, develop, and finance energy efficiency, renewable energy, and energy retrofitting projects for schools. It also establishes collaboration across federal departments and between local, state, and federal bodies to streamline communication about the resources and technical assistance available for energy efficiency, renewable energy, and retrofitting projects.

### **Section 1104 – Energy efficiency materials pilot program**

Directs the Secretary of Energy to establish a pilot program to award grants for the purpose of retrofitting nonprofit buildings with energy-efficiency improvements. Grants will be awarded on performance-based criteria such as energy savings achieved and cost effectiveness of the improvement. Each individual grant cannot exceed \$200,000.

### **Section 1105 – Utility energy service contracts**

Amends Section 546 of the National Energy Conservation Policy Act (NECPA) to extend the maximum potential contract period of utility energy service contracts from 10 to 25 years. The Secretary of Energy is also required to make available on a public website the guidance and criteria regarding the conditions of utility energy service contracts.

### **Section 1106 – Use of energy and water efficiency measures in Federal buildings**

Amends contracting authority and reporting in NECPA to encourage federal agencies to enter into energy savings performance contracts and utility energy service contracts to implement energy and water conservation measures at federal buildings. The provision allows federal agencies to sell or transfer energy savings and apply the proceeds of such transactions to fund a contract. Also specifies that the term 'federal building' does not include a dam, reservoir, or hydropower facility owned or operated by a federal agency.

### **Section 1107 – Building training and assessment centers**

Directs the Secretary of Energy to provide grants to institutions of higher education and minority-serving institutions to establish building training and assessment centers. The centers will identify opportunities for optimizing energy efficiency and associated environmental, health and safety, and productivity performance in buildings; promote the application of emerging technologies; train engineers, architects, building scientists, and other officials in energy-efficient design and operation; assist universities in training building technicians; and promote research and development for the use of alternative energy sources and distributed generation in campus buildings.

### Section 1108 – Career skills training

Directs the Secretary of Energy to provide grants to eligible non-profit entities for up to half the cost of career skills training programs that lead to students receiving industry-related certification to install energy efficient building technologies.

### Section 1109 – Energy-efficient and energy-saving information technologies

Amends Section 530 of EISA by adding a section that directs the director of the Office of Management and Budget (OMB) to collaborate with each federal agency to develop an implementation strategy for the maintenance, purchase, and use of energy-efficient and energy-saving information technologies. The implementation strategy includes the determination of performance goals and the recommendation of best practices to achieve them, including the consideration, to the extent applicable by law, of the use of energy savings performance contracts and utility energy service contracts. Each agency would be required to complete annual reports that includes a description of the efforts taken and the related results. The director of OMB shall also include in the annual report a scorecard on each agency's progress.

### Section 1110 – Energy efficient data centers

Amends Section 453 of the Energy Independence and Security Act (EISA) of 2007 to update the Voluntary National Information Program. Requires the development of a metric for data center energy efficiency, and the Secretary of Energy and director of OMB to maintain a data center energy practitioner program and open data initiative for Federal data center energy usage. The open data initiative will aim to make data accessible in a way that encourages data center innovation, optimization, and consolidation. Additionally, the Secretary of Energy is required to make efforts to harmonize global specifications and metrics for data center energy and water efficiency with the help of key stakeholders. A report must also be submitted by the Secretary, within four years, in which analyses and evaluations are conducted concerning the impact of information technologies and cloud computing on the public and private sectors and the impact of cloud platforms, mobile devices, social media, and data analytics on data center energy usage.

### Section 1111 – Weatherization Assistance Program

Amends Section 422 of ECPA to reauthorize the Weatherization Assistance Program. Amends Section 414 of ECPA to require the Secretary of Energy to provide competitive grants for eligible multi-state housing and energy nonprofit organizations with accredited contractors to conduct housing energy retrofits for low-income persons. The provision not only aims to expand the number of low-income, single-family and multi-family homes that receive energy retrofits, but it also seeks to promote innovation and new models for retrofitting low-income homes.

### Section 1112 – Reauthorization of State Energy Program

Amends Section 365(f) of Energy Policy Conservation Act (EPCA) to reauthorize the State Energy Program, which is run by the Department of Energy and provides funding and technical assistance to state and territory energy offices to help them advance their clean energy economy while contributing to national energy goals.

