

Water Use Efficiency Legislation in the 114th Congress

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Summary

More than two dozen legislative proposals in the 114th Congress were introduced that included provisions concerning water use efficiency, or water conservation, in nonagricultural sectors. These legislative proposals did not seek to set specific enforceable water use efficiency standards or goals. Rather, most sought to encourage or provide incentives for adoption of practices, technologies, and measures to achieve improved water use efficiency.

The 114th Congress legislation can be broadly grouped in five categories of proposals.

- **Codifying the WaterSense program.** WaterSense is a voluntary labeling and recognition program that seeks to help consumers and businesses identify highly water-efficient products, services, and homes. It was established administratively by the Environmental Protection Agency in 2006. Nine legislative measures included provisions to establish the program in law.
- **Research and development.** Several bills focused on research and development aspects of water use efficiency, including proposals that addressed needs for more and better water use data. Research also is examining technology advances in water and wastewater treatment facilities that would achieve water and energy savings.
- **Water use efficiency in buildings.** Buildings are estimated to account for about 13% of total water consumed in the United States; one-quarter of that total is used by commercial buildings, and three-quarters by residences. It is sometimes argued that the federal government should lead by example. Thus, several bills in the 114th Congress addressed aspects of water use efficiency in federal buildings.
- **Financial and technical assistance.** The largest number of bills in the 114th Congress proposed to provide technical and financial assistance for identifying, adopting, or demonstrating practices or measures that conserve water. A number of the bills proposed to assist owners and operators of public water systems and water utilities in adopting or installing water-efficient systems, while a few proposed to help provide incentives for consumers to purchase and install water-efficient products or services.
- **Federal tax incentives.** Several bills proposed to use the federal tax code to provide incentives for adopting or installing equipment or practices to save water, such as a federal tax credit for purchasing qualified equipment or federal tax exemption of rebates or other financial incentives received for installing water conservation measures.

Some of the policy approaches described in this report were included in bills that addressed multiple aspects of water use efficiency alone, such as WaterSense and financial assistance. In other proposals, water use efficiency was one of a number of issues, but not the main issue, contained in a comprehensive policy proposal on topics such as energy policy, water policy generally, or solutions to the western U.S. drought. A few of the bills discussed here passed the Senate or House during the 114th Congress, and one measure that addressed water use efficiency in part (i.e., water use in buildings) was enacted. Many of these proposals also were introduced in previous Congresses.

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More than two dozen legislative proposals in the 114th Congress included provisions concerning water use efficiency, or water conservation. These legislative proposals did not seek to set specific enforceable water use efficiency standards or goals. Rather, most sought to encourage or provide incentives for practices, technologies, and measures to achieve improved water use efficiency.

Some of the proposals were standalone bills that solely addressed water use efficiency and conservation. Some were components of bills that addressed western U.S. drought; critical water resource conditions in western states have contributed to national policy proposals that include water use efficiency. Some of the water use efficiency proposals were included in comprehensive energy policy bills. That is, water efficiency and energy efficiency were linked in some legislation, although water use efficiency was generally the secondary policy consideration in such bills. Many of the water use efficiency proposals also had been introduced in previous Congresses, but did not advance.

The 114th Congress legislation can be broadly grouped in five categories of proposals, which are described in this report.¹

- Codifying the WaterSense program,
- Research and development,
- Water use efficiency in buildings, especially federal buildings,
- Financial and technical assistance, and
- Tax incentives.

A few bills passed the Senate or House, and one measure that addressed water use efficiency in part (i.e., water use in buildings) was enacted.

Codifying the WaterSense Program

WaterSense is a voluntary labeling and recognition program created by the Environmental Protection Agency (EPA) in 2006 as a companion to Energy Star, which is a similar program administered by EPA and the Department of Energy (DOE). Energy Star is authorized in law (Energy Policy Act of 2005, P.L. 109-58, 42 U.S.C. §6294a), while WaterSense is not. Both programs involve partnerships between government, manufacturers, and others that seek to help consumers and businesses easily identify highly efficient products, homes, and buildings, with Energy Star focusing on energy efficiency and WaterSense focusing on water efficiency. While the latter program's central focus is on reducing water use, EPA recognizes that water efficiency also results in energy savings.²

The program's overall goal is to identify and certify through labeling products that are at least 20% more efficient than standard products available in the market. Through WaterSense, EPA has so far issued performance-based water-use specifications for seven product categories and has others under development. EPA also has issued a New Home Specification that incorporates

¹ Legislation or policy proposals concerning agricultural water use or water use efficiency and conservation by the agriculture sector are beyond the scope of this report.

