

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 and
14 natural gas, and some 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, nine Colorado utilities serving over 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.** Affected utilities may hold elections
17 to exempt themselves from the renewable energy requirement. Similarly, utilities not
18 subject to the requirement may hold elections to be included. At least 25 percent of the
19 utility's customers must vote on the issue of exemption or inclusion, with a majority vote
20 required for passage. In addition, a municipal utility or a rural electric cooperative may
21 develop a similar renewable energy requirement and be exempted from this proposal. To
22 qualify, the utility must: 1) use at least one of the eligible renewable energy sources,
23 2) follow the same schedule for electricity generation from renewable sources, and
24 3) offer an optional pricing program that allows customers to support emerging
25 renewable technologies. Utilities that choose this option are not required to generate
26 electricity from solar sources.

27 **Role of the Colorado Public Utilities Commission.** The Public Utilities
28 Commission must adopt rules to implement this proposal. The Commission will monitor
29 and enforce the compliance of those utilities required to meet the new renewable energy
30 requirements.

31 **Arguments For**

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

1 2) Electricity generated from renewable sources has less 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 the federal Environmental Protection
6 Agency, generating 10 percent of electricity from renewable sources is roughly equal to
7 eliminating the carbon dioxide 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. Some farmers and ranchers will be able to tap into a new source
16 of 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 local governments to pay for services such as schools and hospitals.

19 **Arguments Against**

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

28 2) Consumers may pay more for electricity under this proposal. Utilities will
29 pass any additional costs on to consumers, such as those for building or acquiring more
30 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.

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

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

5 **Estimate of Fiscal Impact**

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

12 *Impact on retail electricity rates.* Changes in retail electricity rates as a result
13 of this proposal will vary by service provider, and will depend upon several factors,
14 including:

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