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**UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF WASHINGTON**

BUILDING INDUSTRY  
ASSOCIATION OF  
WASHINGTON; AIR AMERICA  
INC.; AIREFCO INC.; BOA  
CONSTRUCTION CO.;  
COMPLETE DESIGN INC.; CVH  
INC.; ENTEK CORP.; FAMILY  
HOME INVESTMENTS CORP.;  
SADLER CONSTRUCTION INC.;  
TRACY CONSTRUCTION CO.,

Plaintiffs,

v.

WASHINGTON STATE  
BUILDING CODE COUNCIL,

Defendant.

Case No.

COMPLAINT FOR DECLARATORY  
AND INJUNCTIVE RELIEF

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

I. INTRODUCTION

1. This action seeks declaratory and injunctive relief under federal law against enforcement of certain provisions of the Washington State Energy Code, as amended and scheduled to become effective on July 1, 2010.



1 8. Plaintiff Building Industry Association of Washington (BIAW) is a non-profit trade  
2 association. BIAW has over 11,500 company members involved in various aspects of the  
3 home building industry, including suppliers and installers of residential HVAC systems, home  
4 builders, energy efficiency consultants and design professionals.

5 9. Plaintiff Air America Inc. is a heating, ventilation and air conditioning contractor in  
6 Washington state.

7 10. Plaintiff Airefco Inc. is a heating, ventilation and air conditioning contractor with  
8 corporate headquarters in Oregon and doing business in Washington state.

9 11. Plaintiff BOA Construction Co. is a residential home builder in Washington state.

10 12. Plaintiff Complete Design Inc. is a construction design firm in Washington state.

11 13. Plaintiff CVH Inc. is a residential home builder in Washington state, specializing  
12 in green and energy efficient homes.

13 14. Plaintiff Entek Corp. is a heating, ventilation and air conditioning contractor in  
14 Washington state.

15 15. Plaintiff Family Home Investments Corp. is a construction contractor in  
16 Washington state.

17 16. Plaintiff Sadler Construction Inc. is a residential home builder in Washington state.

18 17. Plaintiff Tracy Construction Co. is a residential home builder in Washington state.

19 18. Plaintiffs will suffer harm in their respective businesses in this State as a result of  
20 the section of the State Energy Code they are challenging. These harms include but are not  
21 limited to the effects set forth below.

22 19. The relevant section of the code will effectively prohibit the Plaintiffs and all other  
23 Washington state distributors or contractors, from selling or installing residential HVAC

1 products, water heaters and plumbing equipment for use in Washington that do not meet the  
2 requirements set forth in the code.

3 20. The challenged provisions of the Code will increase the costs of certain products  
4 used in the state of Washington including HVAC products, water heaters and plumbing  
5 products manufactured, distributed, sold or installed by plaintiffs. Increased prices of this  
6 equipment will lead to losses of sales and related activities as residential consumers choose not  
7 to buy new homes, or simply are not able to buy new homes because they will be priced out of  
8 the market.

9 21. As a result of the reductions of new home sales, the Plaintiffs and all other  
10 Washington state distributors and contractors who sell and install HVAC products, water  
11 heaters and plumbing products for use in the State of Washington will sustain economic harm  
12 through lost profits and goodwill.

13 22. Plaintiffs, in reliance on the federal energy efficiency and energy use standards,  
14 have valuable investments in inventories of equipment and home designs which comply with  
15 federal standards but which do not comply with the recently updated state energy code.

16 23. The state code will disrupt sales of HVAC products, water heaters and plumbing  
17 products intended for use in the state due to confusion of manufacturers, distributors and  
18 contractors about which standards they must adhere to.

19 24. Distributors and Contractors in neighboring states which have not adopted the  
20 same regulatory provisions challenged in this action will not suffer the same or similar adverse  
21 effects on their businesses. Those effects place Washington distributors and contractors with a  
22 uniquely affected class harmed by the regulations challenged here.