² For discussion of the relationship between water use and energy, see CRS Report R43200, *Energy-Water Nexus: The Water Sector's Energy Use*, by (name redacted), and CRS Report R43199, *Energy-Water Nexus: The Energy Sector's Water Use*, by (name redacted). EPA estimates that to date, WaterSense has helped consumers save a cumulative 1.1 trillion gallons of water and over \$21.7 billion in water and energy savings. See https://www3.epa.gov/watersense/about_us/milestones.html.

existing criteria for indoor products and outdoor uses. Once a specification for a product category is established, in order to obtain a WaterSense label, manufacturers submit their products for testing by third-party laboratories or certifying bodies that have been licensed by EPA.³

Legislative proposals to formally establish the program in law have been introduced a number of times since the 111th Congress. One of the arguments in support of codifying the WaterSense program legislatively has been that, because the program is an EPA administrative initiative, it is difficult for EPA program managers and supporters to call on resources to expand its activities; establishing the program in law, especially with authorization of appropriations, would give the program status to address this problem, proponents say. The program is funded through regular appropriations to EPA that have been less than \$5 million annually, or less than 10% of amounts appropriated for the Energy Star program.⁴ A number of bills were introduced in the 114th Congress to codify in law a WaterSense program at EPA, direct the EPA Administrator to establish and maintain water-efficiency performance standards, promote the WaterSense label, review and update WaterSense specifications, and provide information to the public.

Bills to establish WaterSense in law included the following.

- S.Amdt. 3221, an amendment to S. 2012, the Energy Policy Modernization Act, was approved by the Senate on April 19, 2016. It would, among other provisions, direct EPA to review existing WaterSense specifications not more than six years after adoption and make revisions to achieve additional water savings.
- Language identical to the provision in S. 2012 was included in S. 2848, the Water Resources Development Act of 2016, which the Senate passed on September 15, 2016. Comprehensive water resources development legislation subsequently was passed by the House and Senate (S. 612), but it did not include the WaterSense provisions.
- Another comprehensive energy policy bill introduced in the Senate, S. 2089, the American Energy Innovation Act, included a provision to codify WaterSense. It proposed to authorize appropriations of \$5 million annually for four years, to be adjusted for inflation in subsequent fiscal years.
- S. 176, the Water in the 21st Century Act, proposed to codify the WaterSense program at EPA and authorize a total of \$50 million in appropriations over four years, beginning at \$5 million and increasing to \$20 million in the fourth year. Similar House legislation was H.R. 291.
- Three bills that expressly addressed the western U.S. drought, S. 1894 and S. 2533/H.R. 5247, proposed to similarly codify the program. These bills proposed to authorize appropriations of \$5 million annually for five years.
- H.R. 8, the North American Energy Security and Infrastructure Act, a comprehensive energy policy bill passed by the House in December 2015, included a provision to codify the WaterSense program; however, this bill did not authorize appropriations to implement the program.
- H.R. 3720, the Water Advanced Technologies for Efficient Resource Use Act, likewise proposed to establish the program in law. It proposed to authorize a total of \$87.5 million in appropriations, beginning at \$7.5 million and increasing to

³ See <http://www.epa.gov/watersense> for general information.

⁴ U.S. Government Accountability Office, *Energy Star: Providing Additional Opportunities for Additional Review of EPA's Decisions Could Strengthen the Program*, GAO-11-888, September 2011, p. 9.

\$50 million in the fourth year, to be adjusted for inflation in subsequent fiscal years.

Research and Development Proposals

Bills in the 114th Congress included varied approaches to research and development of technologies to achieve improved water use efficiency.

