

INTRODUCTION

Public lands have long provided energy resources for both individual and commercial use. The National Energy Policy has laid the legal groundwork for alternative energy projects on public lands; however, little demand has surfaced in relation to the planning area. Nonetheless, this planning effort addresses alternative energy development in order to offer guidance for projects that are proposed on SJPLC-administered lands.

LEGAL AND ADMINISTRATIVE FRAMEWORK

The President's National Energy Policy encourages the development of renewable energy resources, including wind energy, as part of an overall strategy designed to develop a diverse portfolio of domestic energy supplies for the future. The National Energy Policy Development (NEPD) Group recommended "that the President direct the Secretaries of the Interior and Energy to re-evaluate access limitations to Federal lands in order to increase renewable energy production such as biomass, wind and solar."⁷

EXECUTIVE ORDERS

- **Executive Order 13212 of May 2001:** This EO requires Federal agencies to take appropriate actions, to the extent consistent with applicable law, to expedite projects that serve to increase the production, transmission, or conservation of energy.

REGULATIONS AND POLICIES

Geothermal Steam Act of 1970 (P.L. 91-581; 30 U.S.C. §§ 1001-1027, December 24, 1970, as amended 1977, 1988, and 1993).

Existing land use plans identify Wilderness Areas and WSAs, ACECs, RNAs, visual resource management (VRM) areas, National Scenic and Historic trails, National Landscape Conservation System units, critical habitat areas, and other special management areas where land use restrictions apply to a variety of uses, including those related to alternative energy site testing and monitoring.

DESIGN CRITERIA

Management guidelines and design criteria describe the environmental protection measures that would be applied to all of the alternatives at the project level in order to protect, enhance, and, where appropriate, improve resources related to alternative energy sources. Guidelines and design criteria are presented in Part 3 of Volume 2 of the DLMP/DEIS.

⁷ National Energy Policy (NEP) report dated May 2001. The National Energy Policy Development (NEPD) Group.

AFFECTED ENVIRONMENT

Existing Conditions and Trends

The U.S. Department of Energy (DOE) National Renewable Energy Laboratory produced an analysis assessing the potential for renewable energy on public lands.⁸ This renewable resource assessment addressed BLM, Bureau of Indian Affairs (BIA), and USFS lands in the western United States, except Alaska. The assessment summarized high potential for five renewable energy uses: CSP-concentrated solar and photovoltaics (PV), wind, biomass, and geothermal. The planning area was identified as only having high potential for biomass energy production (see Table 3.18.1).

Table 3.18.1 – BLM Planning Areas in Colorado with High Potential for Wind or Biomass Renewable Power

PLANNING UNIT	WIND	BIOMASS
Grand Junction	High Potential	
Kremmling	High Potential	High Potential
Little Snake		High Potential
Royal Gorge	High Potential	High Potential
San Juan		High Potential

Currently, within the planning area, there is currently no demand for use of public lands for wind or solar power development, or for the commercial use of biomass material. Personal use of firewood continues at a steady pace. Fuels-reduction projects around communities in the planning area would provide a source of biomass for the development of a new local source of energy. The Energy Atlas for Colorado addresses potential demand for wind, solar, biomass, and geothermal energy for the near future. Potential for commercial development in western Colorado is limited.

Biomass

Biomass is organic matter available on a renewable basis (including forest and mill residues, agricultural crops and wastes, wood and wood wastes, animal wastes, livestock operation residues, aquatic plants, fast-growing trees and plants, and municipal and industrial wastes). Forest products for fuel-treatment products are available for potential development. However, no current demand exists, and none is expected in the foreseeable future. With significant agricultural operations, Colorado is a good candidate for increased use of biomass fuels, especially those that do not require large amounts of water. Electricity generation potential in Colorado from biomass materials is approximately 4 million MWh/year.

Proposals for the development of biomass generation would comply with timber harvesting and fuels treatment standards when the sources of fuel are removed from public lands. A separate site-specific environmental analysis would be required for such a proposed harvest of biomass fuel.

⁸ Assessing the Potential for Renewable Energy on Public Lands. U.S. Department of the Interior, BLM; U.S. Department of Energy. Energy, Efficiency and Renewable Energy (DOE/GO-102003-1704), February 2003. Available at: <http://www.nrel.gov/docs/fy03osti/33530.pdf>.