1 25. Plaintiff BIAW is currently expending resources to educate contractors,  
2 distributors and others about the new changes to the state energy code. This education effort is  
3 already resulting in economic harm as a result of the regulations challenged in this action.

4 26. In sum, Plaintiffs will suffer economic harm if they are forced to comply with the  
5 preempted regulations, including being unable to supply certain equipment (for suppliers),  
6 being unable to obtain certain equipment in Washington state (for builders), being unable to  
7 decipher the Code in a way that allows them to meaningfully assist customers in selecting  
8 equipment that will comply with the Code (all), having to increase warehouse space to carry  
9 additional stock and larger stock (suppliers), and losing business because the general price of a  
10 home is estimated to increase approximately \$4,000-\$15,000, pricing many potential  
11 homebuyers out of the market.

12 27. The harm complained of herein is irreparable because even if Plaintiffs prevail, it  
13 may be impossible to obtain damages from the State due to sovereign immunity.

14 28. Defendant Washington State Building Code Council is an independent state agency  
15 pursuant to RCW 19.27.070, whose members are selected by the Governor. The SBCC is  
16 charged with adoption and maintenance of the state building codes, including the state energy  
17 code.

#### 18 IV. RIPENESS

19 29. The claims asserted herein are ripe for review because Plaintiffs are making a  
20 challenge to the facial validity of the Washington State Energy Code Chapter 9, which is a  
21 legal question. When a question is "predominantly legal," there is generally no need to await  
22 further factual development. *Pacific Gas and Electric Co. v. State Energy Resources*  
23 *Conservation and Dev. Comm'n*, 461 U.S. 190, 201 (1983).

1 V. GENERAL ALLEGATIONS

2 30. This case involves one chapter of the Washington State Energy Code, enumerated  
3 in WAC 51-11-0900. The Washington State Energy Code was updated in 2009 by the  
4 Washington State Building Code Council.

5 31. The Building Code Council voted to approve the changes to the Energy Code on  
6 November 20, 2009.

7 32. The updated version of the Washington State Energy Code goes into effect on July  
8 1, 2010.

9 33. The new Chapter 9 of the Washington State Energy Code includes a table of  
10 options for builders in order to achieve higher energy efficiency performance.

11 34. Table 9-1 is designed to be a “pick list” for builders to use in order to achieve  
12 certain levels of energy efficiency in a home. The so-called “options” are accompanied by  
13 “credits” and builders are required to achieve one credit from the “options” included in the  
14 table. The options in the table effectively mandate that homes have HVAC, plumbing or water  
15 heating equipment that meet a higher efficiency standard than those set by the federal  
16 government.

17 35. Pursuant to the requirements of EPCA, the federal Department of Energy has the  
18 responsibility for periodic updates of these standards. DOE updated the federal standards for  
19 air conditioners and heat pumps in 2001, which became effective in 2006. (See 10 C.F.R. §  
20 430.32(c)(2)). Standards for residential furnaces and boilers are currently being revised by  
21 DOE through its rulemaking process, with likely effective dates ranging from 2011 to 2015.

22 36. Options 1a, 1b, 1c and 2 explicitly require higher efficiency equipment. The  
23 current federal standard for furnaces is 78% efficiency for furnaces (42 USC § 6295 and 6297),

1 but the Washington State energy code Table 9-1 effectively requires a high efficiency furnace  
2 (92% efficiency).

3 37. Options 3a, 3b and 3c concern the building envelope itself (windows and  
4 insulation). Option 3a would need to be combined with another option in order to qualify. 3b  
5 and 3c are simply not viable in many circumstances. (Many manufacturers do not even make  
6 windows that meet these values.)

7 38. Options 4a and 4b concern ventilation and air leakage control. 4a would have to be  
8 combined with another option and 4b would be impossible in many circumstances.

