

## 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 a 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 exempt or include itself in the renewable  
11          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 currently required to use  
15           renewable energy sources to generate electricity, however some generate electricity from  
16           wind. Roughly 2 percent of electricity generated in Colorado comes from renewable  
17           energy sources as defined under this proposal. To date, 16 other states have adopted  
18           renewable energy requirements. The maximum amount and source of the renewable  
19           energy vary by state, ranging from 1.1 percent of the total electricity generated in  
20           Arizona (mostly solar) to 30 percent in Maine (mostly hydroelectric).

21           This proposal requires Colorado utilities serving over 40,000 customers to  
22           generate or purchase a percentage of their electricity from renewable resources 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           At least 4 percent of the electricity generated each year from renewable sources must  
28           come from solar technologies.

1           Seven utilities in Colorado serving about 80 percent of Colorado's electric  
2 customers would be initially required to comply with this proposal.

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

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

13           **Renewable energy credit system.** A system of tradeable renewable energy  
14 credits will be created allowing utilities that do not generate the required amount of  
15 electricity from renewable energy sources to purchase "credits" from those utilities that  
16 exceed the requirement and therefore have excess credits to sell.

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

## 24   **Arguments For**

25           1) Electricity generated from renewable sources has less harmful environmental  
26 impacts than electricity generated from traditional fuels. The benefits of using renewable  
27 energy resources include cleaner air and water, more efficient use of water, less damage  
28 to the Colorado landscape, and less pollution. Coal-fired power plants emit air pollutants  
29 and consume large amounts of water, and drilling for natural gas has contaminated water  
30 supplies in some areas of Colorado.

31           2) Using a variety of fuels to meet Colorado's increasing electricity needs will  
32 improve the stability and security of Colorado's electricity supply. Increasing Colorado's  
33 use of renewable energy will reduce its dependence on traditional sources of energy. The  
34 state must prepare for the future by requiring a percentage of its electricity to be  
35 generated from renewable resources.

36           3) Using renewable energy makes economic sense in the long run. While the  
37 amount of traditional fuels is finite, renewable energy sources are unlimited. As time

1 passes, supplies of coal and natural gas will diminish and these resources will become  
2 more expensive. In contrast, the price of renewable energy can only decrease as  
3 technologies improve. Generating a percentage of electricity from renewable resources  
4 contributes to energy diversity and reduces Colorado's vulnerability to fluctuations in fuel  
5 prices.

6 4) Renewable energy facilities, typically located in rural areas, boost rural  
7 economies. The construction and maintenance of renewable energy facilities will create  
8 jobs in rural Colorado. Farmers and ranchers will be able to tap into a new source of  
9 income by leasing their land for wind facilities. In addition, renewable energy facilities  
10 provide tax revenues that can be used to pay for local services.

### 11 **Arguments Against**

12 1) Colorado's largest utilities will have to generate a certain amount of electricity  
13 from renewable resources, regardless of cost. Electricity generated from most renewable  
14 resources is more expensive than electricity generated from traditional fuels. The  
15 proposal requires at least 4 percent of renewable energy to come from solar sources, the  
16 most expensive renewable energy source. Currently, utilities generate electricity based  
17 on which resources are the least expensive.

18 2) Consumers may end up paying more for electricity under this proposal.  
19 Utilities may have to pass additional costs, such as building or acquiring more  
20 transmission lines, on to their customers. While the proposal caps the amount that an  
21 average residential electric bill can increase as a result of the renewable energy  
22 requirement, it provides no such cap for non-residential customers. Any costs shifted to  
23 business may result in increased prices for goods and services for all consumers.

24 3) Coloradans require a continual and reliable means of energy production. A  
25 certain amount of electricity must be available at all times. Renewable energy, especially  
26 wind and solar resources, are intermittent and therefore unreliable. This could create  
27 problems during peak demand periods or in emergencies.

28 4) The use of renewable resources should be a choice not a mandate. Colorado  
29 utilities are already using renewable energy resources when they are cost-effective.  
30 Several utilities have programs that give customers the option to purchase a share of  
31 their electricity from renewable sources. Colorado should not require all customers to  
32 purchase a certain amount of renewable energy.

### 33 **Estimate of Fiscal Impact**

34 *State impact.* The renewable energy requirement will be administered by the  
35 Colorado Public Utilities Commission. Average annual administrative costs are

1 estimated at roughly \$60,000, with some potential for an additional one-time start-up  
2 cost of up to \$80,000. These costs will be covered by fees charged to affected utilities.

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

- 6 • the amount of renewable generation the provider has installed versus the  
7 amount it must acquire from other providers in the form of renewable energy  
8 credits;
- 9 • the cost difference in providing electricity from renewable versus traditional  
10 sources;
- 11 • the amount of solar generation the provider currently has in place; and
- 12 • the number of customers choosing to install on-site solar facilities.