

H.R. 6 as Passed by the Senate

ACEEE's assessment of the potential energy and carbon savings
16-Jul-07

Annual Energy Savings Estimates		2010						2020						2030									
		Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF) (4)	Indirect Natural Gas (BCF) (5)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF)	Indirect Natural Gas (BCF) (5)	Oil Savings (Million barrels per day)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF)	Indirect Natural Gas (BCF) (5)	Oil Savings (Million barrels per day)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Carbon Dioxide (MMT)	
TITLE II Energy Efficiency Promotion																							
Subtitle A - Promoting Advanced Lighting Technologies (1)	Sec. 212 Incandescent Reflector Lamp Efficiency Standards	N/A	N/A	N/A	N/A	N/A	N/A	5.8	1,566	N/A	29	N/A	0.06	1.2	5.8	1,566	N/A	28	N/A	0.06	1.2	4.2	
Subtitle B - Expediting New Energy Efficiency Standards (1)	Sec. 222 Regional efficiency standards for heating and cooling products	N/A	N/A	N/A	N/A	N/A	N/A	0.8	223	26	4	N/A	0.03	0.5	2.5	670	162	12	N/A	0.19	2.9	10.6	
	Sec. 223 Furnace fan rulemaking	N/A	N/A	N/A	N/A	N/A	N/A	5.2	1404	N/A	26	N/A	0.05	1.0	13	3,510	N/A	64	N/A	0.13	2.6	9.5	
	Sec. 227 Residential boiler efficiency standards	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.6	N/A	N/A	0.01	0.11	N/A	N/A	16.5	N/A	N/A	0.02	0.24	0.9	
	Sec. 229 Electric motor efficiency standards	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5	1221	N/A	22.9	N/A	0.05	0.9	8	2,160	N/A	39.1	N/A	0.08	1.6	5.9
Subtitle D: Setting Energy Efficiency Goals	Sec. 231 Energy Standards for home appliances	N/A	N/A	N/A	N/A	N/A	N/A	23	6,291	N/A	118	N/A	0.24	4.6	46.5	12,555	N/A	227	N/A	0.47	9.3	34.0	
	Sec. 233 Industrial Efficiency Program	30	8,112	198	152	0.51	8.9	35	9,485	232	178	N/A	0.60	10.4	35	9,485	232	172	N/A	0.59	10.4	38.2	
Subtitle E - Promoting Federal Leadership in Energy Efficiency and Renewable Energy (2)	Sec. 251. Oil savings plan and requirements. (7)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.89	1.70	40.6	N/A	N/A	N/A	N/A	2.33	4.43	105.8	388	
Subtitle F: Assisting State and Local Governments in Energy Efficiency	Sec. 264, 266 Federal Buildings	N/A	N/A	N/A	N/A	N/A	N/A	5.6	1,504	20.4	28	N/A	0.09	1.3	10.5	2,846	33.0	53	N/A	0.14	2.1	8	
	Sec. 268 Energy efficient commercial buildings initiative	4.5	1,202	11.0	23	0.06	1.0	27	7,212	66	135	N/A	0.34	6.3	80	21,635	198	392	N/A	1.00	18.9	69.3	
TITLE V CAFE Standards (3)	Sec. 502 Average fuel economy standards for automobiles and medium-duty trucks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.1	2.2	51.8	N/A	N/A	N/A	N/A	2.5	4.8	115	424
	Sec. 502 Heavy duty trucks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1	2.6	N/A	N/A	N/A	N/A	N/A	0.4	0.8	19	71
TOTAL		34.9	9,415	212	177	0.6	10	107.3	28,973	353	544	2.1	5.4	121.4	201.6	54,427	642	987	5.3	12.7	289.7	1063	