9 39. Options 5a and 5b concern high efficiency water heating and faucet flow. The  
10 current federal standards for water heating equipment are based on a formula whereby the most  
11 popular size (50 gallons for electric) results in a standard (energy factor) of .88. For the most  
12 popular size of gas water heaters (40 gallons), the standard (energy factor) is .54. Therefore,  
13 applying the formula whereby tank size is factored in, Options 5a and 5b require efficiencies in  
14 excess of federal standards. Option 5a sets an efficiency standard of .93 for electric and .62 for  
15 gas, and only assigns one-half a credit, effectively mandating the installation of an upgraded  
16 water heating equipment in homes with electric systems.

17 40. In addition, both options 5a and 5b presume that gas is available to the home,  
18 which is not always the case. For those who use electric or hydronic heat, an upgraded higher-  
19 efficiency water heater must be used in the home. In layman's terms, this means home  
20 builders and buyers will effectively be forced to use a tankless water heater.

21 41. Finally, both options 5a and 5b require reduced faucet flow at a standard above  
22 federal standard. For lavatory and kitchen faucets, as well as showerheads, the U.S.  
23 Department of Energy in 1998 adopted a 2.2 gpm standard for all faucets (see 63 FR 13307;

1 March 18, 1998, 10 *CFR* Part 430.32; See also 42 U.S.C. 6295(j)). Table 9-1 Option 5  
2 outlines a flow of 1.75 gpm or less for kitchen faucets and shower heads and 1 gpm or less for  
3 all other lavatory faucets, above federal standards. (Incidentally, there is an established  
4 advisory specification for high efficiency/low-flow lavatory faucets at 1.5 gpm, promoted by  
5 the Environmental Protection Agency's *Water Sense* program and option 5a goes *even further*  
6 than this low flow/water efficient standard.)

7 42. Option 6 is to build a home less than 1,500 square feet. This is simply not an  
8 option in many circumstances.<sup>1</sup>

9 43. Option 7, which is not an option at all, but a penalty, subtracts one credit for a  
10 home exceeding 5,000 square feet.

11 44. Option 8 provides half a credit for renewable electric energy (solar or wind), which  
12 are simply not viable for many homes/home sites.

13 45. To reiterate, options 3a, 4a, 5a and 8 would have to be combined with other  
14 options, either upgraded heating or water heating equipment, in order to achieve the necessary  
15 credits to meet the code.

16 46. Table 9-1 outlines a set of false choices. In effect, the "options" in this table  
17 mandate the installation of products with efficiency standards in excess of federal standards.

## 18 VI. CLAIM FOR RELIEF

### 19 **Violation of 42 U.S.C. 6297 – Imposing energy efficiency standards higher than those set** 20 **by the federal government**

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<sup>1</sup> Plaintiffs would submit that a blanket regulation forcing individuals to live in or construct a home of a certain size runs afoul of constitutional protections against unlawful takings.



1 47. Plaintiffs reallege and incorporate herein, as if fully set forth, each and every  
2 allegation contained in paragraphs 1 through 46 of this complaint and further allege:

3 48. The energy efficiency and energy use standards for certain residential heating,  
4 ventilation, air conditioning and plumbing products are governed by the Energy Policy and  
5 Conservation Act of 1975 ("EPCA"), 42 U.S.C. § 6291 *et seq.* EPCA has been substantially  
6 amended twice, in 1987 and 1992, and sets forth direction for the federal Department of  
7 Energy ("DOE") to prescribe federal industry-wide baseline standards for 13 "covered  
8 products." DOE is also tasked with periodically updating those standards. The list of "covered  
9 products" includes central air conditioners and heat pumps (42 U.S.C. § 6295(d)), water  
10 heaters, pool heaters and direct heating equipment (42 U.S.C. § 6295(e)), furnaces and boilers  
11 (42 U.S.C. § 6295(f)), and plumbing products (42 U.S.C. § 6295(j)).

