

## Renewable Energy Requirement

### 1     **The proposed amendment to the Colorado Revised Statutes:**

- 2           ♦ requires certain Colorado utilities to generate or purchase a portion of their  
3           electric power from renewable energy resources beginning in 2007;
- 4           ♦ defines the renewable energy resources that may be used to meet the  
5           requirement;
- 6           ♦ limits the amount that an average residential electric bill can increase as a  
7           result of the requirement to 50 cents per month;
- 8           ♦ provides financial incentives to certain customers and utilities to invest in  
9           renewable energy; and
- 10          ♦ allows a utility to hold an election to either exempt or include itself in the  
11          renewable energy requirement.

### 12     **Background**

13           Colorado is served by 60 utilities that generate electricity using primarily coal,  
14           natural gas, and hydroelectric power. Colorado utilities are not required to use  
15           renewable energy sources to generate electricity; however, roughly 2 percent of  
16           electricity currently generated in Colorado comes from the renewable energy sources  
17           defined in this proposal. To date, 16 other states have adopted renewable energy  
18           requirements. The maximum amount and source of the renewable energy vary by state,  
19           ranging from 1.1 percent of the total electricity generated in Arizona (mostly solar) to  
20           30 percent in Maine (mostly hydroelectric).

21           The proposal requires Colorado utilities with 40,000 or more customers to  
22           generate or purchase a percentage of their electricity from renewable sources according  
23           to the following schedule:

- 24           • 3 percent from 2007 through 2010;
- 25           • 6 percent from 2011 through 2014; and
- 26           • 10 percent by 2015 and thereafter.

27           Of the electricity generated each year from renewable sources, at least 4 percent must  
28           come from solar technologies. Initially, seven Colorado utilities serving about 80 percent  
29           of the state's electric customers will be required to comply with this proposal.

1           **Eligible sources of renewable energy.** Utilities may use a variety of renewable  
2 energy sources to satisfy the new requirement. These are: wind; solar; geothermal heat,  
3 such as underground reservoirs of steam or hot water; biomass facilities that burn  
4 nontoxic plants, methane from landfills, or animal waste; small hydroelectric power  
5 stations; and hydrogen fuel cells.

6           **Financial incentives.** Under the proposal, utility customers may earn a rebate  
7 for installing solar electric generation equipment on their property. Any electricity  
8 generated from the solar equipment in excess of the customer's annual use may be sold  
9 to the utility. In addition, for-profit utilities may earn extra profit and bonuses if their  
10 investment in renewable energy technologies reduces the retail cost of electricity to their  
11 customers.

12           **Tradeable renewable energy credit system.** A system of tradeable renewable  
13 energy credits will allow utilities that do not generate the required amount of electricity  
14 from renewable energy sources to purchase "credits" from those utilities that exceed the  
15 requirement.

16           **Procedure for exemption and inclusion.** Utilities subject to the proposal may  
17 hold elections to exempt themselves from the renewable energy requirement. Similarly,  
18 utilities not subject to the requirement may hold elections to be included. At least  
19 25 percent of the utility's customers must vote on the issue of exemption or inclusion,  
20 with a majority vote required for passage. In addition, a municipally-owned utility or a  
21 rural electric cooperative may develop a similar renewable energy requirement and be  
22 exempted from this proposal.

23           **Role of the Colorado Public Utilities Commission.** For purposes of  
24 implementing the new renewable energy requirements, the Public Utilities Commission  
25 will regulate some utilities it currently does not. The Commission must adopt rules to  
26 implement this proposal.

## 27   **Arguments For**

28           1) Using renewable energy makes economic sense. Conventional fuels are finite,  
29 while renewable energy sources are unlimited. As time passes, supplies of coal and  
30 natural gas will diminish and these resources will become more expensive. In contrast,  
31 the price of renewable energy will decrease as technologies improve. Generating a  
32 percentage of electricity from renewable resources contributes to energy diversity and  
33 reduces Colorado's vulnerability to fluctuations in the price or supply of fuel.

