

HOUSE COMMITTEE OF REFERENCE REPORT

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Chairman of Committee

February 5, 2010  
Date

Committee on Transportation & Energy.

After consideration on the merits, the Committee recommends the following:

HB10-1001 be amended as follows, and as so amended, be referred to the Committee on Appropriations with favorable recommendation:

1 Amend printed bill, strike everything below the enacting clause and  
2 substitute:

3 "SECTION 1. The introductory portion to 40-2-124 (1) and  
4 40-2-124 (1) (a), (1) (c) (I), (1) (c) (II), (1) (c) (III), (1) (c) (IV), and (1)  
5 (c) (VIII), Colorado Revised Statutes, are amended to read:

6 **40-2-124. Renewable energy standard - definitions - net**  
7 **metering - legislative declaration.** (1) Each provider of retail electric  
8 service in the state of Colorado, other than municipally owned utilities  
9 that serve forty thousand customers or ~~less~~ FEWER, shall be considered a  
10 qualifying retail utility. Each qualifying retail utility, with the exception  
11 of cooperative electric associations that have voted to exempt themselves  
12 from commission jurisdiction pursuant to section 40-9.5-104 and  
13 municipally owned utilities, shall be subject to the rules established under  
14 this article by the commission. No additional regulatory authority of the  
15 commission other than that specifically contained in this section is  
16 provided or implied. In accordance with article 4 of title 24, C.R.S., ~~on~~  
17 ~~or before October 1, 2007~~, the commission shall revise or clarify existing  
18 rules to establish the following:

19 (a) Definitions of eligible energy resources that can be used to  
20 meet the standards. "Eligible energy resources" means recycled energy  
21 and renewable energy resources. ~~"Renewable energy resources" means~~

1 ~~solar, wind, geothermal, biomass, new hydroelectricity with a nameplate~~  
2 ~~rating of ten megawatts or less, and hydroelectricity in existence on~~  
3 ~~January 1, 2005, with a nameplate rating of thirty megawatts or less.~~ The  
4 commission shall determine, following an evidentiary hearing, the extent  
5 to which such electric generation technologies utilized in an optional  
6 pricing program may be used to comply with this standard. A fuel cell  
7 using hydrogen derived from an eligible energy resource is also an  
8 eligible electric generation technology. Fossil and nuclear fuels and their  
9 derivatives are not eligible energy resources. For purposes of this section:

10 (I) "Biomass" means:

11 (A) Nontoxic plant matter consisting of agricultural crops or their  
12 byproducts, urban wood waste, mill residue, slash, or brush;

13 (B) Animal wastes and products of animal wastes; or

14 (C) Methane produced at landfills or as a by-product of the  
15 treatment of wastewater residuals.

16 (II) "DISTRIBUTED RENEWABLE ELECTRIC GENERATION" OR  
17 "DISTRIBUTED GENERATION" MEANS:

18 (A) RETAIL DISTRIBUTED GENERATION; AND

19 (B) WHOLESALE DISTRIBUTED GENERATION.

20 (H) (III) "Recycled energy" means energy produced by a  
21 generation unit with a nameplate capacity of not more than fifteen  
22 megawatts that converts the otherwise lost energy from the heat from  
23 exhaust stacks or pipes to electricity and that does not combust additional  
24 fossil fuel. "Recycled energy" does not include energy produced by any  
25 system that uses energy, lost or otherwise, from a process whose primary  
26 purpose is the generation of electricity, including, without limitation, any  
27 process involving engine-driven generation or pumped hydroelectricity  
28 generation.

29 (IV) "RENEWABLE ENERGY RESOURCES" MEANS SOLAR, WIND,  
30 GEOTHERMAL, BIOMASS, NEW HYDROELECTRICITY WITH A NAMEPLATE  
31 RATING OF TEN MEGAWATTS OR LESS, AND HYDROELECTRICITY IN  
32 EXISTENCE ON JANUARY 1, 2005, WITH A NAMEPLATE RATING OF THIRTY  
33 MEGAWATTS OR LESS.

1 (V) "RETAIL DISTRIBUTED GENERATION" MEANS A RENEWABLE  
2 ENERGY RESOURCE THAT IS LOCATED ON THE SITE OF A CUSTOMER'S  
3 FACILITIES AND IS INTERCONNECTED ON THE CUSTOMER'S SIDE OF THE  
4 UTILITY METER. IN ADDITION, RETAIL DISTRIBUTED GENERATION SHALL  
5 PROVIDE ELECTRIC ENERGY PRIMARILY TO SERVE THE CUSTOMER'S LOAD  
6 AND SHALL BE SIZED TO SUPPLY NO MORE THAN ONE HUNDRED TWENTY  
7 PERCENT OF THE AVERAGE ANNUAL CONSUMPTION OF ELECTRICITY BY THE  
8 CUSTOMER AT THAT SITE. FOR PURPOSES OF THIS SUBPARAGRAPH (V), THE  
9 CUSTOMER'S "SITE" INCLUDES ALL CONTIGUOUS PROPERTY OWNED OR  
10 LEASED BY THE CUSTOMER WITHOUT REGARD TO INTERRUPTIONS IN  
11 CONTIGUITY CAUSED BY EASEMENTS, PUBLIC THOROUGHFARES,  
12 TRANSPORTATION RIGHTS-OF-WAY, OR UTILITY RIGHTS-OF-WAY.