12 49. Congress adopted EPCA, and its subsequent amendments, in order to create  
13 stability for manufacturers and distributors. The preemption provisions were broadly framed  
14 because Congress wanted to "end an era of confusion and uncertainty" for the industry and  
15 "protect the appliance industry from having to comply with a patchwork of numerous  
16 conflicting State requirements." H.R. Rep. No. 100-11 at 24, 30. Congress recognized that  
17 such a "patchwork" would "increasingly complicate their design, production and marketing  
18 plans." S. Rep. No. 100-6 at 4 (1987). Congress intended that 42 U.S.C. § 6297 would  
19 "preempt[] state law under most circumstances." H.R. Rep. 100-11 at 19.

20 50. EPCA contains express preemption provisions that prohibit (with certain limited  
21 exceptions) any "State regulation, or revision thereof, concerning the energy efficiency, energy  
22 use, or water use of the covered products. . ." 42 U.S.C. § 6297(c). A "state regulation" is

1 defined as any “law, regulation, or other requirement of a State and its political subdivisions.”  
2 42 U.S.C. § 6297(a)(2)(A).

3 51. The use of the word “concerning” suggests that Congress intended the preemption  
4 provision to be expansive. Black’s Law Dictionary defines “concerning” as “relating to” and  
5 the Supreme Court has made clear that the words “relating to” express a broad preemptive  
6 purpose. See *Shaw v. Delta Air Lines*, 463 U.S. 85, 96 (1983); *Metropolitan Life Ins. Co. v*  
7 *Massachusetts*, 471 U.S. 724, 739 (1985); *Ingersoll-Rand Co. v. McLendon*, 498 U.S. 133, 138  
8 (1990).

9 52. Chapter 9 of the Washington State Energy Code is a “regulation concerning the  
10 energy efficiency, energy use, or water use of covered products” because Chapter 9  
11 specifically outlines prescriptive alternatives for HVAC and water heating equipment.

12 53. Federal law outlines two routes for a state or local jurisdiction to qualify for an  
13 exception to federal preemption. First, DOE can grant a waiver of preemption to a state of the  
14 state appeals to the Secretary of DOE and the Secretary finds that the state regulation is needed  
15 to meet some “unusual or compelling state or local energy or water interests,” that are  
16 “substantially different in nature or magnitude than those prevailing in the United States  
17 generally.” 42 U.S.C. § 6297(d).

18 54. The Washington SBCC has not asked DOE for a waiver of preemption.

19 55. The second option to avoid preemption is commonly referred to the “building  
20 code” exception and is intended to allow state or local governments to pursue “performance-  
21 based building code approaches.” 42 U.S.C. § 6297(f); H.R. No. 100-11 at 39. In order to  
22 qualify for this exception, the state or local code must meet a strict 7-part test, enumerated in  
23 42 U.S.C. § 6297(f)(3). This exception applies only to new construction, not to renovations.

1 The legislative history of NAECA sheds light on Congress's purpose in including the "building  
2 code" exception for residential products at 6297(f)(3). The House Report states that the  
3 building code exception was intended to "prevent[] state building codes from being used as a  
4 means of setting mandatory State appliance standards in excess of Federal Standards." H.R.  
5 Rep. 100-11 at 26. In addition, the flexibility provided to states in this provision was "limited"  
6 to "ensure that performance-based codes cannot expressly or effectively require the installation  
7 of covered products whose efficiencies exceed. . . the applicable Federal standard. . ." H.R.  
8 Rep. 100-11 at 26 (emphasis added). Further, it was Congress's intent that a qualifying  
9 building code "follow a one-for-one equivalency as closely as possible to assure that the credits  
10 for exceeding Federal standards are even handed and are not unfairly weighted resulting in  
11 undue pressure on builders to install covered products exceeding Federal standards." S. Rep.  
12 100-6 at 11.

