^{112TH CONGRESS} 2D SESSION **S. 2146**

To amend the Public Utility Regulatory Policies Act of 1978 to create a market-oriented standard for clean electric energy generation, and for other purposes.

IN THE SENATE OF THE UNITED STATES

March 1, 2012

Mr. BINGAMAN (for himself, Mr. WYDEN, Mr. SANDERS, Mr. UDALL of Colorado, Mr. FRANKEN, Mr. COONS, Mr. KERRY, Mr. WHITEHOUSE, and Mr. UDALL of New Mexico) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

- To amend the Public Utility Regulatory Policies Act of 1978 to create a market-oriented standard for clean electric energy generation, and for other purposes.
 - 1 Be it enacted by the Senate and House of Representa-
 - 2 tives of the United States of America in Congress assembled,

3 SECTION 1. SHORT TITLE.

4 This Act may be cited as the "Clean Energy Stand-5 ard Act of 2012".

1 SEC. 2. FEDERAL CLEAN ENERGY STANDARD.

2 Title VI of the Public Utility Regulatory Policies Act
3 of 1978 (16 U.S.C. 2601 et seq.) is amended by adding
4 at the end the following:

5 "SEC. 610. FEDERAL CLEAN ENERGY STANDARD.

6 "(a) PURPOSE.—The purpose of this section is to cre-7 ate a market-oriented standard for electric energy genera-8 tion that stimulates clean energy innovation and promotes 9 a diverse set of low- and zero-carbon generation solutions 10 in the United States at the lowest incremental cost to elec-11 tric consumers.

12	"(b) DEFINITIONS.—In this section:
13	"(1) CLEAN ENERGY.—The term 'clean energy'
14	means electric energy that is generated—
15	"(A) at a facility placed in service after
16	December 31, 1991, using—
17	"(i) renewable energy;
18	"(ii) qualified renewable biomass;
19	"(iii) natural gas;
20	"(iv) hydropower;
21	"(v) nuclear power; or
22	"(vi) qualified waste-to-energy;
23	"(B) at a facility placed in service after
24	the date of enactment of this section, using—
25	"(i) qualified combined heat and
26	power; or

1	"(ii) a source of energy, other than
2	biomass, with lower annual carbon inten-
3	sity than 0.82 metric tons of carbon diox-
4	ide equivalent per megawatt-hour;
5	"(C) as a result of qualified efficiency im-
6	provements or capacity additions; or
7	"(D) at a facility that captures carbon di-
8	oxide and prevents the release of the carbon di-
9	oxide into the atmosphere.
10	"(2) NATURAL GAS.—
11	"(A) INCLUSION.—The term 'natural gas'
12	includes coal mine methane.
13	"(B) EXCLUSIONS.—The term 'natural
14	gas' excludes landfill methane and biogas.
15	"(3) QUALIFIED COMBINED HEAT AND
16	POWER.—
17	"(A) IN GENERAL.—The term 'qualified
18	combined heat and power' means a system
19	that—
20	"(i) uses the same energy source for
21	the simultaneous or sequential generation
22	of electrical energy and thermal energy;
23	"(ii) produces at least—

	1
1	((I) 20 percent of the useful en-
2	ergy of the system in the form of elec-
3	tricity; and
4	((II) 20 percent of the useful en-
5	ergy in the form of useful thermal en-
6	ergy;
7	"(iii) to the extent the system uses
8	biomass, uses only qualified renewable bio-
9	mass; and
10	"(iv) operates with an energy effi-
11	ciency percentage that is greater than 50
12	percent.
13	"(B) DETERMINATION OF ENERGY EFFI-
14	CIENCY.—For purposes of subparagraph (A),
15	the energy efficiency percentage of a combined
16	heat and power system shall be determined in
17	accordance with section $48(c)(3)(C)(i)$ of the
18	Internal Revenue Code of 1986.
19	"(4) QUALIFIED EFFICIENCY IMPROVEMENTS
20	OR CAPACITY ADDITIONS.—
21	"(A) IN GENERAL.—Subject to subpara-
22	graphs (B) and (C), the term 'qualified effi-
23	ciency improvements or capacity additions'
24	means efficiency improvements or capacity ad-
25	ditions made after December 31, 1991, to—