Senate Finance savings

Appliances	0.5	123	14.3	2	0.02	0.3	2.2	601	70	11	N/A	0.09	1.5	1.0	271	33	5	N/A	0.04	0.7	2.5
HVAC	1.2	331	1.7	6	0.01	0.3	13.1	3,525	23	66	N/A	0.16	2.9	9.5	2,577	18	47	N/A	0.12	2.2	8.0
Commercial Bldgs	2.1	576	8.8	11	0.03	0.6	16.4	4,415	67	83	N/A	0.22	4.2	16.4	4,415	67	80	N/A	0.22	4.2	15.6
Energy Star Homes	0.5	135	3.5	3	0.01	0.2	6.7	1,821	47	34	N/A	0.12	2.0	6.7	1,821	47	33	N/A	0.12	2.0	7.5
Existing Homes	0.6	161	12.9	3	0.01	0.3	0.8	218	18	4	N/A	0.02	0.4	0.8	218	18	4	N/A	0.02	0.4	1.5
Plug-in Hybrids	0.0	(3)	N/A	(0.1)	0.00	0.01	-1.4	(383)	N/A	(7)	3.0E-05	0.04	1.10	-0.2	(51)	N/A	(1)	7.9E-06	0.01	0.00	-
TOTAL	4.9	1,322	41.2	24.8	0.1	1.6	37.8	10196.0	225	191.3	3.0E-05	0.7	12.2	34.3	9250.2	183.4	167.4	7.9E-06	0.53	9.6	35.1

Cumulative Energy Savings Estimates

Cumulative Energy Savings Estimates		2010						2020						2030									
		Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF)	Indirect Natural Gas (BCF) (5)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF)	Indirect Natural Gas (BCF) (5)	Oil Savings (Gigabarrels)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Electricity (TWh)	Avoided Peak Demand (MW)	Direct Natural Gas (BCF)	Indirect Natural Gas (BCF) (5)	Oil Savings (Gigabarrels)	Primary Energy Savings (Quads)	Carbon (MMT) (3,6)	Carbon Dioxide (MMT)	
TITLE II Energy Efficiency Promotion																							
Subtitle A - Promoting Advanced Lighting Technologies (1)	Sec. 212 Incandescent Reflector Lamp Efficiency Standards	N/A	N/A	N/A	N/A	N/A	N/A	49	N/A	249	N/A	0.51	9.8	107	N/A	523	N/A	1.08	21.3	78.3			
Subtitle B - Expediting New Energy Efficiency Standards (1)	Sec. 222 Regional efficiency standards for heating and cooling products	N/A	N/A	N/A	N/A	N/A	N/A	2.5	128	13	N/A	0.15	2.4	20	540	97	N/A	0.74	11.9	43.7			
	Sec. 223 Furnace fan rulemaking	N/A	N/A	N/A	N/A	N/A	N/A	23	N/A	119	N/A	0.24	4.7	118	N/A	578	N/A	1.19	23.6	86.5			
	Sec. 227 Residential boiler efficiency standards	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38	N/A	34	N/A	0.04	0.56	N/A	163	N/A	0.16	2.39	8.8			
	Sec. 229 Electric motor efficiency standards	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32	N/A	160.3	N/A	0.33	6.3	96	N/A	469	N/A	0.97	19.1	70.2		
Subtitle D: Setting Energy Efficiency Goals	Sec. 231 Energy Standards for home appliances	N/A	N/A	N/A	N/A	N/A	N/A	128	N/A	647	N/A	1.33	25.5	488	N/A	2,386	N/A	4.91	97.3	357.2			
	Sec. 233 Industrial Efficiency Program	608	628	3080	7.0	130.4	442	2,922	2,421	N/A	7.53	131.1	794	5,243	3878	N/A	13.22	235.2	863				
Subtitle E - Promoting Federal Leadership in Energy Efficiency and Renewable Energy (2)	Sec. 251. Oil savings plan and requirements. (7)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.40	7.31	174.8	N/A	N/A	N/A	6.92	36.1	863.0	3,167		
Subtitle F: Assisting State and Local Governments in Energy Efficiency	Sec. 264, 266 Federal Buildings (ASE)	N/A	N/A	N/A	N/A	N/A	N/A	47.5	151	241	N/A	0.65	10.0	141	428	713	N/A	1.80	27.8	102.0			
	Sec. 268 Energy efficient commercial buildings initiative (ASE)	4.5	11.0	22.5	0.1	1.0	174	430	879	N/A	2.24	40.9	735	1,817	3,721	N/A	9.20	173.1	635				
TITLE V CAFE Standards (3)	Sec. 275 Energy and environmental block grant	0.8	4.7	4	0.01	0.2	6.13	38.1	31	N/A	0.10	1.8	6	39	30.5	N/A	0.10	1.82	6.7				
	Sec. 502 Average fuel economy standards for automobiles and medium-duty trucks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.7	8.8	211	N/A	N/A	N/A	9.0	47.0	1,122	4,119		
	Sec. 502 Heavy duty trucks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.05	0.2	10	N/A	N/A	N/A	0.9	4.7	113	416		
TOTAL		613.3	-	644	3,106	7.0	131.7	904.1	-	3,706	4,579	3.1	29.5	628.5	2,505	-	8,230	12,396	16.8	121.2	2,712	9,954	