13 56. According to 42 U.S.C. § 6297(f)(3)(A), the first requirement of the seven-part test  
14 is that the "code permits a builder to meet an energy consumption or conservation objective for  
15 a building by selecting items whose combined energy efficiencies meet the objective."

16 57. According to 42 U.S.C. § 6297(f)(3)(B), the code in question cannot require that  
17 any covered product have an energy efficiency exceeding the applicable federal energy  
18 conservation standard. However, the required overall efficiency set out in the "pick list" in  
19 Table 9-1 cannot be met without the use of products that exceed the federal energy  
20 conservation standards.

21 58. According to 42 U.S.C. § 6297(f)(3)(C), the code at issue must provide a one-for-  
22 one equivalent energy use for installing covered products having energy efficiencies exceeding  
23 federal energy conservation standards. With the inclusion of Table 9-1, the Washington state

1 energy code includes trade offs that weigh in favor of one building component or feature over  
2 another, and therefore do not meet the one-for-one equivalent energy use or equivalent cost  
3 basis requirement.

4 59. According to 42 U.S.C. § 6297(f)(3)(D), the fourth requirement of the seven-part  
5 test is that if the code uses one or more baseline building designs against which all submitted  
6 building designs are to be evaluated, such baseline designs must be based on products that  
7 meet but do not exceed the federal energy efficiency standards. This requirement does not  
8 apply to the facts at hand.

9 60. According to 42 U.S.C. § 6297(f)(3)(E), if the code sets forth one or more optional  
10 combinations of items which meet the objective, it is required that “for every combination  
11 which includes a covered product the efficiency of which exceeds either standard or level  
12 referred to [above], there also shall be at least one combination which includes such covered  
13 product the efficiency of which does not exceed such standard or level by more than 5 percent,  
14 except that at least one combination shall include such covered product the efficiency of which  
15 meets but does not exceed such standard.” Table 9-1 effectively requires combinations that  
16 include higher efficiency water heating or heating equipment than those set forth in federal  
17 standards.

18 61. According to 42 U.S.C. § 6297(f)(3)(F), the energy consumption or conservation  
19 objective must be specified in terms of an estimated total consumption of energy. Chapter 9  
20 does not specify how energy consumption is to be measured.

21 62. According to 42 U.S.C. § 6297(f)(3)(G), the final requirement in the seven-part  
22 test, the code’s testing procedures must comply with the applicable testing procedures under  
23 U.S.C. 6293. Chapter 9 does not specify testing procedures.



1           68. The United States Constitution makes federal law and regulations “the supreme  
2 Law of the Land.” United States Constitution, article VI, cl. 2.

3           69. The interstate commerce clause, U.S. Constitution Article 1, section 8, cl. 3, creates  
4 open national markets and prohibits unreasonable burdens upon interstate commerce.

5           70. The described provisions of the Washington State Energy Code violate the rights  
6 of all the plaintiffs to freedom of commerce as guaranteed by the interstate commerce clause.

7           71. Plaintiffs have legally protected interests under the Constitution, EPCA and other  
8 federal laws (including 42 U.S.C. § 1983) in the full enforcement of federal energy efficiency  
9 standards against Defendant’s implementation of the Chapter 9 of the Washington State  
10 Energy Code.

11           72. Chapter 9 of the Washington State Energy Code imposes standards that have not  
12 been granted a waiver of preemption and does not qualify for any statutory exception from  
13 federal preemption. The identified provisions of the Washington State Energy Code are thus  
14 preempted under 42 U.S.C. § 6297.

15           73. Plaintiffs will be actually and irreparably injured with respect to their federally  
16 protected interests if the described provisions of the Washington State Energy Code are not  
17 declared unlawful and if Defendant is not enjoined from implementing the described  
18 provisions of Chapter 9 of the Washington State Energy Code. Simply put, plaintiffs should  
19 not be penalized for using equipment that meets federal efficiency standards.