### Section 1113 – Smart building acceleration

Directs the Secretary of Energy to establish the ‘Federal Smart Building Program’ to demonstrate the costs and benefits of implementing smart building technology. The program evaluates which advanced building technologies are the most cost-effective, show the most promise for increasing building energy savings, increase service performance to building occupants, reduce environmental impacts, and establish cybersecurity. The program would involve the selection of at least one building from key federal agencies like the Department of the Army, Department of the Navy, Department of the Air Force, Department of Energy, and Department of Veterans Affairs, among others, to be included in the program. The provision also directs the Secretary, along with major private sector property owners, to develop smart building accelerators to demonstrate innovative policies for accelerating the transition to smart buildings as part of the Better Building Challenge.

### Section 1114 – Repeal of fossil phase-out

Amends Section 305(a)(3) of ECPA to remove the requirement to phase out fossil fuel use in Federal buildings by 2030.

### Section 1115 – Federal building energy efficiency performance standards

Amends Section 303 of ECPA to include major renovations. Amends Section 305(a)(3) of ECPA to require the Secretary of Energy to establish revised Federal building energy efficiency performance standards. Revised standards require that new Federal buildings or alterations to Federal buildings meet or exceed the most recent versions of the IECC or ASHRAE standards or the local/state standards if more stringent. Along with implementing other sustainable design technologies, water conservation technologies will also be applied and no less than 30 percent of the hot water demand for each new Federal building or renovated building shall be met through the installation of solar hot water heaters, if life cycle cost effective.

### Section 1116 – Federal building energy intensity improvement

Directs the head of each Federal agency to reduce their building energy intensity by 2.5 percent per year for fiscal years 2018 through 2027.

### Section 1117 – Certification for green buildings

Amends Section 305 of ECPA to direct the Secretary of Energy to determine which certification systems for green commercial and residential buildings are the most likely to encourage a comprehensive and environmentally sound approach to the certification of green buildings. In the construction of green buildings, the use of sustainably sourced materials should be recognized. The Secretary of Energy is also required to conduct periodic review of federal building energy standards every five years to ensure that energy efficiency technologies are kept reasonably updated.

### **Section 1118 – High-performance green federal buildings**

Amends Section 436(h) of EISA 2007 to require the Federal Director to identify and provide to the Secretary of Energy a list of certification systems most likely to encourage a comprehensive and environmentally sound approach to certification of green buildings. Any developer or administrator of a rating or certification system can be included in the review. The provision also adds that for all credits addressing grown, harvested, or mined materials, the system rewards the use of products that have obtained certifications of responsible sourcing.

### **Section 1119 – Evaluation of potentially duplicative green building programs**

To require the evaluation of potentially duplicative green building programs within the Department of Energy. This would require the submittal of a report to Congress which outlines the purpose, annual expenditures, intended market and number of assigned employees for applicable programs and services. DOE is also required to submit a report that includes any recommendations for programs or services that should be eliminated or consolidated.

### **Section 1120 – Study and report of energy savings benefits of operational efficiency programs and services**

To require the Secretary of Energy to conduct a study and issue a report that quantifies the energy savings benefits of operational efficiency programs and services for commercial, institutional, industrial, and government entities. The report is required to include potential methodologies or protocols for utilities, utility regulators and Federal agencies to evaluate, measure and verify energy savings from operational efficiency programs and services.

### **Section 1121 – Use of Federal disaster relief and emergency assistance for energy-efficient products and structures**

Amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act to allow a recipient of assistance relating to a major disaster or emergency to use the assistance to replace or repair a damaged product or structure with an energy-efficient product or energy-efficient structure. The section also outlines the requirements that must be met to use assistance funds in this manner.

### **Section 1122 - WaterSense**

Amends the Energy Policy and Conservation Act to create the WaterSense program. This would be a voluntary program within the Environmental Protection Agency that is meant to identify and promote water-efficient products, buildings, landscapes, facilities, processes and services. These entities will sensibly reduce water use, reduce the strain on public water systems and wastewater systems, conserve energy, and preserve water resources for future generations. It also identifies the types of categories that will be included for consideration under this program. The section would also create a WaterSense label to identify water-efficient entities and enhance public awareness of the WaterSense label through outreach and education. There are further stipulations regarding the preservation of the integrity of the WaterSense



label and transparency on the impact of WaterSense labeled products, buildings, landscapes, facilities, processes and services.