- S. 653, the Water Resources Research Amendments Act of 2015, proposed to reauthorize the Water Resources Research Act (P.L. 88-379, as amended) and provide grant funding to Water Resources Research Institutes in each state, territory, and the District of Columbia for applied water supply research through FY2020. This bill, which the Senate passed in June 2015, added research into alternative approaches to water use efficiency and energy efficiency of wastewater treatment works to the scope of the nation's water research agenda. Other bills with similar provisions included H.R. 291, S. 176, and S. 2848.
- Several bills concerned with the western U.S. drought included provisions directing the U.S. Geological Survey to establish a water data system to “advance the availability, timely distribution, and widespread use of water data and information for water management, education, research, assessment, and monitoring purposes.” Underlying these provisions is concern that there is need for more and better data on water use that would assist decisionmaking by government, water managers, communities, and the private sector. Bills with these “open water data system” provisions included H.R. 291, S. 176, S. 1837, and S. 1894.
- The purpose of S. 1485, the Water Efficiency Innovation Act, was “to provide for the advancement of energy-water efficiency research, development, and deployment activities.” To do so, it proposed to direct the Department of Energy to advance energy efficiency in water and wastewater treatment facilities, including systems that treat municipal, industrial, and agricultural waste.
- H.R. 4653 was a bill that broadly addressed financial and technical management of water systems that are subject to requirements of the Safe Drinking Water Act. Among its provisions, this bill proposed to direct EPA to develop criteria for effective water loss and leak control technology to be used by water systems. Leak detection has been referred to as an “under-appreciated” water conservation strategy.

Water Use Efficiency in Buildings

Buildings are estimated to account for approximately 13% of total water consumed in the United States per day. Of that total, 26% is estimated to be used by commercial building occupants, and 74% by homeowners.⁵ EPA's WaterSense program focuses primarily on water use efficiency of products used inside and outside residential buildings, but some of its specifications (e.g., for bathroom fixtures) also apply to products used in commercial buildings such as hotels, motels, restaurants, schools, and office buildings.

⁵ U.S. Environmental Protection Agency, *Buildings and their Impact on the Environment: A Statistical Summary*, April 22, 2009.

It is sometimes argued that, on matters of policy, the federal government should lead by example. In that regard several existing policy requirements direct federal agencies to use water-efficient products and services.

- Section 423 of the Energy Independence and Security Act of 2007 (P.L. 100-140, 42 U.S.C. §17083) directs the energy managers of federal buildings to conduct water and energy evaluations of their buildings and to implement energy and water efficiency measures identified through those audits.
- Executive Order 13423 (January 26, 2007) directed federal agencies to reduce water consumption intensity through life-cycle cost-effective measures by 2% annually, or 16% by the end of FY2015, and to acquire goods and services that are energy-efficient, water-efficient, and use recycled content.
- Executive Order 13693 (May 25, 2015) is the most recent Executive Order concerned with federal environmental, energy, and transportation management.⁶ In particular, it extends to FY2025 the schedule in E.O. 13423 requiring federal buildings to reduce water consumption intensity by 2% annually, or by 36% relative to a FY2007 baseline. It also broadens the mandate to include reducing agency potable water consumption intensity; reducing agency industrial, landscaping, and agricultural water consumption; installing water meters in federal buildings to improve water conservation and management; and installing green infrastructure features to help with stormwater and wastewater management. It directs that all new construction of federal buildings greater than 5,000 gross square feet be designed, where feasible, to be “water net-zero” by FY2030 (i.e., to return the equivalent amount of water as was withdrawn from all sources through practices such as recycle and reuse). Further, it directs agencies to give purchase preference to WaterSense-certified products and services and products designated under the Department of Energy’s Federal Energy Management Program (FEMP).⁷

Several bills in the 114th Congress addressed aspects of water use efficiency in federal buildings.

- H.R. 3720 proposed to build on E.O. 13693 to direct federal agencies to give purchase preference to WaterSense-certified products and services and FEMP-designated products.⁸
- S. 869, the All-of-the-Above Federal Building Energy Conservation Act, proposed to authorize DOE to establish energy performance requirements for

⁶ E.O. 13693 revoked and replaced E.O. 13514 (2009), which had extended until FY2020 the schedule in E.O. 13423 that federal buildings reduce water consumption intensity by 2% annually, or 26% total by the end of FY2020. These Executive Orders address a wide range of topics and sustainability practices of federal agencies, including but not limited to water use efficiency.

⁷ FEMP provides resources and tools to help agencies purchase energy- and water-efficient products. FEMP has issued acquisition guidance for 67 product categories; two of these address water efficiency and 65 address energy efficiency. FEMP’s designation of water-efficient products (for faucets, showerheads, toilets, and urinals; and pre-rinse spray valves) adopts and defers to EPA’s WaterSense specifications for the same products, to avoid duplication. FEMP has developed water efficiency best management practices (BMPs) to help agencies increase water efficiency.