	-
1	"(i) a nuclear facility placed in service
2	on or before December 31, 1991; or
3	"(ii) a hydropower facility placed in
4	service on or before December 31, 1991.
5	"(B) EXCLUSION.—The term 'qualified ef-
6	ficiency improvements or capacity additions'
7	does not include additional electric energy gen-
8	erated as a result of operational changes not di-
9	rectly associated with efficiency improvements
10	or capacity additions.
11	"(C) Measurement and certifi-
12	CATION.—In the case of hydropower, efficiency
13	improvements and capacity additions under this
14	paragraph shall be—
15	"(i) measured on the basis of the
16	same water flow information that is used
17	to determine the historic average annual
18	generation for the applicable hydroelectric
19	facility; and
20	"(ii) certified by the Secretary or the
21	Commission.
22	"(5) QUALIFIED RENEWABLE BIOMASS.—The
23	term 'qualified renewable biomass' means renewable
24	biomass produced and harvested through land man-
25	agement practices that maintain or restore the com-

1	position, structure, and processes of ecosystems, in-
2	cluding the diversity of plant and animal commu-
3	nities, water quality, and the productive capacity of
4	soil and the ecological systems.
5	"(6) QUALIFIED WASTE-TO-ENERGY.—The
6	term 'qualified waste-to-energy' means energy pro-
7	duced—
8	"(A) from the combustion of—
9	"(i) post-recycled municipal solid
10	waste;
11	"(ii) gas produced from the gasifi-
12	cation or pyrolization of post-recycled mu-
13	nicipal solid waste;
14	''(iii) biogas;
15	"(iv) landfill methane;
16	"(v) animal waste or animal byprod-
17	ucts; or
18	"(vi) wood, paper products that are
19	not commonly recyclable, and vegetation
20	(including trees and trimmings, yard
21	waste, pallets, railroad ties, crates, and
22	solid-wood manufacturing and construction
23	debris), if diverted from or separated from
24	other waste out of a municipal waste
25	stream; and

1	"(B) at a facility that the Commission has
2	certified, on an annual basis, is in compliance
3	with all applicable Federal and State environ-
4	mental permits, including—
5	"(i) in the case of a facility that com-
6	mences operation before the date of enact-
7	ment of this section, compliance with emis-
8	sion standards under sections 112 and 129
9	of the Clean Air Act (42 U.S.C. 7412,
10	7429) that apply as of the date of enact-
11	ment of this section to new facilities within
12	the applicable source category; and
13	"(ii) in the case of a facility that pro-
14	duces electric energy from the combustion,
15	pyrolization, or gasification of municipal
16	solid waste, certification that each local
17	government unit from which the waste
18	originates operates, participates in the op-
19	eration of, contracts for, or otherwise pro-
20	vides for recycling services for residents of
21	the local government unit.
22	"(7) RENEWABLE ENERGY.—The term 'renew-
23	able energy' means solar, wind, ocean, current, wave,
24	tidal, or geothermal energy.
25	"(c) CLEAN ENERGY REQUIREMENT.—

"(1) IN GENERAL.—Effective beginning in cal endar year 2015, each electric utility that sells elec tric energy to electric consumers in a State shall ob tain a percentage of the electric energy the electric
 utility sells to electric consumers during a calendar
 year from clean energy.

7 "(2) PERCENTAGE REQUIRED.—The percentage
8 of electric energy sold during a calendar year that
9 is required to be clean energy under paragraph (1)
10 shall be determined in accordance with the following
11 table:

"Calendar year	Minimum annual percentage
2015	24
2016	2^{\prime}
2017	30
2018	33
2019	3
2020	3
2021	4
2022	4
2023	4
2024	5
2025	5
2026	5
2027	6
2028	6
2029	6
2030	6
2031	7
2032	7
2033	7
2034	8
2035	8