20   VIII. PRAYER FOR RELIEF

21           Wherefore, Plaintiffs pray for judgment as hereinafter set forth:

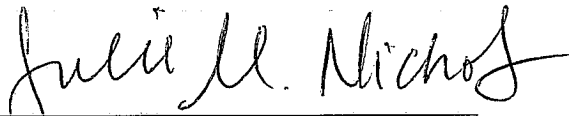
22           A. For a declaration and order finding Defendants in violation of 42 U.S.C. § 6297 and the  
23 Supremacy Clause of the Amendment of the United States Constitution;

1 B. For injunctive relief prohibiting the state from enacting the challenged sections of the  
2 regulations as scheduled on July 1, until this case is resolved.

3 C. For costs and expenses of this suit, including reasonable attorneys' fees; and

4 D. For any other relief this Court deems appropriate.  
5  
6

7 Respectfully submitted this 25<sup>th</sup> day of May, 2010.  
8

9 

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CHAPTER 9  
 ADDITIONAL SINGLE-FAMILY RESIDENTIAL  
 ENERGY EFFICIENCY REQUIREMENTS

**901 Additional Residential Energy Efficiency Requirements.** Dwelling units permitted under this Code shall comply with all provisions of Chapter 5 of this Code and develop one credit from Table 9-1.

**EXCEPTION:** Buildings complying using Chapter 4 Building Design by Systems Analysis shall meet this provision of this section by demonstrating that the proposed building energy use is 16 percent less than the target building energy use.

TABLE 9-1  
 ENERGY CREDITS (DEBITS)

OPTION	DESCRIPTION	CREDIT(S)
1a	HIGH EFFICIENCY HVAC EQUIPMENT 1: Gas, propane or oil-fired furnace or boiler with minimum AFUE of 92%, <b>or</b> Air-source heat pump with minimum HSPF of 8.5.	1.0
1b	HIGH EFFICIENCY HVAC EQUIPMENT 2: Closed-loop ground source heat pump; with a minimum COP of 3.3.	2.0
1c	HIGH EFFICIENCY HVAC EQUIPMENT 3: DUCTLESS SPLIT SYSTEM HEAT PUMPS, ZONAL CONTROL: In home where the primary space heating system is zonal electric heating, a ductless heat pump system shall be installed and provide heating to at least one zone of the housing unit.	1.0
2	HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM: <sup>1</sup> All heating and cooling system components installed inside the conditioned space. All combustion equipment shall be direct vent or sealed combustion. Locating system components in conditioned crawl spaces is not permitted under this option. Electric resistance heat is not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option.	1.0
3a	EFFICIENT BUILDING ENVELOPE 1: Prescriptive compliance is based on Table 6-1, Option III with the following modifications: Window U = 0.28 floor R-38, slab on grade R-10 full, below grade slab R-10 full. <b>or</b> Component performance compliance: Reduce the Target UA from Table 5-1 by 5%, as determined using EQUATION 1. <sup>1</sup>	0.5
3b	EFFICIENT BUILDING ENVELOPE 2: Prescriptive compliance is based on Table 6-1, Option III with the following modifications: Window U = 0.25 and wall R-21 plus R-4 and R-38 floor, slab on grade R-10 full, below grade slab R-10 full, and R-21 plus R-5 below grade basement walls. <b>or</b> Component performance compliance: Reduce the Target UA from Table 5.1 by 15%, as determined using EQUATION 1. <sup>1</sup>	1.0