⁸ Some say that it is unnecessary for Congress to codify elements of an Executive Order that is directed at government agencies, while others believe that codification provides certainty and greater permanence than do Executive Orders, which have the force and effect of law only if the presidential action is based on power vested in the President by the U.S. Constitution or delegated to the President by the Congress. For discussion, see CRS Report RS20846, *Executive Orders: Issuance, Modification, and Revocation*, by (name redacted) and (name redacted)

federal buildings that consider energy and water savings. It also proposed to require federal energy managers to perform energy and water evaluations and to implement energy and water savings measures. Similar provisions were included in S. 720/H.R. 2177, the Energy Savings and Industrial Competitiveness Act.

- H.R. 614, the Savings, Accountability, Value, and Efficiency (SAVE) Act, similarly proposed to direct federal building energy managers to adopt identified energy and water conservation savings.
- Two bills included provisions that addressed the energy and water savings potential of thermal insulation. The bills were H.R. 568, the Thermal Insulation Efficiency Improvement Act, and H.R. 8. They proposed to require DOE to report to Congress on the impact of thermal insulation on both energy and water use systems for potable hot and chilled water in federal buildings, and the return on investment of installing such insulation.

One enacted bill, S. 535, the Energy Efficiency Improvement Act of 2015 (P.L. 114-11) in part addresses energy and water use efficiency in commercial buildings. Among its provisions, the bill requires the General Services Administration (GSA) to develop and publish model leasing provisions to encourage building owners and tenants to use cost-effective energy efficiency and water efficiency measures in commercial buildings. It also requires GSA to develop policies and best practices to implement the measures for the realty services provided by the GSA to federal agencies and to make these policies and practices available to state, county, and municipal governments for their use in managing owned and leased buildings.⁹

Financial and Technical Assistance

The largest number of water use efficiency bills in the 114th Congress proposed to provide technical and financial assistance for adopting or demonstrating practices or measures that conserve water. A number of the bills proposed to assist owners and operators of public water systems and water utilities in adopting or installing water-efficient systems, while a few proposed to help provide incentives for consumers to purchase and install water-efficient products or services.

- Several bills (H.R. 8, S. 2012, S. 2089, S. 886, and H.R. 3143) included similar provisions to establish a Smart Energy and Water Efficiency Pilot Program administered by DOE to award grants to water systems, utilities, and water districts to demonstrate innovative technologies for energy and water efficiency. The House passed H.R. 8 in December 2015, and the Senate passed S. 2012 in April 2016.
- Separate legislation, S. 2673, proposed to establish a grant program at EPA for technical assistance and financing of innovative technologies to be used by public water and wastewater systems to address a range of project types including water conservation, water quality, drinking water, and treating agricultural, municipal, and industrial wastewater. Authorized funding under this

⁹ A predecessor bill in the 114th Congress, S. 128, contained similar provisions that addressed energy and water efficiency measures in federal and commercial buildings. A House bill with similar provisions is H.R. 873. Further, Congress included similar provisions in separate legislation (S. 1), which the House and Senate approved early in 2015. However, President Obama vetoed S. 1 over concerns with other parts of the bill, which would have authorized the Keystone XL pipeline, and the Senate failed to override the President's veto.

- program would be \$50 million per year. S. 2848 included a similar grant program.
- H.R. 2177 and S. 720 included provisions directing the Department of Energy to work with manufacturers to identify opportunities for improved water-efficient processes in manufacturing, along with technical assistance on energy efficiency, pollution prevention, and natural resource conservation in manufacturing.
 - Several bills (S. 176, H.R. 291, S. 741, H.R. 1278, and H.R. 4653) included provisions that proposed to authorize EPA to award grants to owners and operators of water systems to increase the systems' resilience to changes in hydrologic conditions. Among other eligible uses would be projects to conserve water or enhance water use efficiency of the water system. The legislation proposed to authorize \$50 million per year for five years.
 - Two bills that addressed the western U.S. drought (S. 1837 and H.R. 2983) and two standalone measures (H.R. 1775 and S. 896) included provisions that proposed to authorize EPA to award planning, development, and implementation grants for innovative stormwater management projects. A fifth bill (H.R. 4648), while not directly authorizing assistance, proposed to establish in law the authority to reserve a portion of Clean Water Act infrastructure funding for such projects. Innovative stormwater management techniques, such as green infrastructure projects using natural systems (e.g., planting trees and restoring wetlands), are intended to mimic natural systems as a way to reduce and treat stormwater at its source, thus saving the water resource and improving water quality.¹⁰
 - Three bills (S. 176, H.R. 291, and H.R. 3720) proposed to authorize assistance to state, local, or tribal governments; wastewater, water, or energy utilities; or nonprofit organizations to support incentive programs for residential water-efficient products and services. Throughout the United States, a number of local governments and water and energy utilities offer rebates, vouchers, or other types of incentives to consumers, but providing resources to support such programs can be challenging. The legislation proposed to authorize EPA to provide assistance to eligible entities for such consumer incentive programs.
 - Finally, several bills in the 114th Congress proposed to establish a new federal financing program for water infrastructure projects in western states. One of the goals of funded projects would be water efficiency and energy efficiency in development of water supply projects. The proposal, called the Reclamation Infrastructure Finance and Investment Act (RIFIA), is modeled after Water Infrastructure Finance and Investment Act (WIFIA) legislation that Congress enacted in 2014 (P.L. 113-121).¹¹ WIFIA is to be implemented by EPA and the Army Corps of Engineers throughout the United States; RIFIA would be implemented by the Bureau of Reclamation solely in western states. Bills that contained provisions to provide federal credit assistance to projects in the western states include S. 176/H.R. 291, S. 1837, S. 1894, S. 2533/H.R. 5247, and H.R. 6022.