13 (VI) "WHOLESALE DISTRIBUTED GENERATION" MEANS A  
14 RENEWABLE ENERGY RESOURCE IN COLORADO WITH A NAMEPLATE  
15 RATING OF THIRTY MEGAWATTS OR LESS AND THAT DOES NOT QUALIFY AS  
16 RETAIL DISTRIBUTED GENERATION.

17 (c) Electric resource standards:

18 (I) Except as provided in subparagraph (V) of this paragraph (c),  
19 the electric resource standards shall require each qualifying retail utility  
20 to generate, or cause to be generated, electricity from eligible energy  
21 resources in the following minimum amounts:

22 (A) Three percent of its retail electricity sales in Colorado for the  
23 year 2007;

24 (B) Five percent of its retail electricity sales in Colorado for the  
25 years 2008 through 2010;

26 (C) ~~Ten~~ TWELVE percent of its retail electricity sales in Colorado  
27 for the years 2011 through 2014, WITH DISTRIBUTED GENERATION  
28 EQUALING AT LEAST ONE PERCENT OF ITS RETAIL ELECTRICITY SALES IN  
29 2011 AND 2012 AND ONE AND ONE-FOURTH PERCENT OF ITS RETAIL  
30 ELECTRICITY SALES IN 2013 AND 2014;

31 (D) ~~Fifteen~~ TWENTY percent of its retail electricity sales in  
32 Colorado for the years 2015 through 2019, WITH DISTRIBUTED  
33 GENERATION EQUALING AT LEAST ONE AND THREE-FOURTHS PERCENT OF  
34 ITS RETAIL ELECTRICITY SALES IN 2015 AND 2016 AND TWO PERCENT OF  
35 ITS RETAIL ELECTRICITY SALES IN 2017, 2018, AND 2019; and

1 (E) ~~Twenty~~ THIRTY percent of its retail electricity sales in  
2 Colorado for the years 2020 and thereafter, WITH DISTRIBUTED  
3 GENERATION EQUALING AT LEAST THREE PERCENT OF ITS RETAIL  
4 ELECTRICITY SALES.

5 (II) (A) Of the amounts OF DISTRIBUTED GENERATION in  
6 SUB-SUBPARAGRAPHS (C), (D), AND (E) OF subparagraph (I) of this  
7 paragraph (c), at least ~~four percent shall be derived from solar electric~~  
8 ~~generation technologies. At least one-half of this four percent shall be~~  
9 ~~derived from solar electric technologies located on-site at customers'~~  
10 ~~facilities~~ RETAIL DISTRIBUTED GENERATION.

11 (B) Solar generating equipment located on-site at customers'  
12 facilities shall be sized to supply no more than one hundred twenty  
13 percent of the average annual consumption of electricity by the consumer  
14 at that site. For purposes of this sub-subparagraph (B), the consumer's  
15 "site" shall include all contiguous property owned or leased by the  
16 consumer, without regard to interruptions in contiguity caused by  
17 easements, public thoroughfares, transportation rights-of-way, or utility  
18 rights-of-way.

19 (C) DISTRIBUTED GENERATION AMOUNTS IN THE ELECTRIC  
20 RESOURCE STANDARD FOR THE YEARS 2015 AND THEREAFTER MAY BE  
21 CHANGED BY THE COMMISSION FOR THE PERIOD AFTER DECEMBER 31,  
22 2014, IF THE COMMISSION FINDS, UPON APPLICATION BY A QUALIFYING  
23 RETAIL UTILITY, THAT THESE PERCENTAGE REQUIREMENTS ARE NO LONGER  
24 IN THE PUBLIC INTEREST. IF SUCH A FINDING IS MADE, THE COMMISSION  
25 MAY SET THE LOWER DISTRIBUTED GENERATION REQUIREMENTS, IF ANY,  
26 THAT SHALL APPLY AFTER DECEMBER 31, 2014. IF THE COMMISSION FINDS  
27 THAT THE PUBLIC INTEREST REQUIRES AN INCREASE IN THE DISTRIBUTED  
28 GENERATION REQUIREMENTS, THE COMMISSION SHALL REPORT ITS  
29 FINDINGS TO THE GENERAL ASSEMBLY.

30 (III) Each kilowatt-hour of electricity generated from eligible  
31 energy resources in Colorado, OTHER THAN RETAIL DISTRIBUTED  
32 GENERATION, shall be counted as one and one-quarter kilowatt-hours for  
33 the purposes of compliance with this standard.

34 (IV) To the extent that the ability of a qualifying retail utility to  
35 acquire eligible energy resources is limited by a requirements contract  
36 with a wholesale electric supplier, the qualifying retail utility shall acquire  
37 the maximum amount allowed by the contract. For any shortfalls to the

1 amounts established by the commission pursuant to subparagraph (I) of  
2 this paragraph (c), the qualifying retail utility shall acquire an equivalent  
3 amount of either renewable energy credits; documented and verified  
4 energy savings through energy efficiency and conservation programs; or  
5 a combination of both. Any contract entered into by a qualifying retail  
6 utility after December 1, 2004, shall not conflict with this ~~article~~ SECTION.

7 (VIII) ~~Each kilowatt-hour of~~ Electricity from eligible energy  
8 resources ~~may take advantage of~~ SHALL BE SUBJECT TO only one of the  
9 methods for counting kilowatt-hours set forth in subparagraphs (III), (VI),  
10 and (VII) of this paragraph (c).