Wind

Areas of Class 3 (medium resource level) or higher wind resource can be found throughout the southern Rocky Mountain region. The most extensive area of wind resource is found over the high plains and uplands of eastern Colorado and eastern New Mexico. Over this area, the annual average wind resource level is mostly Class 3 and Class 4, but can be higher on exposed hilltops that are found over portions of the high plains region. Mountain summits and ridge crests estimated to have Class 3 or higher wind resource exist throughout the southern Rocky Mountain region. Higher mountain ranges are estimated to have at least Class 6 (high wind resource level), but many of these ranges may not be suitable, due to the ruggedness of the terrain as well as to the potential for extreme wind and icing conditions. Electricity generation potential in Colorado from wind generation is approximately 601 million MWh/yr.

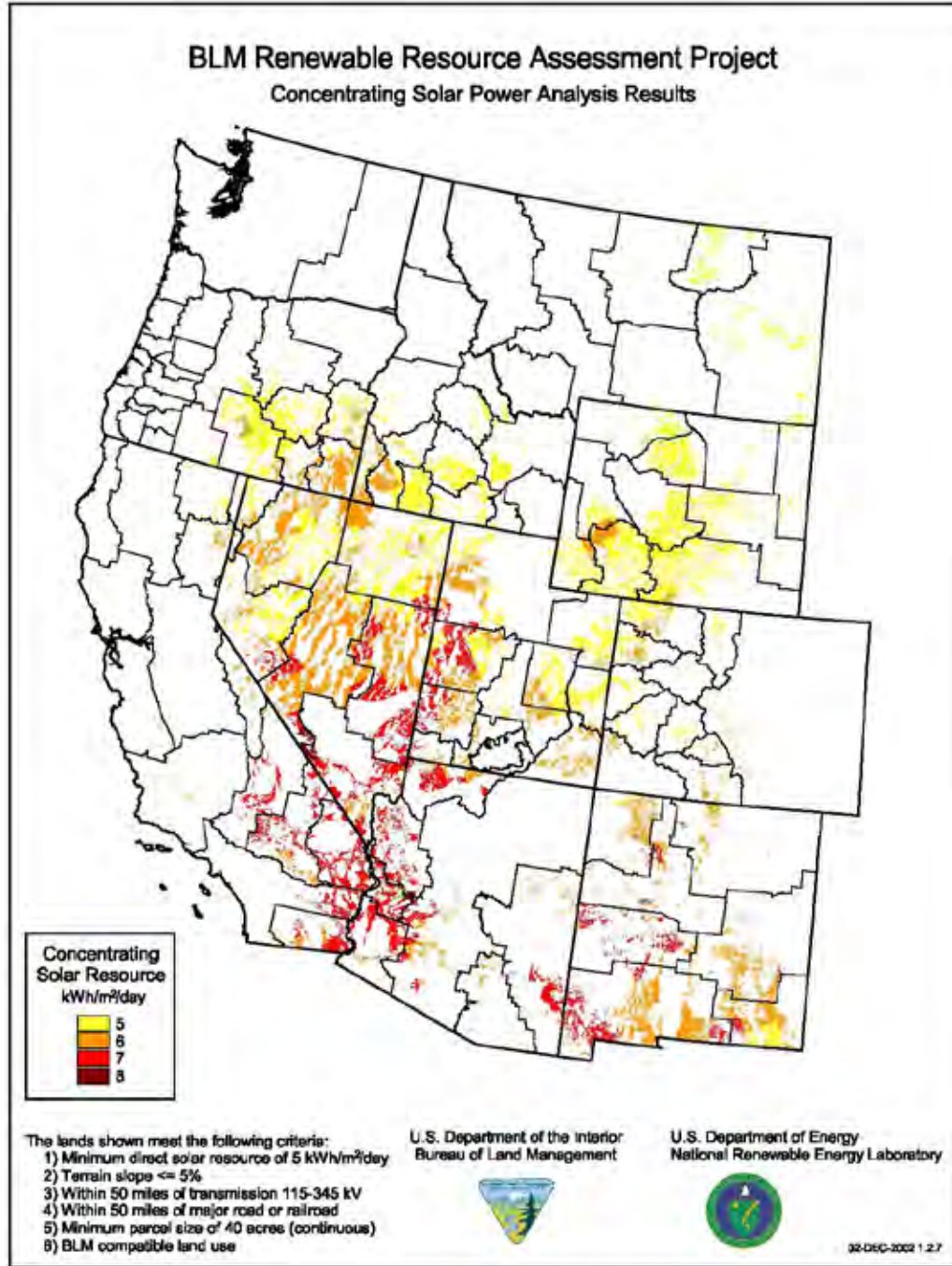
High potential wind energy sites within the planning area are identified on high alpine ridges in the San Juan Mountains. Wind energy development on BLM-administered lands in the Columbine Field Office (identified as having medium to high resource levels) were not considered to have development potential in the Final Environmental Impact Statement on Wind Energy Development completed by the BLM in 2005.5 (A significant scenic conflict issue would need to be resolved at these sites). A site-specific environmental analysis would be required in order to address maintenance of a high visual quality standard before wind power would be permitted within the planning area.

