GOAL XIII

ENERGY CONSERVATION

BAKER COUNTY

COMPREHENSIVE PLAN

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ENERGY CONSERVATION GOAL: To conserve energy.

I. ENERGY SOURCES

A. Electricity (See Plate #6 of Appendix I)

The following major hydro-electric installations are located on the Snake River between Baker County and the State of Idaho. Both are operated by Idaho Power Company.

1. Brownlee Dam: 540,000 kilowatt rating
2. Oxbow Dam: 190,000 kilowatt rating
3. Other licensed projects of record

   a. City of Baker (Water Pipeline): 220 TKW*
   b. California-Pacific Utilities Company (Rock Creek) 1526 TKW*
   c. Cornucopia Gold Mines (Pine Creek-Pine Valley) 83 TKW*
   d. Eastern Oregon Power Co. (CP National) Powder River 220 TKW*

Note: c and d, while still licensed, are inoperable. *TKW refers to theoretical kilowatt capacity.

B. Potential Hydroelectric Installations

Name	Stream	Location	MW[a] Capacity Potential	Remarks
Thief Valley	Powder River	Sec. 26, T6S, R40E	3.0	Enlarge existing reservoir
Echo Lake #1	West Eagle Cr.	Sec. 21, T5S, R43E Sec. 8, T5S, R43E	1,000	Pumped storage site #139
Echo Lake #2	West Eagle Cr. Minam River	Sec. 21, T5S, R43E Sec. 34, T4S, R43E	1,000 to 2,000	Pumped storage site #138
Lower Eagle Cr.	Eagle Creek	Sec. 7, T8S, R45E	10.9	
New Bridge	Eagle Creek	Sec. 7, T8S, R45E	14.1	Diversion only
Summit	Summit Creek	Sec. 3, T8S, R45E	1,000	Pumper storage site #166
Boulder Creek	Pine Creek	Sec. 27, T6S, R45E	1.7	Diversion only
Carson	Pine Creek	Sec. 10, T7S, R45E	2.7	Diversion only
Sugarloaf Mtn.	Clear Creek	Sec. 12, T6S, R45E	1,000	Pumped storage site #143

MW[a] = Megawatts

C. **Coal, Natural Gas, Petroleum**

There are no known economic sources of such energy resources in the county.

D. **Wind**

Except for a small number of windmills pumping water for livestock, no significant use of windpower is being made in the county.

E. **Sun**

There seems to be an increased interest in solar heat but because building permits are seldom required, a precise inventory is unavailable.

F. **Geothermal**

The following represent surface evidence of geothermal energy

Name	Location	Temperature
*Fisher Hot Springs	T 7S., R38 E.W.M.	Unknown
*Radium Hot Springs	T 7S., R39 E.W.M.	135° F., 300 gpm
*Sam-O-Springs	T 9S., R40 E.W.M.	80° F., 400 gpm
Huntington City Well	T14S., R45 E.W.M.	76° F
Nelson Springs	T12S., R39 E.W.M.	80° F
Kropp Hot Springs	T 6S., R39 E.W.M.	109° F
Unnamed	T11S., R43 E.W.M.	Unknown
Unnamed	T 9S., R40 E.W.M.	Unknown
Unnamed	T 9S., R41 E.W.M.	Unknown

*These sites have been proposed as the most promising in Baker County for further study. Initial studies of all geothermal areas in the county were conducted by Northeast Oregon Geothermal Project Team Members, coordinated by the Eastern Oregon Community Development Council under a grant from the Pacific Northwest Regional Commission.

There are currently no explorations for geothermal energy on either private or federal lands. Some private lands have been leased for possible exploration.

G. Wood

1. Present Usage

Wood fiber exists as a renewable, but largely unused, source of heat energy. Limited usage includes:

a. Home heating: fireplaces, heating stoves, and some cooking stoves
b. Recreation: campfire
c. Industrial: steam generation*

i) drying lumber
ii) heating buildings
iii) operating machinery
iv) generating electricity

* These uses of wood as energy sources are currently limited to one mill in the county.

2. Availability of wood fiber as an energy resource

National Forest Lands in Baker County are generally Site IV, producing an average of 60 Tons of wood fiber per acre.

a. Pre-commercial thinning: Operations remove 70-90% of wood fiber or 40 to 60 Tons per acre. This material can be either left on the ground, piled and burned as waste, crushed and put back into the ground, or removed from the woods for use as fuel or chips.

b. Logging: Operations on cut-over National Forest Lands in Eastern Oregon leave an estimated 5 dry tons of residue per acre. This slash can either be left or piled and burned as waste.

c. Sawmill Operations: USDA estimates that Eastern Oregon sawmill operations produce 1.2 Tons of wood and bark residues for every 1,000 board feet of lumber. These residues can be converted to marketable products such as chips and dry shavings when market conditions are favorable. They can provide fuel for producing heat and electricity. Those residues not utilized are disposed of by burning. Present utilization approaches 100% at Baker County's main industrial mill operation. Utilization is less than that at the plywood mill operation.

3. Future Considerations

As the price of nonrenewable sources of energy increases, wood residue may economically compete as a source of energy, particularly at mill sites. The conversion of wood residue to heat energy could help alleviate a solid waste disposal problem. The conversion of wood residue, combined with municipal waste, to heat energy could further help to alleviate solid waste disposal problems.

Major economic factors in utilizing wood waste and municipal waste:

a. The cost of collection and transposing of such wastes.
b. The initial cost of constructing wood waste and/or municipal waste conversion systems.
c. The profitability of marketing by-products.

H. Sources of Information

1. California-Pacific Utilities Company
2. Idaho Power Company
3. Ellingson Timber Company
4. Bureau of Land Management
5. Thermal Springs and Wells; Department of Geology and Minerals, 1970, Bowen and Peterson
6. Wood and Bark as Fuel; Research Bulletin #14, August 1973, Stanley E. Corder.
7. USDA Forest Service General Technical Report PNW-18, 1974, Grantham, Estep, Pierovich, Tarkow, and Adams.
8. Department of Geology and Mineral Industries, Baker Office
9. Northeast Oregon Geothermal Project Report, 1978, E.O.C.D.C.
10. U.S. Forest Service, Supervisor's Office, Baker, Oregon
11. Powder River Basin, State Water Resources Boar, June 1967, p.82
12. Draft Environmental Statement, Burnt Powder Planning Unit, A Land Management Plan, Forest Service, U.S.D.A., 1978.

II. GOAL XIII ENERGY CONSERVATION FINDINGS and POLICIES

A. Goal XIII Energy Conservation Findings

The county governing body finds that:

1. Energy conservation refers to the management of energy resources in a manner to avoid wasteful or destructive uses and provide for future availability.

B. Goal XIII Energy Conservation Policies

The county governing body declares that:

1. Potential energy producing sites shall be protected from irreversible loss and encouraged to be developed.

2. The exploration for, and development of geothermal heat sources shall be encouraged.

3. The conversion of wood wastes (logging and milling residue) to usable heat energy shall be encouraged.

4. The use of available heat energy from natural warm water springs shall be encouraged.

5. The development of high density land uses along high capacity transportation corridors shall be encouraged.

6. The location of residences proximal to places of employment shall be encouraged.

7. The siting and design of buildings to utilize incident solar radiation for supplemental heat energy shall be encouraged.

8. The use of construction materials and methods designed to reduce energy requirements for heating and cooling of buildings shall be encouraged.

9. Recycling of usable metallic and nonmetallic waste and scrap shall be encouraged where, or when, such recycling is economically practical.