11 **SECTION 2.** The introductory portion to 40-2-124 (1) and  
12 40-2-124 (1) (e) (I), Colorado Revised Statutes, are amended, and the said  
13 40-2-124 (1) (e) is further amended BY THE ADDITION OF THE  
14 FOLLOWING NEW SUBPARAGRAPHS, to read:

15 **40-2-124. Renewable energy standard - definitions - net**  
16 **metering - legislative declaration.** (1) Each provider of retail electric  
17 service in the state of Colorado, other than municipally owned utilities  
18 that serve forty thousand customers or ~~less~~ FEWER, shall be considered a  
19 qualifying retail utility. Each qualifying retail utility, with the exception  
20 of cooperative electric associations that have voted to exempt themselves  
21 from commission jurisdiction pursuant to section 40-9.5-104 and  
22 municipally owned utilities, shall be subject to the rules established under  
23 this article by the commission. No additional regulatory authority of the  
24 commission other than that specifically contained in this section is  
25 provided or implied. In accordance with article 4 of title 24, C.R.S., ~~on~~  
26 ~~or before October 1, 2007~~, the commission shall revise or clarify existing  
27 rules to establish the following:

28 (e) A standard rebate offer program, under which:

29 (I) (A) Each qualifying retail utility, except for cooperative  
30 electric associations and municipally owned utilities, shall make available  
31 to its retail electricity customers a standard rebate offer of a ~~minimum of~~  
32 ~~two dollars~~ SPECIFIED AMOUNT per watt for the installation of eligible  
33 solar electric generation on customers' premises up to a maximum of one  
34 hundred kilowatts per installation.

35 (B) ~~Such~~ THE STANDARD REBATE offer shall allow the customer's  
36 retail electricity consumption to be offset by the solar electricity

1 generated. To the extent that solar electricity generation exceeds the  
2 customer's consumption during a billing month, such excess electricity  
3 shall be carried forward as a credit to the following month's consumption.  
4 To the extent that solar electricity generation exceeds the customer's  
5 consumption during a calendar year, the customer shall be reimbursed by  
6 the qualifying retail utility at its average hourly incremental cost of  
7 electricity supply over the prior twelve-month period unless the customer  
8 makes a one-time election, in writing, to request that the excess electricity  
9 be carried forward as a credit from month to month indefinitely until the  
10 customer terminates service with the qualifying retail utility, at which  
11 time no payment shall be required from the qualifying retail utility for any  
12 remaining excess electricity supplied by the customer. The qualifying  
13 retail utility shall not apply unreasonably burdensome interconnection  
14 requirements in connection with this standard rebate offer. Electricity  
15 generated under this program shall be eligible for the qualifying retail  
16 utility's compliance with this article.

17 (I.5) THE AMOUNT OF THE STANDARD REBATE OFFER SHALL BE  
18 TWO DOLLARS PER WATT; EXCEPT THAT THE COMMISSION MAY SET THE  
19 REBATE AT A LOWER AMOUNT IF THE COMMISSION DETERMINES, BASED  
20 UPON A QUALIFYING RETAIL UTILITY'S RENEWABLE RESOURCE PLAN OR  
21 APPLICATION, THAT MARKET CHANGES SUPPORT THE CHANGE.

22 **SECTION 3.** The introductory portion to 40-2-124 (1) and  
23 40-2-124 (1) (f) (IV), (1) (g) (I), (1) (g) (III), (1) (g) (IV), and (1) (i),  
24 Colorado Revised Statutes, are amended, and the said 40-2-124 (1) (f) is  
25 further amended BY THE ADDITION OF A NEW SUBPARAGRAPH,  
26 to read:

27 **40-2-124. Renewable energy standard - definitions - net**  
28 **metering - legislative declaration.** (1) Each provider of retail electric  
29 service in the state of Colorado, other than municipally owned utilities  
30 that serve forty thousand customers or ~~less~~ FEWER, shall be considered a  
31 qualifying retail utility. Each qualifying retail utility, with the exception  
32 of cooperative electric associations that have voted to exempt themselves  
33 from commission jurisdiction pursuant to section 40-9.5-104 and  
34 municipally owned utilities, shall be subject to the rules established under  
35 this article by the commission. No additional regulatory authority of the  
36 commission other than that specifically contained in this section is  
37 provided or implied. In accordance with article 4 of title 24, C.R.S., ~~on~~  
38 ~~or before October 1, 2007~~, the commission shall revise or clarify existing  
39 rules to establish the following:

1 (f) Policies for the recovery of costs incurred with respect to these  
2 standards for qualifying retail utilities that are subject to rate regulation  
3 by the commission. These policies shall provide incentives to qualifying  
4 retail utilities to invest in eligible energy resources in the state of  
5 Colorado. Such policies shall include:

6 (IV) Considering, when the qualifying retail utility applies for a  
7 certificate of public convenience and necessity under section 40-5-101,  
8 rate recovery mechanisms that provide for earlier and timely recovery of  
9 costs prudently and reasonably incurred by the qualifying retail utility in  
10 developing, constructing, and operating the eligible energy resource,  
11 including:

12 (A) Rate adjustment clauses until the costs of the eligible energy  
13 resource can be included in the utility's base rates; and

14 (B) A current return on the utility's capital expenditures during  
15 construction at the utility's weighted average cost of capital, including its  
16 most recently authorized rate of return on equity, during the construction,  
17 startup, and operation phases of the eligible energy resource;

18 (VII) A REQUIREMENT THAT ALL DISTRIBUTED RENEWABLE  
19 ELECTRIC GENERATION FACILITIES WITH A NAMEPLATE RATING OF ONE  
20 MEGAWATT OR MORE BE REGISTERED WITH A RENEWABLE ENERGY  
21 GENERATION INFORMATION TRACKING SYSTEM DESIGNATED BY THE  
22 COMMISSION.