Senate Finance savings

Appliances	0.9	28.6	5	0.04	0.6	14.6	456	74	N/A	0.62	9.6	31.3	993	153	N/A	1.34	20.8	76.4
HVAC	2.5	3.5	12	0.03	0.5	71.5	121	362	N/A	0.87	16.0	190.5	336	931	N/A	2.31	42.9	157.4
Commercial Bldgs	4.3	17.5	22	0.06	1.1	98.7	406	500	N/A	1.37	25.8	262.2	1,078	1,281	N/A	3.59	68.1	250.0
Energy Star Homes	1.0	7.0	5	0.02	0.3	35.1	246	178	N/A	0.62	10.5	102.6	716	501	N/A	1.80	31.0	113.8
Existing Homes	1.4	29.5	7	0.03	0.7	9.0	196	46	N/A	0.20	4.7	17.1	371	83	N/A	0.38	8.9	32.5
Plug-in Hybrids	0.0	N/A	0	0.00	0.01	(6.3)	N/A	(32)	4.8E-05	0.18	4.9	(15.6)	N/A	(76)	1.3E-04	0.51	11.1	40.6
TOTAL	10.0	86.1	50.5	0.2	3.3	222.6	1425	1127.7	4.8E-05	3.9	71.4	588.0	3,497	2,873	1.3E-04	9.9	182.8	670.7

Notes:

- These assessments were prepared based on an analysis by Andrew Delaski of ASAP. The regional efficiency standards for heating and cooling are not mandatory measures, and we assume that one third of the total potential savings would be realized.
- Commercial and federal building savings depend on level of authorized funding. For the commercial building initiative, we assume that 10% of the maximum savings potential (estimated by ASE) could realistically be achieved.
- Amendment language calls for 35 mpg by 2020, with "maximum feasible" avg. fuel economy through 2030. The numbers above assume a linear increase in fuel economy between 2011 and 2020, and no subsequent increase in fuel economy due to the lack of fuel economy target. Depending on the rate of fuel economy increase between 2011 and 2020, actual savings could be higher or lower than the numbers specified above. Title V also requires the establishment of fuel economy standards for heavy-duty vehicles, but sets no numerical target. We assume 2% per year increase in fuel economy, starting in 2016.
- Direct gas represents the natural gas saved directly by the measures
- Indirect gas is the gas avoided in electric power generation. Indirect gas and electric carbon emissions reductions are based on national average fuel mix and heat rate as projected in AEO 2005.
- Carbon savings estimates do not include direct coal savings, which result from displaced steam generation.
- Title II requires specific reductions in oil use from projected levels, but enforceability of the requirement is questionable. We assume that efficiency measures achieve half of the oil savings required beyond the savings achieved through other provisions.