## **Subtitle B - Appliances**

### **Section 1201 – Extended product system rebate program**

Directs the Secretary of Energy to establish a rebate program to encourage the replacement of energy inefficient electric motors with qualified extended product systems, or product systems that include an electric motor, an electronic control, and technology that reduces the input energy required to operate the system by no less than 5 percent.

### **Section 1202 – Energy efficient transformer rebate program**

Directs the Secretary of Energy to establish a rebate program to encourage the replacement of energy inefficient transformers with transformers that meet or exceed the applicable energy conservation standards listed in the respective Code of Federal Regulations.

### **Section 1203 – Third-party certification under Energy Star program**

Amends Section 324A of EPCA by directing the Administrator to revise the certification requirements for the labeling of consumer, home and office electronic products for Energy Star program partners that have complied with all program requirements for at least 18 months. An exemption from third-party certification will terminate if the program partner is found to have violated program requirements with at least two separate models for two years or more.

### **Section 1204 – Application of energy conservation standards to certain external power supplies**

This section would update the definition of an external power supply from the Energy Policy and Conservation Act to exclude a power supply circuit, driver or device that is designed exclusively to power LEDs and OLEDs.

### **Section 1205 – Clarification to effective date for regional standards**

If a regional standard is established that is more restrictive than a Federal standard for a product, that standard will not apply to any product that was manufactured before the effective date of the regional standard or a product that was installed not later than 1 year after the effective date of the regional standard.

### **Section 1206 – Modifying product definitions**

Amends Sections 322 and 341 of the Energy Policy and Conservation Act to allow the Department of Energy, unless prohibited by rule, to modify the definition of a product in order to address significant changes in the product or the market since the definition was established or better enable improvements

in the energy efficiency of the product or related systems. In the event that a definition is modified under this section, the anti-backsliding requirements outlined in Section 325(o)(1) shall no longer apply to the product. If a definition is going to be modified, a notice of any adjustment must be published in the Federal Register to allow for public comment. At the same time, any potential adjustment must be the result of consensus negotiation.

## **Section 1207 – Clarifying rulemaking procedures**

Amends Section 325(p) of EPCA to add provisions that would require the Department of Energy to provide an opportunity for public input prior to the issuance of a proposed rule, seeking information concerning the analysis the Department of Energy may undertake to develop a proposed rule. It further states that any proposed rule to establish new or amended energy conservation standards shall be based on the final test procedure that will be used to determine compliance. Exceptions to these requirements apply to rules or test procedure rules that were developed as a negotiated rule. This section does not limit the authority of the Department of Energy to amend test procedures and use those modified test procedures for compliance with an existing or revised standard. Furthermore, it does not alter the deadline for the completion of any required action.

## **Section 1208 – Extension of nonapplication of no-load mode energy efficiency standard to certain security or life safety alarm or surveillance systems**

Extends an exemption of the nonapplication of no-load mode energy efficiency standards to certain security or life safety alarm or surveillance systems. It would also give the Department of Energy the ability to create a separate product class for these products.

## **Subtitle C - Manufacturing**

### **Section 1301 – Manufacturing energy efficiency**

Amends Section 452 of EISA 2007 to add the 'Future of Industry Program' and 'Sustainable Manufacturing Initiative.' These programs will streamline federal manufacturing efforts by directing Industrial Assessment Centers to coordinate with other federal manufacturing programs, National Laboratories, and energy service and technology providers, and directing DOE's Office of EERE to provide onsite technical assessments to manufacturers seeking efficiency opportunities. Through these programs the Department of Energy aims to reform its industrial efficiency programs, accelerate the deployment of technologies and practices that will increase industrial productivity, increase manufacturing efficiency, stimulate domestic economic growth, and strengthen partnerships between federal and state government agencies and the private and academic sectors.

