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Summary of the Clean Energy Standard Act of 2012, S. 2146

As Introduced by Senator Bingaman on March 1, 2012

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This summary provides an overview of S. 2146, the Clean Energy Standard Act of 2012 (CESA), introduced by Senator Bingaman and 8 cosponsors on March 1, 2012.¹ The CESA establishes a standard for clean energy generation in the U.S. through 2035.

1. What is the clean energy standard?

- Beginning in 2015, each utility covered under the CESA must obtain a certain amount of electricity from “clean” sources. That obligation increases each year, so that in 2035 covered utilities must supply 84% of their total annual sales of electricity from clean sources.ⁱ
- Covered utilities can generate electricity from clean sources to meet the electric demands of their consumers, or they can purchase tradable credits from other clean sources.ⁱⁱ
- Covered utilities that do not generate electricity from clean sources or purchase credits from other clean sources may also comply by paying a fee, known as an alternative compliance payment.ⁱⁱⁱ That payment starts at 3 cents/kWh in 2015, and annually increases by 5% plus the rate of inflation.^{iv} Use of revenues collected through this fee is discussed under question 7.
- For illustrative purposes, the clean energy target and alternative compliance payments for five years are shown below.

Year	Percent of Electricity from Clean Sources	Estimated Alternative Compliance Payments if Inflation is 2.4%² Annually (cents/kWh)
2015	24%	3
2020	39%	4.3
2025	54%	6.1
2030	69%	8.8
2035	84%	12.5

¹ <http://thomas.loc.gov/home/thomas.php>

² 2.4% is the 10-year average inflation for 2002 through 2011. It was calculated using the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers, U.S. city average, all items.



2. What qualifies as clean generation?

- For a power plant to help satisfy a utility's obligation for clean electricity, it must be located in the United States.
- Units placed in service after December 31, 1991 qualify as clean sources if they use the following resources:^v
 - Renewable energy, including: solar, wind, ocean, current, wave, tidal, geothermal, hydropower, and qualified renewable biomass^{3,4}
 - Natural gas, including coal mine methane^{vi}
 - Nuclear power
 - Qualified waste. Qualified waste-to-energy facilities include those that combust the following: biogas; landfill methane; post-recycled municipal solid waste; gas produced from gasification or pyrolysis of post-recycled municipal solid waste; animal waste or byproducts; and wood, paper products that are not commonly recyclable, and vegetation, if diverted from or separated from other waste out of a municipal waste stream.^{5,vii}
- Facilities using other sources of energy with a carbon intensity⁶ lower than 0.82 metric tons of CO₂e/MWh and qualified combined heat and power facilities⁷ may be eligible to earn credits if they are built after the legislation is enacted.^{viii}
- Any facility that captures carbon dioxide and prevents its release into the atmosphere qualifies as a clean energy source.^{ix}
- When determining each covered utility's compliance obligation, electricity from hydropower and nuclear power facilities placed into service in the United States before 1992 is first deducted from the total sum of the utility's annual electricity sales, reducing the utility's clean energy obligation.^x
- Additional generation at nuclear and hydro plants built before 1992 is considered clean if it is the direct result of efficiency improvements and capacity additions that take place after December 31, 1991.^{xi}

³ The CESA narrowly defines renewable energy to include solar, wind, ocean, current, wave, tidal, and geothermal. The CESA does not include hydropower and qualified renewable biomass in the definition of renewable energy, but does allow them to earn clean energy credits under certain circumstances.

⁴ According to Sec. 6109(b)(5) of the CESA, "Qualified renewable biomass means renewable biomass produced and harvested through land management practices that maintain or restore the composition, structure, and processes of ecosystems, including the diversity of plant and animal communities, water quality, and the productive capacity of soil and the ecological system."

⁵ To qualify, waste-to-energy facilities that commence operation before the CESA is enacted must meet the standards for new sources under Clean Air Act sections 112 and 129 that are in effect on the date CESA is enacted (Facilities built after the CESA is enacted are already subject to the standards for new sources under Clean Air Act Sections 112 and 129).

⁶ CESA credits generators on the basis of their carbon dioxide equivalent emissions (CO₂e). (For a definition of CO₂e, see: <http://www.epa.gov/climatechange/glossary.html#C>).

⁷ To qualify as clean energy a combined heat and power system must be at least 50% efficient and produce at least 20% of its useful energy as electricity and at least 20% as thermal energy.