12 "(3) DEDUCTION FOR ELECTRIC ENERGY GEN13 ERATED FROM HYDROPOWER OR NUCLEAR

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1	POWER.—An electric utility that sells electric energy
2	to electric consumers from a facility placed in service
3	in the United States on or before December 31,
4	1991, using hydropower or nuclear power may de-
5	duct the quantity of the electric energy from the
6	quantity to which the percentage in paragraph (2)
7	applies.
8	"(d) Means of Compliance.—An electric utility
9	shall meet the requirements of subsection (c) by—
10	"(1) submitting to the Secretary clean energy
11	credits issued under subsection (e);
12	"(2) making alternative compliance payments of
13	3 cents per kilowatt hour in accordance with sub-
14	section (i); or
15	"(3) taking a combination of actions described
16	in paragraphs (1) and (2) .
17	"(e) Federal Clean Energy Trading Pro-
18	GRAM.—
19	"(1) ESTABLISHMENT.—Not later than 180
20	days after the date of enactment of this section, the
21	Secretary shall establish a Federal clean energy
22	credit trading program under which electric utilities
23	may submit to the Secretary clean energy credits to
24	certify compliance by the electric utilities with sub-
25	section (c).

1	"(2) CLEAN ENERGY CREDITS.—Except as pro-
2	vided in paragraph (3)(B), the Secretary shall issue
3	to each generator of electric energy a quantity of
4	clean energy credits determined in accordance with
5	subsections (f) and (g).
6	"(3) Administration.—In carrying out the
7	program under this subsection, the Secretary shall
8	ensure that—
9	"(A) a clean energy credit shall be used
10	only once for purposes of compliance with this
11	section; and
12	"(B) a clean energy credit issued for clean
13	energy generated and sold for resale under a
14	contract in effect on the date of enactment of
15	this section shall be issued to the purchasing
16	electric utility, unless otherwise provided by the
17	contract.
18	"(4) Delegation of market function.—
19	"(A) IN GENERAL.—In carrying out the
20	program under this subsection, the Secretary
21	may delegate—
22	"(i) to 1 or more appropriate market-
23	making entities, the administration of a
24	national clean energy credit market for
25	purposes of establishing a transparent na-

1	tional market for the sale or trade of clean
2	energy credits; and
3	"(ii) to appropriate entities, the track-
4	ing of dispatch of clean generation.
5	"(B) Administration.—In making a del-
6	egation under subparagraph (A)(ii), the Sec-
7	retary shall ensure that the tracking and re-
8	porting of information concerning the dispatch
9	of clean generation is transparent, verifiable,
10	and independent of any generation or load in-
11	terests subject to an obligation under this sec-
12	tion.
13	"(5) Banking of clean energy credits.—
14	Clean energy credits to be used for compliance pur-
15	poses under subsection (c) shall be valid for the year
16	in which the clean energy credits are issued or in
17	any subsequent calendar year.
18	"(f) Determination of Quantity of Credit.—
19	"(1) IN GENERAL.—Except as otherwise pro-
20	vided in this subsection, the quantity of clean energy
21	credits issued to each electric utility generating elec-
22	tric energy in the United States from clean energy
23	shall be equal to the product of—

1	"(A) for each generator owned by a utility,
2	the number of megawatt-hours of electric en-
3	ergy sold from that generator by the utility; and
4	"(B) the difference between—
5	"(i) 1.0; and
6	"(ii) the quotient obtained by divid-
7	ing—
8	"(I) the annual carbon intensity
9	of the generator, as determined in ac-
10	cordance with subsection (g), ex-
11	pressed in metric tons per megawatt-
12	hour; by
13	"(II) 0.82.
14	"(2) NEGATIVE CREDITS.—Notwithstanding
15	any other provision of this subsection, the Secretary
16	shall not issue a negative quantity of clean energy
17	credits to any generator.
18	"(3) QUALIFIED COMBINED HEAT AND
19	POWER.—
20	"(A) IN GENERAL.—The quantity of clean
21	energy credits issued to an owner of a qualified
22	combined heat and power system in the United
23	States shall be equal to the difference be-
24	tween—

