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SENATE BILL 6029

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State of Washington

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By Senators Owen, Hochstatter, Amondson, Roach, Haugen, Sutherland and Spanel

Read first time 01/10/94. Referred to Committee on Energy & Utilities.

1 AN ACT Relating to energy standards for log built homes; and  
2 amending RCW 19.27A.020.

3 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

4 **Sec. 1.** RCW 19.27A.020 and 1990 c 2 s 3 are each amended to read  
5 as follows:

6 (1) No later than January 1, 1991, the state building code council  
7 shall promulgate rules to be known as the Washington state energy code  
8 as part of the state building code.

9 (2) The council shall follow the legislature's standards set forth  
10 in this section to promulgate rules to be known as the Washington state  
11 energy code. The Washington state energy code shall be designed to  
12 require new buildings to meet a certain level of energy efficiency, but  
13 allow flexibility in building design, construction, and heating  
14 equipment efficiencies within that framework. The Washington state  
15 energy code shall be designed to allow space heating equipment  
16 efficiency to offset or substitute for building envelope thermal  
17 performance.

18 (3) The Washington state energy code shall take into account  
19 regional climatic conditions. Climate zone 1 shall include all

1 counties not included in climate zone 2. Climate zone 2 includes:  
2 Adams, Chelan, Douglas, Ferry, Grant, Kittitas, Lincoln, Okanogan, Pend  
3 Oreille, Spokane, Stevens, and Whitman counties.

4 (4) The Washington state energy code for residential buildings  
5 shall require:

6 (a) New residential buildings that are space heated with electric  
7 resistance heating systems to achieve energy use equivalent to that  
8 used in typical buildings constructed with:

9 (i) Ceilings insulated to a level of R-38. The code shall contain  
10 an exception which permits single rafter or joist vaulted ceilings  
11 insulated to a level of R-30 (R value includes insulation only);

12 (ii) In zone 1, walls insulated to a level of R-19 (R value  
13 includes insulation only), or constructed with two by four members,  
14 R-13 insulation batts, R-3.2 insulated sheathing, and other normal  
15 assembly components; in zone 2 walls insulated to a level of R-24 (R  
16 value includes insulation only), or constructed with two by six  
17 members, R-22 insulation batts, R-3.2 insulated sheathing, and other  
18 normal construction assembly components; for the purpose of determining  
19 equivalent thermal performance, the wall U-value shall be 0.058 in zone  
20 1 and 0.044 in zone 2;

21 (iii) Below grade walls, insulated on the interior side, to a level  
22 of R-19 or, if insulated on the exterior side, to a level of R-10 in  
23 zone 1 and R-12 in zone 2 (R value includes insulation only);

24 (iv) Floors over unheated spaces insulated to a level of R-30 (R  
25 value includes insulation only);

26 (v) Slab on grade floors insulated to a level of R-10 at the  
27 perimeter;

28 (vi) Double glazed windows with values not more than U-0.4;

29 (vii) In zone 1 the glazing area may be up to twenty-one percent of  
30 floor area and in zone 2 the glazing area may be up to seventeen  
31 percent of floor area where consideration of the thermal resistance  
32 values for other building components and solar heat gains through the  
33 glazing result in thermal performance equivalent to that achieved with  
34 thermal resistance values for other components determined in accordance  
35 with the equivalent thermal performance criteria of (a) of this  
36 subsection and glazing area equal to fifteen percent of the floor area.  
37 Throughout the state for the purposes of determining equivalent thermal  
38 performance, the maximum glazing area shall be fifteen percent of the  
39 floor area; and

1 (viii) Exterior doors insulated to a level of R-5; or an exterior  
2 wood door with a thermal resistance value of less than R-5 and values  
3 for other components determined in accordance with the equivalent  
4 thermal performance criteria of (a) of this subsection.

5 (b) New residential buildings which are space-heated with all other  
6 forms of space heating to achieve energy use equivalent to that used in  
7 typical buildings constructed with:

8 (i) Ceilings insulated to a level of R-30 in zone 1 and R-38 in  
9 zone 2 the code shall contain an exception which permits single rafter  
10 or joist vaulted ceilings insulated to a level of R-30 (R value  
11 includes insulation only);

12 (ii) Walls insulated to a level of R-19 (R value includes  
13 insulation only), or constructed with two by four members, R-13  
14 insulation batts, R-3.2 insulated sheathing, and other normal assembly  
15 components;

16 (iii) Below grade walls, insulated on the interior side, to a level  
17 of R-19 or, if insulated on the exterior side, to a level of R-10 in  
18 zone 1 and R-12 in zone 2 (R value includes insulation only);

19 (iv) Floors over unheated spaces insulated to a level of R-19 in  
20 zone 1 and R-30 in zone 2 (R value includes insulation only);

21 (v) Slab on grade floors insulated to a level of R-10 at the  
22 perimeter;