23 (g) Retail rate impact rule:

24 (I) (A) Except as otherwise provided in subparagraph (IV) of this  
25 paragraph (g), for each qualifying utility, the commission shall establish  
26 a maximum retail rate impact for this section of two percent of the total  
27 electric bill annually for each customer. The retail rate impact shall be  
28 determined net of new alternative sources of electricity supply from  
29 noneligible energy resources that are reasonably available at the time of  
30 the determination.

31 (B) If the retail rate impact does not exceed the maximum impact  
32 permitted by this paragraph (g), the qualifying utility may acquire more  
33 than the minimum amount of eligible energy resources and renewable  
34 energy credits required by this section. AT THE REQUEST OF THE  
35 QUALIFYING RETAIL UTILITY AND UPON THE COMMISSION'S APPROVAL, THE

1 QUALIFYING RETAIL UTILITY MAY ADVANCE FUNDS FROM YEAR TO YEAR  
2 TO AUGMENT THE AMOUNTS COLLECTED FROM RETAIL CUSTOMERS UNDER  
3 THIS PARAGRAPH (g) FOR THE ACQUISITION OF MORE ELIGIBLE ENERGY  
4 RESOURCES. SUCH FUNDS SHALL BE REPAID FROM FUTURE RETAIL RATE  
5 COLLECTIONS, WITH INTEREST CALCULATED AT THE QUALIFYING RETAIL  
6 UTILITY'S AFTER-TAX WEIGHTED AVERAGE COST OF CAPITAL, SO LONG AS  
7 THE RETAIL RATE IMPACT DOES NOT EXCEED TWO PERCENT OF THE TOTAL  
8 ANNUAL ELECTRIC BILL FOR EACH CUSTOMER.

9 (C) AS BETWEEN RESIDENTIAL AND NONRESIDENTIAL RETAIL  
10 DISTRIBUTED GENERATION, THE COMMISSION SHALL DIRECT THE UTILITY  
11 TO ALLOCATE ITS EXPENDITURES ACCORDING TO THE PROPORTION OF THE  
12 UTILITY'S REVENUE DERIVED FROM EACH OF THESE CUSTOMER GROUPS;  
13 EXCEPT THAT THE UTILITY MAY ACQUIRE RETAIL DISTRIBUTED  
14 GENERATION AT LEVELS THAT DIFFER FROM THESE GROUP ALLOCATIONS  
15 BASED UPON MARKET RESPONSE TO THE UTILITY'S PROGRAMS.

16 (III) Subject to the maximum retail rate impact permitted by this  
17 paragraph (g), the qualifying retail utility shall have the discretion to  
18 determine, in a nondiscriminatory manner, the price it will pay for  
19 renewable energy credits from on-site customer facilities that are no  
20 larger than ~~one~~ FIVE hundred kilowatts.

21 (IV) (A) For cooperative electric associations, the maximum retail  
22 rate impact for this section is one percent of the total electric bill annually  
23 for each customer.

24 (B) NOTWITHSTANDING SUBPARAGRAPH (I) OF THIS PARAGRAPH  
25 (g), THE COMMISSION MAY ENSURE THAT CUSTOMERS WHO INSTALL  
26 DISTRIBUTED GENERATION CONTINUE TO CONTRIBUTE, IN A  
27 NONDISCRIMINATORY FASHION, THEIR FAIR SHARE TO THEIR UTILITY'S  
28 RENEWABLE ENERGY PROGRAM FUND OR EQUIVALENT RENEWABLE  
29 ENERGY SUPPORT MECHANISM EVEN IF SUCH CONTRIBUTION RESULTS IN A  
30 CHARGE THAT EXCEEDS TWO PERCENT OF SUCH CUSTOMERS' ANNUAL  
31 ELECTRIC BILLS.

32 (i) Rules necessary for the administration of this article including  
33 enforcement mechanisms necessary to ensure that each qualifying retail  
34 utility complies with this standard, and provisions governing the  
35 imposition of administrative penalties assessed after a hearing held by the  
36 commission pursuant to section 40-6-109. The commission shall exempt  
37 a qualifying retail utility from administrative penalties for an individual



1 compliance year if the utility demonstrates that the retail rate impact cap  
2 described in paragraph (g) of this subsection (1) has been reached and the  
3 utility has not achieved full compliance with paragraph (c) of this  
4 subsection (1). THE QUALIFYING RETAIL UTILITY'S ACTIONS UNDER AN  
5 APPROVED COMPLIANCE PLAN SHALL CARRY A REBUTTABLE PRESUMPTION  
6 OF PRUDENCE. Under no circumstances shall the costs of administrative  
7 penalties be recovered from Colorado retail customers.

8           **SECTION 4.** Article 2 of title 40, Colorado Revised Statutes, is  
9 amended BY THE ADDITION OF THE FOLLOWING NEW  
10 SECTIONS to read:

11           **40-2-128. Solar photovoltaic installations - supervision by**  
12 **certified practitioners - qualifications of electrical contractors.**  
13 (1) EFFECTIVE JANUARY 1, 2012, FOR ALL PHOTOVOLTAIC INSTALLATIONS  
14 FUNDED WHOLLY OR PARTIALLY THROUGH RATEPAYER-FUNDED  
15 INCENTIVES AS PART OF THE RENEWABLE ENERGY STANDARD ADJUSTMENT  
16 ALLOWED UNDER SECTION 40-2-124:

17           (a) (I) THE PERFORMANCE OF ALL PHOTOVOLTAIC ELECTRICAL  
18 WORK, THE INSTALLATION OF PHOTOVOLTAIC MODULES, AND THE  
19 INSTALLATION OF PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT SHALL  
20 BE SUBJECT TO ON-SITE SUPERVISION BY A CERTIFIED PHOTOVOLTAIC  
21 ENERGY PRACTITIONER AS DESIGNATED BY THE NORTH AMERICAN BOARD  
22 OF CERTIFIED ENERGY PRACTITIONERS (NABCEP) OR ANOTHER  
23 NATIONALLY RECOGNIZED PROFESSIONAL ORGANIZATION DESIGNATED BY  
24 THE COLORADO STATE ELECTRICAL BOARD BY RULE. UPON THE INITIAL  
25 APPLICATION FOR FUNDING OR IN THE INITIAL CONTRACT PROPOSAL, THE  
26 APPLICANT SHALL ASSUME RESPONSIBILITY FOR EMPLOYING OR  
27 CONTRACTING WITH ONE OR MORE CERTIFIED ENERGY PRACTITIONERS TO  
28 SUPERVISE THE INSTALLATION AND AS NECESSARY TO MAINTAIN THE  
29 THREE-TO-ONE RATIO REQUIRED BY PARAGRAPHS (b) AND (c) OF THIS  
30 SUBSECTION (1), INCLUDING DURING ANY OFF-SITE, PRE-INSTALLATION  
31 ASSEMBLY. APPROVAL OF THE PAYMENT OF ANY INCENTIVES FOR THE  
32 WORK SHALL BE CONDITIONED UPON THE APPLICANT'S SUPPLYING THE  
33 NAME AND CERTIFICATION NUMBER OF EACH CERTIFIED ENERGY  
34 PRACTITIONER WHO ACTUALLY PROVIDED ON-SITE SUPERVISION OR WAS  
35 PRESENT TO MAINTAIN THE THREE-TO-ONE RATIO REQUIRED BY  
36 PARAGRAPHS (c) AND (d) OF THIS SUBSECTION (1).

37           (II) NEITHER THE COMMISSION NOR THE UTILITY SHALL HAVE  
38 RESPONSIBILITY FOR MONITORING OR ENFORCING COMPLIANCE WITH THIS

1 SECTION. IT SHALL BE THE RESPONSIBILITY OF THE APPLICANT TO OBTAIN  
2 THE INFORMATION REQUIRED BY SUBPARAGRAPH (I) OF THIS PARAGRAPH  
3 (a), AND IT SHALL BE THE RESPONSIBILITY OF THE QUALIFYING RETAIL  
4 UTILITY TO OBTAIN FROM THE APPLICANT AND RETAIN, FOR AT LEAST ONE  
5 YEAR AFTER COMPLETION OF THE INSTALLATION, COPIES OF ALL  
6 DOCUMENTATION SUBMITTED BY THE APPLICANT IN CONNECTION WITH  
7 THE INSTALLATION.

8 (b) ALL WORK PERFORMED ON THE ALTERNATING-CURRENT SIDE  
9 OF THE INVERTER WILL BE PERFORMED BY AN ELECTRICAL CONTRACTOR  
10 WHO EMPLOYS A LICENSED JOURNEYMAN ELECTRICIAN OR A LICENSED  
11 RESIDENTIAL WIREMAN WHO WILL PERFORM THE WORK. ALL ELECTRICAL  
12 WORK THAT PERTAINS TO ARTICLE 23 OF TITLE 12, C.R.S., WILL BE  
13 PERFORMED BY AN ELECTRICAL APPRENTICE REGISTERED WITH THE  
14 APPROPRIATE STATE REGULATORY AGENCY, A LICENSED JOURNEYMAN  
15 ELECTRICIAN, OR A LICENSED RESIDENTIAL WIREMAN. THE APPROPRIATE  
16 RATIO OF NO LESS THAN ONE JOURNEYMAN OR RESIDENTIAL WIREMAN FOR  
17 EVERY THREE ELECTRICAL APPRENTICES WILL BE MAINTAINED.

18 (c) ON A SYSTEM WITH A DIRECT CURRENT DESIGN CAPACITY OF  
19 MORE THAN FIVE HUNDRED KILOWATTS:

20 (I) DURING ANY PHOTOVOLTAIC ELECTRICAL WORK, THE RATIO OF  
21 THE NUMBER OF PERSONS WHO ARE ASSISTING WITH THE WORK AND WHO  
22 ARE NEITHER LICENSED ELECTRICIANS NOR REGISTERED ELECTRICAL  
23 APPRENTICES TO THE NUMBER OF PERSONS WHO ARE CERTIFIED AS  
24 PROVIDED IN PARAGRAPH (a) OF THIS SUBSECTION (1) SHALL NEVER  
25 EXCEED THREE TO ONE, AND A PERSON WHO IS BOTH LICENSED AND  
26 CERTIFIED SHALL NOT COUNT DOUBLE FOR PURPOSES OF MEASURING THIS  
27 RATIO; AND

28 (II) THERE SHALL BE AT LEAST ONE ON-SITE SUPERVISOR WHO IS  
29 CERTIFIED AS PROVIDED IN PARAGRAPH (a) OF THIS SUBSECTION (1)  
30 DURING THE FOLLOWING STAGES; EXCEPT THAT, IF AT ANY TIME DURING  
31 ANY OF THE FOLLOWING STAGES, THERE ARE MORE THAN TWELVE PERSONS  
32 ON THE WORK SITE WHO ARE NEITHER LICENSED ELECTRICIANS NOR  
33 REGISTERED ELECTRICAL APPRENTICES AND WHO ARE NOT CERTIFIED AS  
34 PROVIDED IN PARAGRAPH (a) OF THIS SUBSECTION (1), THERE SHALL BE AT  
35 LEAST TWO PERSONS WHO ARE CERTIFIED AS PROVIDED IN PARAGRAPH (a)  
36 OF THIS SUBSECTION (1) PRESENT ON THE WORK SITE AND PROVIDING  
37 DIRECT SUPERVISION:

1 (A) THE INSTALLATION OF PHOTOVOLTAIC MODULES;

2 (B) THE INSTALLATION OF PHOTOVOLTAIC MODULE MOUNTING  
3 EQUIPMENT; AND

4 (C) ANY PHOTOVOLTAIC ELECTRICAL WORK.