1	"(i) the product obtained by multi-
2	plying—
3	"(I) the number of megawatt-
4	hours of electric energy generated by
5	the system; and
6	"(II) the difference between—
7	"(aa) 1.0; and
8	"(bb) the quotient obtained
9	by dividing—
10	"(AA) the annual car-
11	bon intensity of the gener-
12	ator, as determined in ac-
13	cordance with subsection
14	(g), expressed in metric tons
15	per megawatt-hour; by
16	"(BB) 0.82; and
17	"(ii) the product obtained by multi-
18	plying—
19	"(I) the number of megawatt-
20	hours of electric energy generated by
21	the system that are consumed onsite
22	by the facility; and
23	"(II) the annual target for elec-
24	tric energy sold during a calendar

11
year that is required to be clean en-
ergy under subsection $(c)(2)$.
"(B) ADDITIONAL CREDITS.—In addition
to credits issued under subparagraph (A), the
Secretary shall award clean energy credits to an
owner of a qualified heat and power system in
the United States for greenhouse gas emissions
avoided as a result of the use of a qualified
combined heat and power system, rather than a
separate thermal source, to meet onsite thermal
needs.
"(4) QUALIFIED WASTE-TO-ENERGY.—The
quantity of clean energy credits issued to an electric
utility generating electric energy in the United
States from a qualified waste-to-energy facility shall
be equal to the product obtained by multiplying—
"(A) the number of megawatt-hours of
electric energy generated by the facility and
sold by the utility; and
"(B) 1.0.
"(g) Determination of Annual Carbon Inten-
SITY OF GENERATING FACILITIES.—
"(1) IN GENERAL.—For purposes of deter-
mining the quantity of credits under subsection (f),
except as provided in paragraph (2), the Secretary

1	shall determine the annual carbon intensity of each
2	generator by dividing—
3	"(A) the net annual carbon dioxide equiva-
4	lent emissions of the generator; by
5	"(B) the annual quantity of electricity gen-
6	erated by the generator.
7	"(2) BIOMASS.—The Secretary shall—
8	"(A) not later than 180 days after the date
9	of enactment of this section, issue interim regu-
10	lations for determining the carbon intensity
11	based on an initial consideration of the issues
12	to be reported on under subparagraph (B);
13	"(B) not later than 180 days after the
14	date of enactment of this section, enter into an
15	agreement with the National Academy of
16	Sciences under which the Academy shall—
17	"(i) evaluate models and methodolo-
18	gies for quantifying net changes in green-
19	house gas emissions associated with gener-
20	ating electric energy from each significant
21	source of qualified renewable biomass, in-
22	cluding evaluation of additional sequestra-
23	tion or emissions associated with changes
24	in land use by the production of the bio-
25	mass; and

- "(ii) not later than 1 year after the 1 2 date of enactment of this section, publish 3 a report that includes— "(I) a description of the evalua-4 5 tion required by clause (i); and 6 "(II) recommendations for deter-7 mining the carbon intensity of electric 8 energy generated from qualified re-9 newable biomass under this section; 10 and "(C) not later than 180 days after the 11 12 publication of the report under subparagraph 13 (B)(ii), issue regulations for determining the 14 carbon intensity of electric energy generated 15 from qualified renewable biomass that take into 16 account the report. "(3) CONSULTATION.—The Secretary shall con-17 18 sult with— 19 "(A) the Administrator of the Environ-20 mental Protection Agency in determining the 21 annual carbon intensity of generating facilities 22 under paragraph (1); and 23 "(B) the Administrator of the Environ-
- 24 mental Protection Agency, the Secretary of the25 Interior, and the Secretary of Agriculture in

	17
1	issuing regulations for determining the carbon
2	intensity of electric energy generated by bio-
3	mass under paragraph $(2)(C)$.
4	"(h) Civil Penalties.—
5	"(1) IN GENERAL.—Subject to paragraph (2),
6	an electric utility that fails to meet the requirements
7	of this section shall be subject to a civil penalty in
8	an amount equal to the product obtained by multi-
9	plying—
10	"(A) the number of kilowatt-hours of elec-
11	tric energy sold by the utility to electric con-
12	sumers in violation of subsection (c); and
13	"(B) 200 percent of the value of the alter-
14	native compliance payment, as adjusted under
15	subsection (m).
16	"(2) WAIVERS AND MITIGATION.—
17	"(A) FORCE MAJEURE.—The Secretary
18	may mitigate or waive a civil penalty under this
19	subsection if the electric utility was unable to
20	comply with an applicable requirement of this
21	section for reasons outside of the reasonable
22	control of the utility.
23	"(B) REDUCTION FOR STATE PEN-
24	ALTIES.—The Secretary shall reduce the
25	amount of a penalty determined under para-