23 (vi) Heat pumps with a minimum heating season performance factor  
24 (HSPF) of 6.8 or with all other energy sources with a minimum annual  
25 fuel utilization efficiency (AFUE) of seventy-eight percent;

26 (vii) Double glazed windows with values not more than U-0.65 in  
27 zone 1 and U-0.60 in zone 2. The state building code council, in  
28 consultation with the state energy office, shall review these U-values,  
29 and, if economically justified for consumers, shall amend the  
30 Washington state energy code to improve the U-values by December 1,  
31 1993. The amendment shall not take effect until July 1, 1994; and

32 (viii) In zone 1, the maximum glazing area shall be twenty-one  
33 percent of the floor area. In zone 2 the maximum glazing area shall be  
34 seventeen percent of the floor area. Throughout the state for the  
35 purposes of determining equivalent thermal performance, the maximum  
36 glazing area shall be fifteen percent of the floor area.

37 (c) For log built homes with space heat other than electric  
38 resistance, the building code council shall establish equivalent  
39 thermal performance standards consistent with the standards and maximum

1 glazing areas of (b) of this subsection. However, for log built homes  
2 in all climate zones, log or solid timber walls with a prescribed  
3 minimum average thickness are exempt from compliance calculations and  
4 must be deemed to meet this standard. For electric resistance heating  
5 in zone 2 the minimum thickness must be five and one-half inches and  
6 for other conditions the minimum thickness must be three and one-half  
7 inches.

8 (d) The state building code council may approve an energy code for  
9 pilot projects of residential construction that use innovative energy  
10 efficiency technologies intended to result in savings that are greater  
11 than those realized in the levels specified in this section.

12 (5) U-values for glazing shall be determined using the area  
13 weighted average of all glazing in the building. U-values for glazing  
14 are the tested values for thermal transmittance due to conduction  
15 resulting from either the American architectural manufacturers'  
16 association (AAMA) 1503.1 test procedure or the American society for  
17 testing materials (ASTM) C236 or C976 test procedures. Testing shall  
18 be conducted under established winter horizontal heat flow test  
19 conditions using the fifteen miles per hour wind speed perpendicular to  
20 the exterior surface of the glazing as specified under AAMA 1503.1 and  
21 product sample sizes specified under AAMA 1503.1. The AAMA 1503.1  
22 testing must be conducted by an AAMA certified testing laboratory. The  
23 ASTM C236 or C976 testing U-values include any tested values resulting  
24 from a future revised AAMA 1503.1 test procedure. Sealed insulation  
25 glass, where used, shall conform to ASTM E-774-81 level A or better.  
26 The state building code council shall maintain a list of the tested U-  
27 values for glazing products available in the state.

28 (6) The minimum state energy code for new nonresidential buildings  
29 shall be the Washington state energy code, 1986 edition, as amended.

30 (7)(a) Except as provided in (b) of this subsection, the Washington  
31 state energy code for residential structures shall preempt the  
32 residential energy code of each city, town, and county in the state of  
33 Washington.

34 (b) The state energy code for residential structures does not  
35 preempt a city, town, or county's energy code for residential  
36 structures which exceeds the requirements of the state energy code and  
37 which was adopted by the city, town, or county prior to March 1, 1990.  
38 Such cities, towns, or counties may not subsequently amend their energy

1 code for residential structures to exceed the requirements adopted  
2 prior to March 1, 1990.

3 (8) The state building code council shall consult with the state  
4 energy office as provided in RCW 34.05.310 prior to publication of  
5 proposed rules. The state energy office shall review the proposed  
6 rules for consistency with the guidelines adopted in subsection (4) of  
7 this section. The director of the state energy office shall recommend  
8 to the state building code council any changes necessary to conform the  
9 proposed rules to the requirements of this section.

10 (9) The state building code council shall conduct a study of county  
11 and city enforcement of energy codes in the state. In conducting the  
12 study, the council shall conduct public hearings at designated council  
13 meetings to seek input from interested individuals and organizations,  
14 and to the extent possible, hold these meetings in conjunction with  
15 adopting rules under this section. The study shall include  
16 recommendations as to how code enforcement may be improved. The  
17 findings of the study shall be submitted in a report to the legislature  
18 no later than January 1, 1991.

19 (10) If any electric utility providing electric service to  
20 customers in the state of Washington purchases at least one percent of  
21 its firm energy load from a federal agency, pursuant to section  
22 5.(b)(1) of the Pacific Northwest electric power planning and  
23 conservation act (P.L. 96-501), and such utility is unable to obtain  
24 from that agency at least fifty percent of the funds for payments  
25 required by RCW 19.27A.035, the amendments to this section by chapter  
26 2, Laws of 1990 shall be null and void, and the 1986 state energy code  
27 shall be in effect, except that a city, town, or county may enforce a  
28 local energy code with more stringent energy requirements adopted prior  
29 to March 1, 1990. This subsection shall expire June 30, 1995.

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