5 (d) ON A SYSTEM WITH A DIRECT CURRENT DESIGN CAPACITY OF  
6 FIVE HUNDRED KILOWATTS OR LESS:

7 (I) THE RATIO OF THE NUMBER OF PERSONS WHO ARE ASSISTING  
8 WITH THE WORK AND WHO ARE NEITHER LICENSED ELECTRICIANS NOR  
9 REGISTERED ELECTRICAL APPRENTICES TO THE NUMBER OF PERSONS WHO  
10 ARE CERTIFIED AS PROVIDED IN PARAGRAPH (a) OF THIS SUBSECTION (1)  
11 SHALL NEVER EXCEED THREE TO ONE, AND A PERSON WHO IS BOTH  
12 LICENSED AND CERTIFIED SHALL NOT COUNT DOUBLE FOR PURPOSES OF  
13 MEASURING THIS RATIO, DURING THE FOLLOWING STAGES:

14 (A) THE INSTALLATION OF PHOTOVOLTAIC MODULES;

15 (B) THE INSTALLATION OF PHOTOVOLTAIC MODULE MOUNTING  
16 EQUIPMENT; AND

17 (C) ANY PHOTOVOLTAIC ELECTRICAL WORK; AND

18 (II) THERE SHALL BE, AT ALL TIMES, AT LEAST ONE ON-SITE  
19 SUPERVISOR WHO IS CERTIFIED AS PROVIDED IN PARAGRAPH (a) OF THIS  
20 SUBSECTION (1).

21 (2) AS USED IN THIS SECTION, UNLESS THE CONTEXT OTHERWISE  
22 REQUIRES:

23 (a) (I) "PHOTOVOLTAIC ELECTRICAL WORK" MEANS WIRING,  
24 GROUNDING, OR REPAIRING ELECTRICAL APPARATUS AND EQUIPMENT IN  
25 A PHOTOVOLTAIC DISTRIBUTED GENERATION SYSTEM.

26 (II) "PHOTOVOLTAIC ELECTRICAL WORK" INCLUDES THE  
27 PRE-INSTALLATION ASSEMBLY OF PHOTOVOLTAIC MODULES TO  
28 PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT FOR INSTALLATION  
29 ON-SITE.

1 (III) "PHOTOVOLTAICELECTRICAL WORK" DOES NOT INCLUDE SITE  
2 PREPARATION, TRENCHING OR EXCAVATING, HAULING, OR OTHER WORK  
3 THAT IS NOT SPECIFICALLY DESCRIBED IN SUBPARAGRAPH (I) OR (II) OF  
4 THIS PARAGRAPH (a).

5 (b) "PHOTOVOLTAIC MODULE" MEANS THE MODULE OR PANEL  
6 THAT GENERATES ELECTRICITY THROUGH A PHOTOVOLTAIC PROCESS.

7 (c) "PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT" MEANS THE  
8 RACKING, MOUNTING, APPARATUS, EQUIPMENT, OR STRUCTURE THAT  
9 PHYSICALLY SUPPORTS AND SECURES ONE OR MORE PHOTOVOLTAIC  
10 MODULES IN PLACE OR TO A ROOF, WALL, FOUNDATION, OR PEDESTAL.

11 **40-2-129. New resource acquisitions - factors in determination**  
12 **- local employment - "best value" metrics.** WHEN EVALUATING  
13 ELECTRIC RESOURCE ACQUISITIONS, THE COMMISSION SHALL CONSIDER, ON  
14 A QUALITATIVE BASIS, FACTORS THAT AFFECT EMPLOYMENT AND THE  
15 LONG-TERM ECONOMIC VIABILITY OF COLORADO COMMUNITIES. TO THIS  
16 END, THE COMMISSION SHALL REQUIRE UTILITIES TO REQUEST THE  
17 FOLLOWING INFORMATION REGARDING "BEST VALUE" EMPLOYMENT  
18 METRICS: THE AVAILABILITY OF TRAINING PROGRAMS, INCLUDING  
19 TRAINING THROUGH APPRENTICESHIP PROGRAMS REGISTERED WITH THE  
20 UNITED STATES DEPARTMENT OF LABOR, OFFICE OF APPRENTICESHIP AND  
21 TRAINING; EMPLOYMENT OF COLORADO WORKERS AS COMPARED TO  
22 IMPORTATION OF OUT-OF-STATE WORKERS; LONG-TERM CAREER  
23 OPPORTUNITIES; AND INDUSTRY- STANDARD WAGES, HEALTH CARE, AND  
24 PENSION BENEFITS. WHEN A UTILITY PROPOSES TO CONSTRUCT NEW  
25 FACILITIES OF ITS OWN, THE UTILITY SHALL SUPPLY SIMILAR INFORMATION  
26 TO THE COMMISSION.