Solar

Colorado has more than 300 days of sunshine per year, making it an ideal location for solar photovoltaics (PV) and solar thermal technologies. Nearly 30 schools are tapping into the power of the sun, thanks to customers of Xcel Energy who round their bills up to a higher dollar amount and/or contribute to the Renewable Energy Trust Program. Electricity generation potential in Colorado from solar power is approximately 83 million MWh/yr.

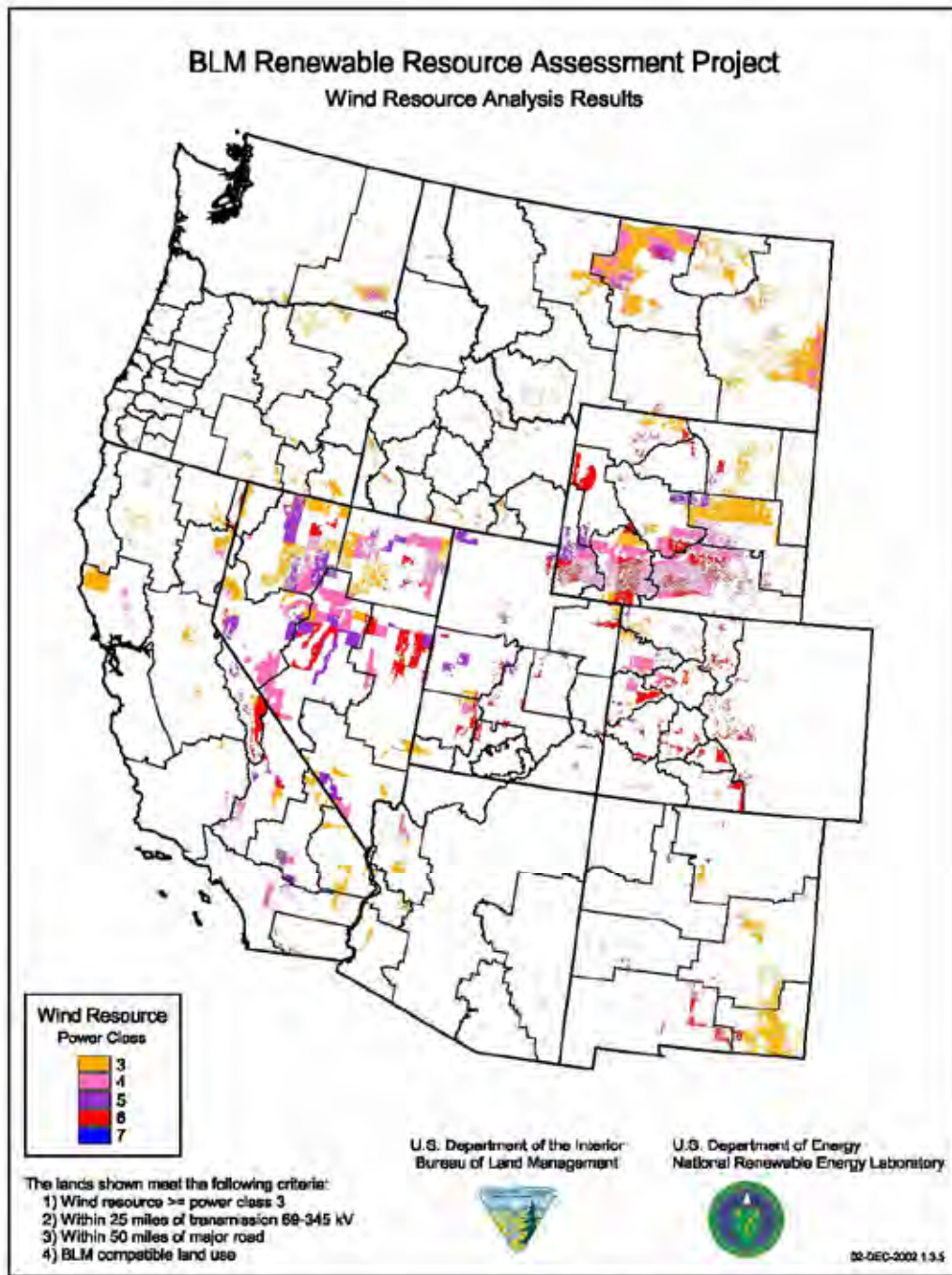
No potential has been identified for the development of commercial solar energy generation on public lands in southwestern Colorado. Localized use of solar generators for other uses may occur, and would be addressed in site-specific environmental analysis.

