



BEFORE THE ARIZONA CORPORATION C...

Arizona Corporation Commission

1
2 WILLIAM A. MUNDELL
Chairman
3 JIM IRVIN
Commissioner
4 MARC SPITZER
Commissioner
5

DOCKETED

DEC 19 2002

DOCKETED BY [Signature]

6 IN THE MATTER OF ARIZONA PUBLIC)
SERVICE COMPANY - REQUEST FOR A)
7 PARTIAL VARIANCE OF A.A.C. R14-2-1618)
TO ALLOW GEOTHERMAL ENERGY TO BE)
8 RECOGNIZED FOR THE ENVIRONMENTAL)
PORTFOLIO STANDARD)
9

DOCKET NO. E-01345A-02-0852

DECISION NO. 65474

ORDER

10 Open Meeting
December 17 and 18, 2002
11 Phoenix, Arizona

12 BY THE COMMISSION:

13 FINDINGS OF FACT

14 1. Arizona Public Service Company ("APS") is certificated to provide electric service as a
15 public service corporation in the State of Arizona.

16 2. On November 15, 2002, APS filed a request for a partial variance of A.A.C. R14-2-1618
17 to allow geothermal energy to be recognized for the Environmental Portfolio Standard. A.A.C. R14-2-
18 1618 requires utilities to derive a portion of their total retail energy sold from new solar resources or
19 environmentally friendly renewable electricity technologies. The rule currently defines
20 environmentally friendly renewable electricity technologies as in-state landfill gas generators, wind
21 generators, and biomass generators. Geothermal energy is not included.

22 3. APS issued a Request for Proposals ("RFP") for renewable energy resources. Vulcan
23 Power responded to the RFP, with a geothermal energy proposal. There also appear to be other
24 geothermal energy projects that may be developed in Arizona.

25 4. Geothermal energy is the thermal energy contained in the rock and fluid in the earth's
26 crust. In geothermal power plants, the natural hot water and steam from the earth is used to turn
27 turbine generators to produce electricity. Unlike fossil fuel power plants, no fuel is burned.
28 Geothermal plants have no air emissions and do not use water for cooling. Also, Staff is not aware of

1 any other significant environmental impacts from geothermal power generation. Geothermal plants do
2 release a small amount of air pollutants, however, their emission levels are minute compared to natural
3 gas and coal fired plants. Additionally, geothermal plants have a small footprint relative to
4 conventional power plants. Other advantages of geothermal plants are that generation is typically
5 available 95 percent of the time, the plants are modular and can be installed incrementally on an as-
6 needed basis, and plant construction can take as little as six months. Besides power plants, geothermal
7 energy supports greenhouses, fish farms, and other applications.

8 5. The U. S. Department of Energy's GeoPowering the West program has identified Arizona
9 as a high-potential state for geothermal electricity generation. Almost half of the state contains good
10 to excellent geothermal resources.

11 6. The Vulcan Power proposed project, to be located near Clifton, would extract hot salt
12 water from the ground and pass it through a heat exchanger where the heat from the water would be
13 transferred to an organic fluid with a low boiling point. The water would be returned to the ground.
14 The organic fluid would turn to vapor that would drive a turbine that generates electricity. After
15 exiting the turbine, the organic fluid would be cooled and condensed to liquid, after which it would be
16 returned to the heat exchanger to be vaporized again. APS would buy the green credits from the
17 project.

18 7. There is precedent in Arizona for geothermal energy to be considered renewable energy.
19 One example is A.R.S. 41-806, which requires the Department of Administration to use renewable
20 energy to provide power to facilities in the governmental mall. Geothermal energy is included in the
21 definition of renewable energy.

22 8. Because geothermal energy consumes no natural resources and is inherently
23 environmentally friendly Staff believes that APS' request is reasonable. Staff has recommended that
24 APS be granted a partial variance of R14-2-1618 to allow geothermal energy to be recognized for the
25 Environmental Portfolio Standard.

26 ...
27 ...
28 ...

CONCLUSIONS OF LAW

1
2 1. APS is an Arizona public service corporation within the meaning of Article XV, Section
3 2, of the Arizona Constitution.

4 2. The Commission has jurisdiction over APS and over the subject matter of the
5 application.

6 3. The Commission, having reviewed the application and Staff's Memorandum dated
7 November 27, 2002, concludes that it is in the public interest to approve a variation of R14-2-1618.

ORDER

9 THEREFORE, IT IS ORDERED that APS be and hereby is granted a partial variance of R14-
10 2-1618 to allow geothermal energy to be recognized for the Environmental Portfolio Standard.

11 IT IS FURTHER ORDERED that this Decision shall become effective immediately.

BY ORDER OF THE ARIZONA CORPORATION COMMISSION

13
14 

15 CHAIRMAN

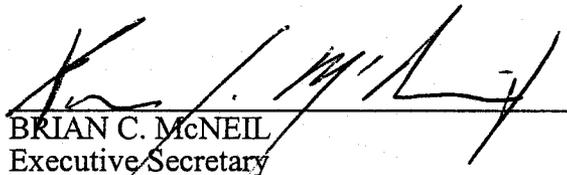
14 _____

15 COMMISSIONER

14 

15 COMMISSIONER

16 IN WITNESS WHEREOF, I, BRIAN C. McNEIL, Executive
17 Secretary of the Arizona Corporation Commission, have
18 hereunto, set my hand and caused the official seal of this
19 Commission to be affixed at the Capitol, in the City of
20 Phoenix, this 19th day of December, 2002.

20 
21 BRIAN C. McNEIL
22 Executive Secretary

23
24 DISSENT: _____

25 EGJ:BEK:hml/NMA

1 SERVICE LIST FOR: Arizona Public Service Company
DOCKET NO. E-01345A-02-0852

2 Mr. Jeffrey B. Guldner
3 Snell & Wilmer, L.L.P.
4 One Arizona Center
400 East Van Buren Street
Phoenix, Arizona 85004-2202

5 Mr. Christopher C. Kempley
6 Chief Counsel, Legal Division
Arizona Corporation Commission
7 1200 West Washington Street
Phoenix, Arizona 85007

8 Mr. Ernest G. Johnson
9 Director, Utilities Division
Arizona Corporation Commission
10 1200 West Washington Street
Phoenix, Arizona 85007

11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28