27 **SECTION 5.** Article 38.5 of title 24, Colorado Revised Statutes,  
28 is amended BY THE ADDITION OF A NEW SECTION to read:

29 **24-38.5-104. Photovoltaic installer qualifications - cooperation**  
30 **with department of regulatory agencies.** (1) EFFECTIVE JULY 1, 2011,  
31 ALL PHOTOVOLTAIC INSTALLATIONS FUNDED WHOLLY OR PARTIALLY  
32 THROUGH STATE OR FEDERAL GRANTS, INCLUDING GRANTS UNDER THE  
33 FEDERAL "AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009",  
34 PUB.L. 111-5, SHALL BE SUBJECT TO THE REQUIREMENTS SET FORTH IN  
35 SECTION 40-2-128, C.R.S.

1 (2) IF THE GOVERNOR, BY EXECUTIVE ORDER, APPOINTS A  
2 COMMITTEE TO STUDY THE DESIRABILITY OF CREDENTIALING OF SOLAR  
3 INSTALLERS, THE COMMITTEE, OR THE GOVERNOR'S ENERGY OFFICE ON THE  
4 COMMITTEE'S BEHALF, IS SPECIFICALLY AUTHORIZED TO SUBMIT A  
5 PROPOSAL FOR SUCH CREDENTIALING TO THE DEPARTMENT OF  
6 REGULATORY AGENCIES PURSUANT TO SECTION 24-34-104.1 (2). IN  
7 ADDITION, THE COMMITTEE MAY STUDY AND MAKE RECOMMENDATIONS  
8 CONCERNING THE SCOPE-OF-WORK PROVISIONS OF SECTION 40-2-128,  
9 SPECIFICALLY INCLUDING ENFORCEMENT OF THE SUPERVISION AND  
10 WORKER RATIO REQUIREMENTS OF SECTION 40-2-128 (1) (c) AND (1) (d).

11 **SECTION 6.** 24-38.7-104, Colorado Revised Statutes, is  
12 amended BY THE ADDITION OF A NEW SUBSECTION to read:

13 **24-38.7-104. Program administrator - training and**  
14 **certification of contractors - reporting.** (2.5) (a) EFFECTIVE JULY 1,  
15 2011, THE ISSUANCE OF A CLEAN ENERGY LOAN UNDER THIS ARTICLE FOR  
16 THE INSTALLATION OF SOLAR PHOTOVOLTAIC EQUIPMENT SHALL BE  
17 CONDITIONED UPON THE BORROWER'S CERTIFICATION THAT:

18 (I) THE PERFORMANCE OF ALL PHOTOVOLTAIC ELECTRICAL WORK,  
19 THE INSTALLATION OF PHOTOVOLTAIC MODULES, AND THE INSTALLATION  
20 OF PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT SHALL BE SUBJECT TO  
21 ON-SITE SUPERVISION BY A CERTIFIED PHOTOVOLTAIC ENERGY  
22 PRACTITIONER AS DESIGNATED BY THE NORTH AMERICAN BOARD OF  
23 CERTIFIED ENERGY PRACTITIONERS (NABCEP) OR ANOTHER NATIONALLY  
24 RECOGNIZED PROFESSIONAL ORGANIZATION DESIGNATED BY THE  
25 COLORADO STATE ELECTRICAL BOARD BY RULE. UPON THE INITIAL  
26 APPLICATION FOR FUNDING OR IN THE INITIAL CONTRACT PROPOSAL, THE  
27 APPLICANT SHALL ASSUME RESPONSIBILITY FOR EMPLOYING OR  
28 CONTRACTING WITH ONE OR MORE CERTIFIED ENERGY PRACTITIONERS TO  
29 SUPERVISE THE INSTALLATION AND AS NECESSARY TO MAINTAIN THE  
30 THREE-TO-ONE RATIO REQUIRED BY SUBPARAGRAPHS (II) AND (III) OF THIS  
31 PARAGRAPH (a), INCLUDING DURING ANY OFF-SITE, PRE-INSTALLATION  
32 ASSEMBLY. FINAL PAYMENT FOR THE WORK SHALL BE CONDITIONED UPON  
33 THE APPLICANT'S SUPPLYING THE NAME AND CERTIFICATION NUMBER OF  
34 EACH CERTIFIED ENERGY PRACTITIONER WHO ACTUALLY PROVIDED  
35 ON-SITE SUPERVISION OR WAS PRESENT TO MAINTAIN THE THREE-TO-ONE  
36 RATIO REQUIRED BY SUBPARAGRAPHS (III) AND (IV) OF THIS SUBSECTION  
37 (1).

1 (II) ALL WORK PERFORMED ON THE ALTERNATING-CURRENT SIDE  
2 OF THE INVERTER WILL BE PERFORMED BY AN ELECTRICAL CONTRACTOR  
3 WHO EMPLOYS A LICENSED JOURNEYMAN ELECTRICIAN OR A LICENSED  
4 RESIDENTIAL WIREMAN WHO WILL PERFORM THE WORK. ALL ELECTRICAL  
5 WORK THAT PERTAINS TO ARTICLE 23 OF TITLE 12, C.R.S., WILL BE  
6 PERFORMED BY AN ELECTRICAL APPRENTICE REGISTERED WITH THE  
7 APPROPRIATE STATE REGULATORY AGENCY, A LICENSED JOURNEYMAN  
8 ELECTRICIAN, OR A LICENSED RESIDENTIAL WIREMAN. THE APPROPRIATE  
9 RATIO OF NO LESS THAN ONE JOURNEYMAN OR RESIDENTIAL WIREMAN FOR  
10 EVERY THREE ELECTRICAL APPRENTICES WILL BE MAINTAINED.