3. How are clean energy credits awarded?

- Not all clean generators receive full credit for each MWh generated. Instead, credits are awarded in proportion to the carbon intensity of the net electricity produced.⁸ Facilities producing electricity without producing greenhouse gas (GHG) emissions receive full credit. Facilities producing electricity with some GHG emissions (e.g., natural gas-fired power plants) are credited based on how much lower their carbon intensity is than 0.82 tons of CO₂e / MWh, which was chosen to reflect the carbon intensity of a new supercritical coal facility.^{9,xii}
- Combined Heat and Power (CHP) – in general, CHP units earn credits based on how much less carbon-intensive their electric generation is than a new coal-fired unit. However, any credits earned through the generation of electricity would be reduced by an amount equal to the quantity of electricity (MWh) consumed on site multiplied by the annual clean energy target established by CESA (e.g., 24% in 2015).¹⁰ CHP facilities can earn extra credits for the GHG emissions avoided as a result of using a CHP system to meet onsite thermal needs (as opposed to a separate boiler).^{xiii}
- Biomass – the CESA requires the Secretary of Energy to issue interim regulations within 180 days of enactment for determining the carbon intensity of biomass, based on initial consideration of net changes in GHG emissions associated with generating electricity from each significant source of qualified renewable biomass, including emissions from changes in land use associated with production of the biomass. Final regulations are to be developed by the Secretary within one and a half years of enactment of the CESA. The Secretary's determination of the carbon intensity of biomass is required to be informed by a study commissioned by the National Academy of Sciences, and through consultation with the EPA Administrator, the Secretary of Interior, and the Secretary of Agriculture, and after considering a report published by the National Academy of Sciences.^{xiv}

4. Which electric utilities are covered by the Standard?

- In 2015 the standard applies to all utilities that have at least 2,000,000 MWh of sales. The applicability threshold declines by 100,000 MWh per year for the next ten years, so that in 2025 the standard applies to all utilities that have at least 1,000,000 MWh of electricity sales. The threshold remains at 1,000,000 MWh of electricity sales in 2026 and every year thereafter. The determination is made annually based on the previous year's sales data.^{xv}

⁸ The Secretary of Energy is directed to consult with the Administrator of the Environmental Protection Agency in determining the carbon intensity of generating facilities.

⁹ http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=c191b0b9-e5b2-4afb-9a5f-444dcf24020c

¹⁰ The CESA would not create a compliance obligation for CHP facilities. However, by scaling the deducted onsite electricity use to the annual clean energy target, these crediting adjustments account for the fact that most facilities that house CHP units are also electricity consumers, and to ensure that self-generators of electricity are effectively held to a comparable clean energy standard as their electric utility counterparts.

Year	Applicability Threshold (MWh of Electricity Sales)	Covered Entities*	Percent Total Sales in Affected States*	Percent Total Entities in Affected States*
2015	2,000,000	224	82%	7.4%
2020	1,500,000	265	84%	8.8%
2025	1,000,000	372	88%	12.3%
2030	1,000,000	372	88%	12.3%
2035	1,000,000	372	88%	12.3%

*Estimates are provided based on 2010 electricity sales within the continental U.S. (i.e., not including Alaska and Hawaii).

- The Clean Energy Standard Act does not apply to electric utilities located in Alaska or Hawaii.^{11,xvi}

5. How will clean energy credits be traded?

- The Secretary of Energy is directed to establish a trading program that utilities can use to submit clean energy credits and demonstrate compliance with the CESA.^{xvii}
- As a general matter, credits will be issued to the generator of clean energy.^{12,xviii}
- Credits can only be used once.^{xix}
- Unused credits can be banked for use in a future year.^{xx}
- The Secretary may delegate to one or more entities the tracking of dispatch of clean generation, and the administration of a clean energy credit market for the sale or trade of clean energy credits. The tracking and reporting of information concerning dispatch of clean generation must be independent of any generation or load interests subject to an obligation under the CESA.^{xxi}

6. What happens to utilities that don't comply with the Standard?

- Utilities that do not meet the standard by submitting clean energy credits or by making alternative compliance payments are assessed penalties at a rate of two times the alternative compliance payment.^{xxii} In addition, they will be assessed civil penalties under 42 U.S.C. 6303(d).^{xxiii} This section requires the Federal Energy Regulatory Commission to assess penalties up to \$100 to any person that knowingly violates the standard. Each violation and each day of violation constitute a separate violation. Note that penalties are unlikely as regulated utilities can comply by simply making an alternative compliance payment.
- No penalties are assessed if the utility is unable to comply with the clean energy standard for reasons that are deemed to be outside of their reasonable control.^{xxiv}

¹¹ In 2007, 57% of Alaska's electric generation came from natural gas and 19% came from hydro, while only 9% came from coal. Hawaii's electric generation was 14% coal, 77% oil, and 7% renewable (<http://cait.wri.org>). Hawaii has a renewable portfolio standard (RPS) of 40% by 2030. Alaska does not have an RPS (www.dsireusa.org).

¹² According to Sec. 610(e)(3)(B) of the CESA, "a clean energy credit issued for clean energy generated and sold for resale under a contract in effect on the date of enactment of this section shall be issued to the purchasing electric utility, unless otherwise provided by the contract."