### **Section 1302 – Leveraging existing Federal agency programs to assist small and medium manufacturers**

Directs the Secretary of Energy to expand the scope of technologies covered by the Industrial Assessment Centers of the Department to include smart manufacturing technologies and practices and equip the Centers' directors with the tools and training to provide technical assistance in smart manufacturing to

manufacturers, including energy efficiency improvements, waste minimization, pollution prevention, and productivity improvement.

### **Section 1303 – Leveraging smart manufacturing infrastructure at National Laboratories**

Directs the Secretary of Energy to study and then implement ways for small and medium manufacturers to access the high-performance computing facilities at National Laboratories.

## **Subtitle D - Vehicles**

### **Section 1401 - Objectives**

Outlines the objectives of the subtitle to be: establish a consolidated authority for the vehicle technology program at DOE; develop U.S. technologies that improve fuel efficiency, reduce emissions and reduce vehicle reliance on petroleum-based fuels; support domestic research and development of advanced vehicles, engines, and components; enable vehicles to move larger volumes of goods and more passengers with less energy and emissions; develop cost-effective advanced technologies for wide-scale utilization; allow for greater consumer choice of vehicle technologies and fuels; shorten technology development and integration cycles in the vehicle industry; ensure proper diversity and balance of federal investment in vehicle technologies; strengthen partnerships between federal and state governmental agencies and the private and academic sectors.

### **Section 1402 – Coordination and non-duplication**

The Secretary shall ensure, to the maximum extent practicable, that the activities included within this subtitle do not duplicate existing programs within DOE or other agencies and departments.

### **Section 1403 – Authorization of appropriations**

Authorizes the following amounts to carry out the objectives of this subtitle:

For FY 2018: \$313,567,000  
For FY 2019: \$326,109,000  
For FY 2020: \$339,154,000  
For FY 2021: \$352,720,000  
For FY 2022: \$366,829,000

### **Section 1404 - Reporting**

Requires DOE to submit to Congress two reports. The first, which must be submitted with 18 months of the enactment of this bill and annually thereafter, must include details on the technologies developed under the activities of this subtitle, which ones were successfully adopted for commercial applications and if any products relying on those technologies are being manufactured within the U.S. The second report, which must be submitted at the end of each fiscal year, must include a description of the activities undertaken in



the previous year, active industry participants, the statuses of public-private partnerships, progress of the program in meeting goals and timelines, and a strategic plan for funding of activities across agencies.

## Part I – Vehicle Research and Development

### Section 1411 - Program

Authorizes a program of basic and applied research, development, engineering, demonstration and commercial application activities for materials, technologies, and processes that could reduce petroleum use in passenger and commercial vehicles. Identified areas of interest include electrification of vehicle systems, batteries, waste heat recovery, hydrogen vehicle technologies, aerodynamics, and use of recycled materials, among many others.

### Section 1412 - Manufacturing

DOE is directed to carry out a research, development, engineering, demonstration, and commercial application program of advanced vehicle manufacturing technologies and practices. These innovative processes include areas such as increasing production rate and decreasing cost of batteries and fuel cells, reducing waste streams and energy intensity of manufacturing processes, improving the recyclability of batteries, and improve calendar life and cycle life of advanced batteries, among others.

## Part II – Medium- and Heavy-duty Commercial and Transit Vehicles

### Section 1421 - Program

DOE, in partnership with relevant research and development programs in other federal agencies and a range of appropriate industry stakeholders shall carry out a program of cooperative research, development, demonstration and commercial application activities on advanced technologies for medium- to heavy-duty commercial, vocational, recreational and transit vehicles. Areas include: energy efficiency, onboard storage technologies for compressed or liquid natural gas, waste heat recovery and conversion, friction and wear reduction, recharging infrastructure, advanced materials, hydrogen vehicle technologies, and drivetrain optimization, among others.

### Section 1422 – Class 8 truck and trailer systems demonstration

DOE shall conduct a competitive grant program to demonstrate the integration of multiple advanced technologies on Class 8 truck and trailer platforms, including a combination of technologies listed in the previous section. The section also describes who can participate in the grant program.

### Section 1423 – Technology testing and metrics

DOE shall develop standard testing procedures and technologies for evaluation the performance of advanced heavy vehicle technologies and shall evaluate heavy vehicle performance using work performance-based metrics other than those based on miles per gallon. Allows for DOE to construct heavy duty truck and bus testing facilities.