1 graph (1) by the amount paid by the electric 2 utility to a State for failure to comply with the 3 requirement of a State renewable energy pro-4 gram, if the State requirement is more strin-5 gent than the applicable requirement of this 6 section.

7 "(3) PROCEDURE FOR ASSESSING PENALTY.—
8 The Secretary shall assess a civil penalty under this
9 subsection in accordance with section 333(d) of the
10 Energy Policy and Conservation Act (42 U.S.C.
11 6303(d)).

12 "(i) ALTERNATIVE COMPLIANCE PAYMENTS.—An 13 electric utility may satisfy the requirements of subsection 14 (c), in whole or in part, by submitting in lieu of a clean 15 energy credit issued under this section a payment equal 16 to the amount required under subsection (d)(2), in accord-17 ance with such regulations as the Secretary may promul-18 gate.

19 "(j) STATE ENERGY EFFICIENCY FUNDING PRO-20 GRAM.—

21 "(1) ESTABLISHMENT.—Not later than Decem22 ber 31, 2015, the Secretary shall establish a State
23 energy efficiency funding program.

24 "(2) FUNDING.—All funds collected by the Sec25 retary as alternative compliance payments under

1	subsection (i), or as civil penalties under subsection
2	(h), shall be used solely to carry out the program
3	under this subsection.
4	"(3) DISTRIBUTION TO STATES.—
5	"(A) IN GENERAL.—An amount equal to
6	75 percent of the funds described in paragraph
7	(2) shall be used by the Secretary, without fur-
8	ther appropriation or fiscal year limitation, to
9	provide funds to States for the implementation
10	of State energy efficiency plans under section
11	362 of the Energy Policy and Conservation Act
12	(42 U.S.C. 6322), in accordance with the pro-
13	portion of those amounts collected by the Sec-
14	retary from each State.
15	"(B) ACTION BY STATES.—A State that
16	receives funds under this paragraph shall main-
17	tain such records and evidence of compliance as
18	the Secretary may require.
19	"(4) Guidelines and criteria.—The Sec-
20	retary may issue such additional guidelines and cri-
21	teria for the program under this subsection as the
22	Secretary determines to be appropriate.
23	"(k) EXEMPTIONS.—
24	"(1) IN GENERAL.—This section shall not apply
25	during any calendar year to an electric utility that

1	sold less than the applicable quantity described in
2	paragraph (2) of megawatt-hours of electric energy
3	to electric consumers during the preceding calendar
4	year.
5	"(2) Applicable quantity.—For purposes of
6	paragraph (1), the applicable quantity is—
7	"(A) in the case of calendar year 2015,
8	2,000,000;
9	"(B) in the case of calendar year 2016,
10	1,900,000;
11	"(C) in the case of calendar year 2017,
12	1,800,000;
13	"(D) in the case of calendar year 2018,
14	1,700,000;
15	"(E) in the case of calendar year 2019,
16	1,600,000;
17	"(F) in the case of calendar year 2020,
18	1,500,000;
19	"(G) in the case of calendar year 2021,
20	1,400,000;
21	"(H) in the case of calendar year 2022,
22	$1,\!300,\!000;$
23	"(I) in the case of calendar year 2023,
24	$1,\!200,\!000;$