¹⁰ For information, see CRS Report R43131, *Green Infrastructure and Issues in Managing Urban Stormwater*, by (name redacted) .

¹¹ For information, see CRS Report R43315, *Water Infrastructure Financing: The Water Infrastructure Finance and Innovation Act (WIFIA) Program*, by (name redacted) .

Tax Incentives

The final category of bills in the 114th Congress proposed to use the federal tax code to provide incentives for improved water use efficiency.

- Two bills (H.R. 2983 and S. 1837) proposed to amend the Internal Revenue Code of 1986 to provide a refundable federal tax credit for the purchase and installation of a qualified water-harvesting system. Rain barrels and similar rainwater harvesting systems collect stormwater runoff and store the water for subsequent uses such as irrigation, toilet flushing, washing clothes, or washing vehicles, thus reducing water use and managing stormwater. A few states (for example, Arizona and Texas) currently allow tax exemption under state law for installing such systems.
- Two other bills (H.R. 3720 and H.R. 4615) proposed to amend the Internal Revenue Code of 1986 to provide that rebates or other types of financial incentives received for installing water conservation measures are exempt from federal taxation. Energy efficiency rebates have been exempt from federal tax since 1992. These bills were intended to achieve the same treatment for rebates or other assistance provided for water efficiency equipment or measures.¹²

Conclusion

This report has identified five categories of bills in the 114th Congress that addressed water use efficiency, or water conservation, approaches and policy. A significant number of bills—often more than two dozen—have similarly been introduced in prior Congresses. Many of the 114th Congress proposals have been introduced multiple times. For example, five bills to establish the WaterSense program in law were introduced in the 111th Congress, and eight measures to do so were introduced in 2015 and 2016. The number of bills that proposed to authorize grants or other financial assistance has increased—five bills were proposed in the 111th Congress, while 20 were introduced in 2015 and 2016.

Some of the policy approaches described in this report were included in bills that addressed multiple aspects of water use efficiency. One such bill is H.R. 3720, with provisions that touched on four aspects of the issue—WaterSense, water use in buildings, financial assistance, and tax incentives. In other proposals, water use efficiency was one of a number of issues, but not the main issue, contained in comprehensive policy proposals on topics such as energy policy (e.g., H.R. 8, S. 2012, and S. 2089), water policy generally (H.R. 291 and S. 176), or solutions to the western U.S. drought (S. 1837, S. 1894, S. 2533/H.R. 5247, and H.R. 2983). The Senate and House passed separate energy policy bills (S. 2012 and H.R. 8), but did not reach consensus on a final bill before the end of the 114th Congress. In December 2016, Congress enacted legislation that addressed western U.S. drought (S. 612), but it did not include the water efficiency provisions of separate drought bills.

In the area of energy policy, including energy efficiency considerations, a body of legislation exists that broadly defines a federal role in research, technical and financial assistance, and information. Currently, no similar statement of federal policy exists regarding water use

¹² In the Senate, an amendment with a similar purpose was submitted to H.R. 636 (S.Amdt. 3552), but it was not debated in connection with the underlying bill, which the Senate passed on April 19, 2016.

efficiency or conservation. At the same time, interest has increased to address the pressures on water resources—pressures of access, scarcity, and quality due to population and economic growth, pollution, and other challenges—which some analysts believe is equally important as a national issue as is energy.

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