## Section 1424 – Non-road systems pilot program

DOE shall undertake a pilot program of research, development, demonstration, and commercial applications of technologies to improve total machine or system efficiency for non-road mobile equipment including agricultural, construction, air, and seaport equipment.

### Part III - Administration

## Section 1431 – Repeal of existing authorities

Repeals Sections 706, 711, 712 and 933 of the Energy Policy Act of 2005. Also, amends Section 911 of that bill.

### Subtitle E – Housing

## Section 1501 – Definitions

Defines the following terms for the purpose of this subtitle: covered loan, homeowner and mortgagee.

## Section 1502 – Enhanced energy efficiency underwriting criteria

Directs the Secretary of Housing and Urban Development (HUD) to develop and issue guidelines for the Federal Housing Administration (FHA) to implement enhanced loan eligibility requirements, for use when testing the ability of a loan applicant to repay a covered loan, that account for the expected energy cost savings for a loan applicant at a subject property. The section goes on to further outline using energy cost savings as an offset, the types of energy costs to be considered, the completion of an energy efficiency report and the pricing of loans. It also identified prohibited actions. The enhanced loan eligibility requirements required under this section must be implemented by FHA within 3 years of enactment (and before December 31, 2019).

## Section 1503 – Enhanced energy efficiency underwriting valuation guidelines

The Secretary of HUD, in consultation with several identified groups, shall issue guidelines for the FHA to determine the maximum permitted loan amount based on the value of the property for all covered loans made on properties with an energy efficiency report that meets the requirements of the previous section. It also outlines that energy savings will be calculated by finding the difference in estimated energy costs between the property in question and the average energy costs of comparable properties. The section also addresses issues of duration, present value and the consideration of energy efficient features. Also included is the authority to impose limitations and conditions to protect against the under/overvaluation of energy cost savings or duplicative counting of energy efficient features. The guidelines required under this section must be implemented by FHA within 3 years of enactment (and before December 31, 2019).

## Section 1504 – Monitoring

Not later than one year after the enhanced underwriting valuation requirements of this subtitle are implemented, FHA is required to make available, on an annual basis, a public report including the number

of covered loans of the FHA for which there was an energy efficiency report used in the appraisal process, the default rates and rates of foreclosure, and the risk premium, if any, FHA has priced into the covered loans.

## Section 1505 - Rulemaking

This section states that HUD is not authorized to require any homeowner or other party to provide energy efficiency reports, energy efficiency labels or other disclosures to FHA or to a mortgagee. It also outlines the creation of an advisory group, made up of individuals representing the interests of: mortgage lenders, appraisers, energy raters, energy efficiency organizations, real estate agents, home builders, consumer advocates, state energy officials and any others determined by HUD. The purpose of this advisory group is to assist HUD in the development and implementation of the provisions outlined in this subtitle.

## Section 1506 – Additional study

Not later than 18 months after the enactment of this Act, HUD shall reconvene the advisory group to advise HUD on the implementation of these underwriting criteria. The advisory group shall provide recommendations on any revisions or additions. HUD will forward any legislative recommendations from the advisory group to Congress.

## Title IV – Accountability

### Subtitle B – Energy-Water Nexus

#### Section 4101 – Nexus of energy and water for sustainability

Directs DOE and the Department of the Interior (DOI) to establish an Interagency Coordination Committee to identify all relevant energy-water nexus activities across the federal government; enhance the coordination of research and development activities among agencies; gather and disseminate data to enable better practices; explore relevant public-private collaboration; issue a report on the feasibility of establishing an energy-water center of excellence at the National Laboratories, and develop a research and development plan for energy-water nexus related programs. It also directs DOE and DOI to establish the Nexus of Energy and Water Sustainability (NEWS) office to provide leadership and administrative support functions for the Interagency Coordination Committee.

#### Section 4102: Smart energy and water efficiency pilot program

Amends title IX of EPACT 2005 to establish a Smart Energy and Water Efficiency Pilot Program at DOE to provide grants to eligible utilities, municipalities, water districts as well as Indian tribes and Alaska Native villages. Will award grants who demonstrate solutions that will increase energy efficiency of water, wastewater and reuse systems and establish advanced systems to provide real-time consumption data, among others.

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