1           2) Electricity generated from renewable sources has lesser harmful environmental  
2 impacts than electricity generated from conventional fuels. The environmental benefits  
3 of using renewable energy include cleaner air and water, more efficient use of water, and  
4 less damage to the landscape. Both coal and natural gas-fired power plants emit  
5 significant amounts of air pollutants. According to Environmental Protection Agency  
6 calculations, generating 10 percent of electricity from renewable sources is roughly equal  
7 to eliminating the air emissions from 600,000 cars annually.

8           3) Using a variety of resources to meet Colorado's increasing electricity needs  
9 will improve the stability and security of Colorado's electricity supply. Increasing  
10 Colorado's use of renewable energy will reduce its dependence on conventional fuels.  
11 The state must prepare for the future by requiring a percentage of its electricity to be  
12 generated from renewable resources.

13           4) Renewable energy facilities, typically located in rural areas, boost rural  
14 economies. The construction and maintenance of renewable energy facilities will create  
15 jobs in rural Colorado. Farmers and ranchers will be able to tap into a new source of  
16 income by using agricultural waste to generate electricity, and by leasing their land for  
17 wind facilities. In addition, renewable energy facilities provide tax revenues that can be  
18 used by counties to pay for local services.

## 19   **Arguments Against**

20           1) Colorado utilities with over 40,000 customers will be required to generate  
21 electricity from renewable resources, regardless of cost. Currently, utilities generate  
22 electricity using the least expensive fuel source. Electricity generated from renewable  
23 resources is oftentimes more expensive than electricity generated from conventional  
24 fuels. For example, the proposal requires at least 4 percent of renewable energy to come  
25 from solar sources, the most expensive renewable energy source. The proposal also  
26 prohibits utilities from counting electricity generated from large hydroelectric projects  
27 that are already in place toward the new requirement.

28           2) Consumers may pay more for electricity under this proposal. Utilities may  
29 have to pass additional costs on to consumers, such as those for building or acquiring  
30 more transmission lines. While the proposal caps the amount that an average residential  
31 electric bill can increase as a result of the renewable energy requirement, it provides no  
32 such cap for non-residential customers such as business, industrial, government, or  
33 wholesale.

1           3) Colorado requires a continual and reliable means of energy production. A  
2 certain amount of electricity must be available at all times, and a certain amount must be  
3 maintained in reserve. Renewable energy, especially wind and solar resources, are  
4 intermittent and may not be available when needed. This could cause problems during  
5 peak energy demand periods or in emergencies.

6           4) The use of renewable resources should be a choice not a mandate. Colorado  
7 utilities are already using renewable energy resources when they are cost-effective.  
8 Further, several utilities have programs that give customers the option to purchase all or  
9 a share of their electricity from renewable sources.

## 10   **Estimate of Fiscal Impact**

11           *State impact.* The renewable energy requirement will be administered by the  
12 Colorado Public Utilities Commission. Average annual administrative costs to the  
13 Commission are estimated at roughly \$60,000, with the potential for an additional  
14 one-time start-up cost of up to \$80,000. These costs will be covered by fees charged to  
15 affected utilities. In addition, to the extent that this proposal changes retail electricity  
16 rates, state agencies will see changes to their electric utility bills.

17           *Impact on retail electricity rates.* The impact on retail electricity rates is difficult  
18 to predict with certainty. Changes in retail electricity rates as a result of this proposal  
19 will vary by service provider, and will depend upon several factors, including:

- 20           • the amount of renewable generation the provider has installed versus the  
21 amount it must acquire from other providers in the form of renewable energy  
22 credits;
- 23           • the cost difference of generating electricity from renewable sources versus  
24 conventional fuel sources;
- 25           • the price of natural gas and coal;
- 26           • whether federal tax credits for renewable energy facilities are extended;
- 27           • the amount of solar generation the provider currently has in place; and  
28           • the number of customers choosing to install on-site solar facilities.