1	"(J) in the case of calendar year 2024,
2	1,100,000; and
3	"(K) in the case of calendar year 2025 and
4	each calendar year thereafter, 1,000,000.
5	"(3) CALCULATION OF ELECTRIC ENERGY
6	SOLD.—
7	"(A) DEFINITIONS.—In this subsection,
8	the terms 'affiliate' and 'associate company'
9	have the meanings given the terms in section
10	1262 of the Energy Policy Act of 2005 (42
11	U.S.C. 16451).
12	"(B) INCLUSION.—For purposes of calcu-
13	lating the quantity of electric energy sold by an
14	electric utility under this subsection, the quan-
15	tity of electric energy sold by an affiliate of the
16	electric utility or an associate company shall be
17	treated as sold by the electric utility.
18	"(1) STATE PROGRAMS.—
19	"(1) SAVINGS PROVISION.—
20	"(A) IN GENERAL.—Subject to paragraph
21	(2), nothing in this section affects the authority
22	of a State or a political subdivision of a State
23	to adopt or enforce any law or regulation relat-
24	ing to—
25	"(i) clean or renewable energy; or

1 "(ii) the regulation of an electric util-2 ity.

3 "(B) FEDERAL LAW.—No law or regula4 tion of a State or a political subdivision of a
5 State may relieve an electric utility from com6 pliance with an applicable requirement of this
7 section.

8 "(2) COORDINATION.—The Secretary, in con-9 sultation with States that have clean and renewable 10 energy programs in effect, shall facilitate, to the 11 maximum extent practicable, coordination between 12 the Federal clean energy program under this section 13 and the relevant State clean and renewable energy 14 programs.

15 "(m) ADJUSTMENT OF ALTERNATIVE COMPLIANCE
16 PAYMENT.—Not later than December 31, 2016, and an17 nually thereafter, the Secretary shall—

18 "(1) increase by 5 percent the rate of the alter19 native compliance payment under subsection (d)(2);
20 and

21 "(2) additionally adjust that rate for inflation,
22 as the Secretary determines to be necessary.

23 "(n) REPORT ON CLEAN ENERGY RESOURCES THAT
24 DO NOT GENERATE ELECTRIC ENERGY.—

"(1) IN GENERAL.—Not later than 3 years 1 2 after the date of enactment of this section, the Sec-3 retary shall submit to Congress a report examining 4 mechanisms to supplement the standard under this 5 section by addressing clean energy resources that do 6 not generate electric energy but that may substan-7 tially reduce electric energy loads, including energy 8 efficiency, biomass converted to thermal energy, geo-9 thermal energy collected using heat pumps, thermal 10 energy delivered through district heating systems, 11 and waste heat used as industrial process heat. 12 "(2) POTENTIAL INTEGRATION.—The report 13 under paragraph (1) shall examine the benefits and

challenges of integrating the additional clean energy
resources into the standard established by this section, including—

17 "(A) the extent to which such an integra-18 tion would achieve the purposes of this section;

"(B) the manner in which a baseline describing the use of the resources could be developed that would ensure that only incremental
action that increased the use of the resources
received credit; and

24 "(C) the challenges of pricing the re-25 sources in a comparable manner between orga-

1	nized markets and vertically integrated mar-
2	kets, including options for the pricing.
3	"(3) Complementary policies.—The report
4	under paragraph (1) shall examine the benefits and
5	challenges of using complementary policies or stand-
6	ards, other than the standard established under this
7	section, to provide effective incentives for using the
8	additional clean energy resources.
9	"(4) LEGISLATIVE RECOMMENDATIONS.—As
10	part of the report under paragraph (1), the Sec-
11	retary may provide legislative recommendations for
12	changes to the standard established under this sec-
13	tion or new complementary policies that would pro-
14	vide effective incentives for using the additional
15	clean energy resources.
16	"(o) EXCLUSIONS.—This section does not apply to an
17	electric utility located in the State of Alaska or Hawaii.
18	"(p) REGULATIONS.—Not later than 1 year after the
19	date of enactment of this section, the Secretary shall pro-
20	mulgate regulations to implement this section.
21	"SEC. 611. REPORT ON NATURAL GAS CONSERVATION.
22	"Not later than 2 years after the date of enactment
23	of this section, the Secretary shall submit to Congress a
24	report that—

"(1) quantifies the losses of natural gas during
 the production and transportation of the natural
 gas; and

4 "(2) makes recommendations, as appropriate,
5 for programs and policies to promote conservation of
6 natural gas for beneficial use.".