11 (III) ON A SYSTEM WITH A DIRECT CURRENT DESIGN CAPACITY OF  
12 MORE THAN FIVE HUNDRED KILOWATTS:

13 (A) DURING ANY PHOTOVOLTAIC ELECTRICAL WORK, THE RATIO OF  
14 THE NUMBER OF PERSONS WHO ARE ASSISTING WITH THE WORK AND WHO  
15 ARE NEITHER LICENSED ELECTRICIANS NOR REGISTERED ELECTRICAL  
16 APPRENTICES TO THE NUMBER OF PERSONS WHO ARE CERTIFIED AS  
17 PROVIDED IN SUBPARAGRAPH (I) OF THIS PARAGRAPH (a) SHALL NEVER  
18 EXCEED THREE TO ONE, AND A PERSON WHO IS BOTH LICENSED AND  
19 CERTIFIED SHALL NOT COUNT DOUBLE FOR PURPOSES OF MEASURING THIS  
20 RATIO; AND

21 (B) THERE SHALL BE AT LEAST ONE ON-SITE SUPERVISOR WHO IS  
22 CERTIFIED AS PROVIDED IN SUBPARAGRAPH (I) OF THIS PARAGRAPH (a)  
23 DURING THE INSTALLATION OF PHOTOVOLTAIC MODULES, THE  
24 INSTALLATION OF PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT, AND  
25 ANY PHOTOVOLTAIC ELECTRICAL WORK; EXCEPT THAT, IF AT ANY TIME  
26 DURING ANY OF THESE STAGES, THERE ARE MORE THAN TWELVE PERSONS  
27 ON THE WORK SITE WHO ARE NEITHER LICENSED ELECTRICIANS NOR  
28 REGISTERED ELECTRICAL APPRENTICES AND WHO ARE NOT CERTIFIED AS  
29 PROVIDED IN SUBPARAGRAPH (I) OF THIS PARAGRAPH (a), THERE SHALL BE  
30 AT LEAST TWO PERSONS WHO ARE CERTIFIED AS PROVIDED IN  
31 SUBPARAGRAPH (I) OF THIS PARAGRAPH (a) PRESENT ON THE WORK SITE  
32 AND PROVIDING DIRECT SUPERVISION:

33 (IV) ON A SYSTEM WITH A DIRECT CURRENT DESIGN CAPACITY OF  
34 FIVE HUNDRED KILOWATTS OR LESS:

35 (A) DURING THE INSTALLATION OF PHOTOVOLTAIC MODULES, THE  
36 INSTALLATION OF PHOTOVOLTAIC MODULE MOUNTING EQUIPMENT, AND  
37 ANY PHOTOVOLTAIC ELECTRICAL WORK, THE RATIO OF THE NUMBER OF

1 PERSONS WHO ARE ASSISTING WITH THE WORK AND WHO ARE NEITHER  
2 LICENSED ELECTRICIANS NOR REGISTERED ELECTRICAL APPRENTICES TO  
3 THE NUMBER OF PERSONS WHO ARE CERTIFIED AS PROVIDED IN PARAGRAPH  
4 (a) OF THIS SUBSECTION (1) SHALL NEVER EXCEED THREE TO ONE, AND A  
5 PERSON WHO IS BOTH LICENSED AND CERTIFIED SHALL NOT COUNT DOUBLE  
6 FOR PURPOSES OF MEASURING THIS RATIO; AND

7 (B) THERE SHALL BE, AT ALL TIMES, AT LEAST ONE ON-SITE  
8 SUPERVISOR WHO IS CERTIFIED AS PROVIDED IN SUBPARAGRAPH (I) OF THIS  
9 PARAGRAPH (a).

10 (b) AS USED IN THIS SUBSECTION (2.5), THE TERMS  
11 "PHOTOVOLTAIC ELECTRICAL WORK" AND "PHOTOVOLTAIC MODULE  
12 MOUNTING EQUIPMENT" SHALL HAVE THE MEANINGS SET FORTH IN  
13 SECTION 40-2-128, C.R.S.

14 **SECTION 7.** 40-2-109.5, Colorado Revised Statutes, is amended  
15 BY THE ADDITION OF A NEW SUBSECTION to read:

16 **40-2-109.5. Incentives for distributed generation - definition.**

17 (3) EFFECTIVE JANUARY 1, 2012, ALL PHOTOVOLTAIC INSTALLATIONS  
18 FUNDED WHOLLY OR PARTIALLY THROUGH FINANCIAL INCENTIVES UNDER  
19 THIS SECTION SHALL BE SUBJECT TO THE REQUIREMENTS SET FORTH IN  
20 SECTION 40-2-128.

21 **SECTION 8. Act subject to petition - effective date.** This act  
22 shall take effect at 12:01 a.m. on the day following the expiration of the  
23 ninety-day period after final adjournment of the general assembly (August  
24 11, 2010, if adjournment sine die is on May 12, 2010); except that, if a  
25 referendum petition is filed pursuant to section 1 (3) of article V of the  
26 state constitution against this act or an item, section, or part of this act  
27 within such period, then the act, item, section, or part shall not take effect  
28 unless approved by the people at the general election to be held in  
29 November 2010 and shall take effect on the date of the official  
30 declaration of the vote thereon by the governor."

31 Page 1, line 106, strike "FIVE" and substitute "THREE".

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