Figure 3.18.1 – Concentrating Solar Resource



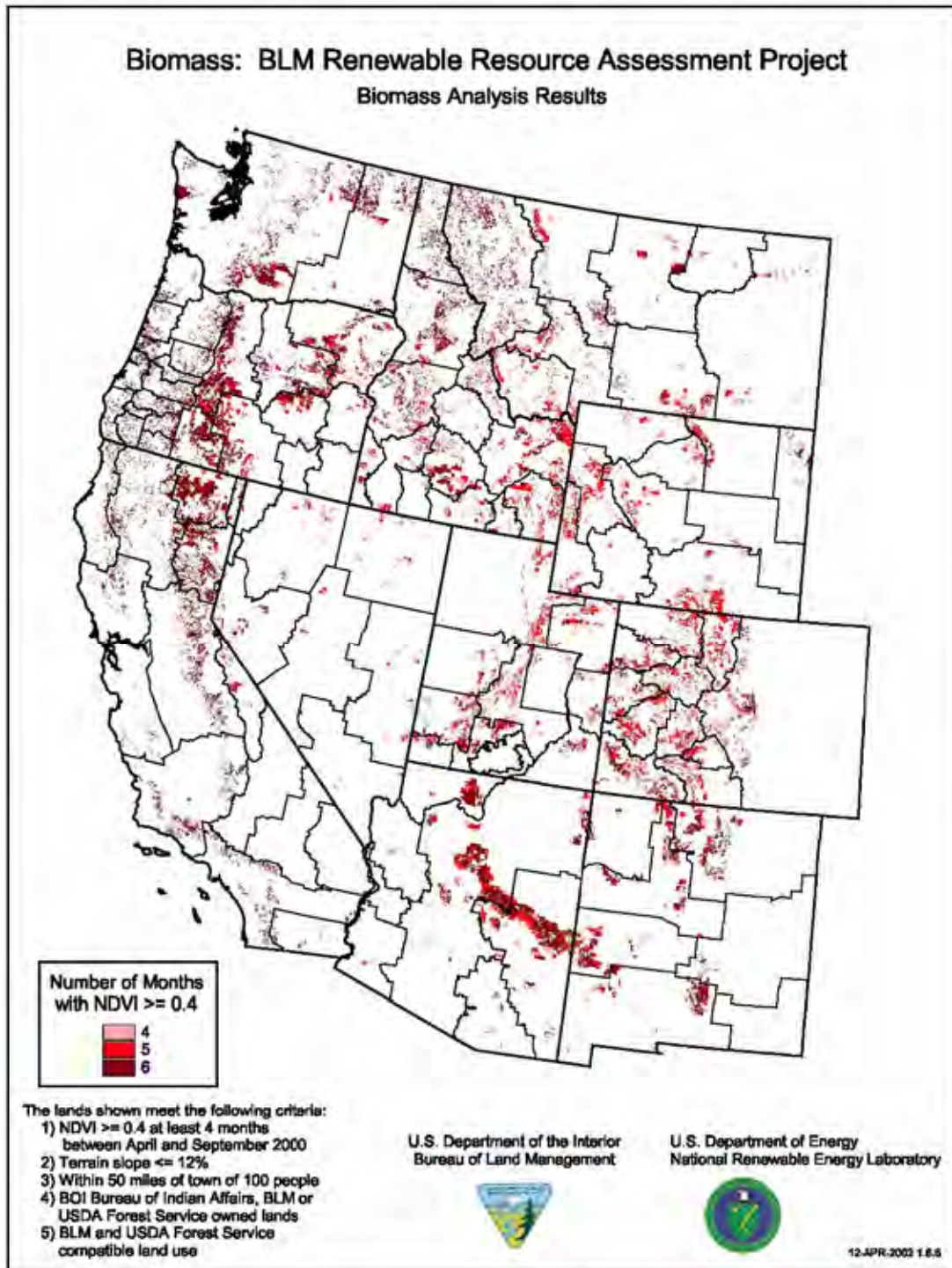
Map supplied by the National Renewable Energy Laboratory

Figure 3.18.2 – Wind Resource Analysis Results



Map supplied by the National Renewable Energy Laboratory.