- Noncompliant entities in states that have more stringent requirements than the Clean Energy Standard Act will have their penalties reduced by the amount paid to the state for failure to comply with the state requirements.^{xxv}
- The CESA establishes a standard for covered utilities; no standards or penalties are established for individual generators.^{xxvi}

7. What is the role of energy efficiency in meeting the Standard?

- All funds collected by the Secretary of Energy as alternative compliance payments or civil penalties are to be used to fund state energy efficiency programs.^{xxvii}
- 75% of the funds shall be directed to states for implementation of their energy efficiency plans under section 362 of Energy Policy and Conservation Act, in a manner that is proportional to the amounts collected by the Secretary from covered utilities operating in each state. The Secretary may issue additional guidelines and criteria for the program, as appropriate. This allocation is not subject to further appropriation or fiscal year limitation.^{xxviii}
- The 25% of funds that are not explicitly accounted for in the CESA are expected to remain in the U.S. Treasury. This ensures that CESA is revenue neutral with respect to the U.S. federal budget.
- Though not explicitly credited under CESA, effective energy efficiency efforts conducted within a covered utility's service territory will lower the baseline of total electricity sales, thus making the CESA target (which is calculated as a percentage of the previous year's total sales) more achievable during subsequent compliance periods.
- No later than 3 years after enactment, the Secretary is required to submit to Congress a report examining ways to supplement the CESA by addressing clean energy resources that do not generate electricity but that may substantially reduce electricity loads, including energy efficiency, biomass converted to thermal energy, geothermal energy collected using heat pumps, thermal energy delivered through district heating systems, and waste heat used as industrial process heat.^{xxix}

8. What will happen to state Renewable Portfolio Standards and emissions reduction policies?

- CESA does not affect the authority of a state, city, county, municipality or other political subdivision of a state to adopt or enforce any law or regulation relating to clean or renewable energy or the regulation of an electric utility. This includes state Renewable Portfolio Standards.^{xxx}
- No action by a state, city, county, municipality, or other political subdivision of a state may relieve an electric utility from compliance with the CESA.^{xxxi}
- The Secretary of Energy is directed to facilitate coordination between the CESA and the relevant state clean and renewable energy programs to the maximum extent practicable. This is to be done in consultation with states.^{xxxii}

9. What about upstream methane emissions from natural gas systems?

- Methane emissions associated with the production of natural gas (or coal) are not considered when determining the number of clean energy credits to award to generators.
- The Secretary of Energy is directed to submit a report to Congress within two years of enactment of the CESA that quantifies the losses of natural gas during production and transportation, and makes recommendations for policies and programs to promote conservation of natural gas.^{xxxiii}

ⁱ Sec. 610(c)(2), pg. 8

ⁱⁱ Sec. 610(d), pg. 9

ⁱⁱⁱ Sec. 610(d)(2), pg. 9 & Sec. 610(i), pg. 18

^{iv} Sec. 610(m), pg. 22

^v Sec. 610(b)(1)(A), pg. 2

^{vi} Sec. 610(b)(2)(A), pg. 3

^{vii} Sec. 610(b)(6), pg. 6

^{viii} Sec. 610(b)(1)(B), pg. 2

^{ix} Sec. 610(b)(1)(D), pg. 3

^x Sec. 610(c)(3), pg. 8

^{xi} Sec. 610(b)(4), pg. 4

^{xii} Sec. 610(f), pg. 11

^{xiii} Sec. 610(f)(3), pg. 12

^{xiv} Sec. 610(g), pg. 14

^{xv} Sec. 610(k)(1)&(2), pg. 19

^{xvi} Sec. 610(o), pg. 24

^{xvii} Sec. 610(e)(1), pg. 9

^{xviii} Sec. 610(e)(2), pg. 11

^{xix} Sec. 610(e)(3)(A), pg. 10

^{xx} Sec. 610(e)(5), pg. 11

^{xxi} Sec. 610(e)(4), pg. 10

^{xxii} Sec. 610(h)(1), pg. 17

^{xxiii} Sec. 610(h)(3), pg. 18

^{xxiv} Sec. 610(h)(2)(A), pg. 17

^{xxv} Sec. 610(h)(2)(B), pg. 17

^{xxvi} Sec. 610(f)(2), pg. 12

^{xxvii} Sec. 610(j)(2), pg. 18

^{xxviii} Sec. 610(j)(3), pg. 18

^{xxix} Sec. 610(n), pg. 22

^{xxx} Sec. 610(l)(1)(A), pg. 21

^{xxxi} Sec. 610(l)(1)(B), pg. 21

^{xxxii} Sec. 610(l)(2), pg. 22

^{xxxiii} Sec. 611, pg. 24