3c	<p><b>SUPER-EFFICIENT BUILDING ENVELOPE 3:</b>                  Prescriptive compliance is based on Table 6-1, Option III with the following modifications: Window U = 0.22 and wall R-21 plus R-12 and R-38 floor, slab on grade R-10 full, below grade slab R-10 full and R-21 plus R-12 below grade basement walls and R-49 advanced ceiling and vault.</p> <p><b>or</b>                  Component performance compliance: Reduce the Target UA from Table 5.1 by 30%, as determined using EQUATION 1.<sup>1</sup></p>	2.0
4a	<p><b>AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION:</b>                  Envelope leakage reduced to SLA of 0.00020 building envelope tightness shall be considered acceptable when tested air leakage is less than specific leakage area of 0.00020 when tested with a blower door at a pressure difference of 50 PA. Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation, and combustion appliances.</p> <p><b>and</b>                  All whole house ventilation requirements as determined by Section M1508 of the Washington State Residential Code shall be met with a heat recovery ventilation system in accordance with Section M1508.7 of that Code.</p>	0.5
4b	<p><b>ADDITIONAL AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION:</b>                  Envelope leakage reduced to SLA of 0.00015 building envelope tightness shall be considered acceptable when tested air leakage is less than specific leakage area of 0.00015 when tested with a blower door at a pressure difference of 50 PA. Testing shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation, and combustion appliances.</p> <p><b>and</b>                  All whole house ventilation requirements as determined by Section M1508 of the Washington State Residential Code shall be met with a heat recovery ventilation system in accordance with Section M1508.7 of that Code.</p>	1.0
5a	<p><b>EFFICIENT WATER HEATING:<sup>1</sup></b>                  Water heating system shall include one of the following:                  Gas, propane or oil water heater with a minimum EF of 0.62.</p> <p><b>or</b>                  Electric Water Heater with a minimum EF of 0.93.</p> <p><b>and for both cases</b>                  All showerhead and kitchen sink faucets installed in the house shall meet be rated at 1.75 GPM or less. All other lavatory faucets shall be rated at 1.0 GPM or less.<sup>2</sup></p>	0.5

5b	<p><b>HIGH EFFICIENCY WATER HEATING:<sup>1</sup></b>  Water heating system shall include one of the following:  Gas, propane or oil water heater with a minimum EF of 0.82.  <b>or</b>  Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems.  <b>or</b>  Electric heat pump water heater with a minimum EF of 2.0.</p>	1.5
6	<p><b>SMALL DWELLING UNIT 1:<sup>1</sup></b>  Dwelling units less than 1500 square feet in floor area with less than 300 square feet of window + door area. Additions to existing building that are less than 750 square feet of heated floor area.</p>	1.0
7	<p><b>LARGE DWELLING UNIT 1:<sup>1</sup></b>  Dwelling units exceeding 5000 square feet of floor area shall be assessed a deduction for purposes of complying with Section 901 of this Code.</p>	-1.0
8	<p><b>RENEWABLE ELECTRIC ENERGY:</b>  For each 1200 kWh of electrical generation provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 3 credits. Generation shall be calculated as follows:  For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculator PVWATTS. Documentation noting solar access shall be included on the plans.  For wind generation projects designs shall document annual power generation based on the following factors:  The wind turbine power curve; average annual wind speed at the site; frequency distribution of the wind speed at the site and height of the tower.</p>	0.5

## Footnotes:

1. **Interior Duct Placement:** Ducts included as Option 2 of Table 9-1 shall be placed wholly within the heated envelope of the housing unit. The placement shall be inspected and certified to receive the credits associated with this option.

EXCEPTION: Ducts complying with this section may have up to 5% of the total linear feet of ducts located in the exterior cavities or buffer spaces of the dwelling. If this exception is used the ducts will be tested to the following standards:

Post-construction test: Leakage to outdoors shall be less than or equal to 1 CFM per 100 ft<sup>2</sup> of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.

2. **Plumbing Fixtures Flow Ratings.** Low flow plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following requirements:

- (a) Residential bathroom lavatory sink faucets: Maximum flow rate - 3.8 L/min (1.0 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.
- (b) Residential kitchen faucets: Maximum flow rate - 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.
- (c) Residential showerheads: Maximum flow rate - 6.6 L/min (1.75 gal/min) when tested in accordance with ASME A112.18.1/CSA B125.1.