Figure 3.18.3 – Biomass Analysis Results



Map supplied by the National Renewable Energy Laboratory

ENVIRONMENTAL CONSEQUENCES

DIRECT AND INDIRECT IMPACTS

With no identified potential for wind or solar power generation on public lands in the planning area, the environmental consequences described in this section only analyze biomass as a potential energy source. Facility construction and operation for biomass energy generation sites would be the same as for the construction and use of other facilities, and would require a specific area to be dedicated to a primary use (and, secondarily, to other compatible uses).

General Impacts

Potential biomass generation facilities would be located near communities and existing infrastructure. They would rely on existing transportation facilities for moving materials to a centralized generation plant. Design criteria and guidelines would be the same under all of the alternatives, and restrictions on development would be implemented in order to ensure compliance with laws and regulations governing development projects. The impacts related to the cost of production, availability of forest products, and access to markets may influence the development of biomass as an energy source. Alternatives B and C, which would propose less available land for development (primarily in MA 1s and MA 3s), would be the most restrictive. These alternatives would generally prohibit the development of permanent industrial facilities, or would require limits or prohibitions on road access, as well as lower levels of materials available for biomass energy generation. MA 2s, which would have direction for specific management plans, may impose site-specific closures or restrictions on alternative energy development. MA 4s would direct development to be compatible with overall MA requirements, and may impose high site-specific costs. MA 5s and 7s would be compatible with facility development. MA 8s may be compatible with generation facilities (if they were built to provide energy for the permanent development that would exist in that MA). However, given the minimal expected level of alternative energy development expected during the life of approved LMP, there may be no reasonably measurable differences between the alternatives.

Impacts Related to Wildlife and Fisheries Management

Wildlife management activities that may result in impacts to alternative energy development are primarily related to management requirements under the ESA, as well as access to resources. Protective measures applied to construction and operations may increase costs. Conservation strategies, critical habitat designations, and biological opinions would address specific management requirements for all energy development within the planning area, and would be the same under all of the alternatives.

DLMP/DEIS Alternatives: The impacts related to wildlife and fisheries management on alternative energy development may be similar under all of the alternatives. Differences in the potential impacts on habitat designations, design criteria, and habitat improvement treatments may result in negligible impacts to the development of biomass energy production. Vegetation from habitat treatments may be a viable source for biomass generation facilities under all of the alternatives.

Impacts Related to Travel Management and Recreation

Within the planning area, public roads would be used to gain access to materials, sight generation plants, and transport energy to markets in order to develop potential biomass energy resources. Limiting the use of existing roads and trails by timing and/or by vehicle-type would restrict general or casual access for moving materials to a generation facility and for actual sighting of a generation plant. Limiting or foreclosing new road construction may increase costs, and may preclude development activity in areas near communities.

DLMP/DEIS Alternatives: The impacts related to travel management and recreation on alternative energy development may be similar under all of the alternatives. The impacts from restrictions on biomass harvesting and siting of production facilities may be negligible, given that the siting of facilities could occur in MA 7s near communities and existing road systems under all of the alternatives.

Impacts Related to Timber Harvesting, Fuels Management, and Oil and Gas Development

Biomass energy development would generally be compatible with timber harvesting, fuels management, and oil and gas development activities. Based on management direction that would encourage facility development using similar infrastructure with these facilities – which could provide a supply of material for biomass generation facilities – impacts may be minor.

DLMP/DEIS Alternatives: The impacts related to timber harvesting, fuels management, and oil and gas development activities on alternative energy development may be similar under all of the alternatives. Based upon the availability of harvested material, the siting of production facilities, and the sharing of infrastructure, impacts may be negligible, given that the siting of facilities could occur in MA 7s near communities and existing road systems under all of the alternatives.

CUMULATIVE IMPACTS

Given the minimal level of current use, and the low expectations for future development, there may be no important differences in cumulative impacts to this resource under any of the alternatives. Using existing infrastructure, siting near communities in MA 7s, providing a market for harvested material from timber management, and using existing or proposed transportation systems, may benefit the future development of biomass generation facilities within the planning area.