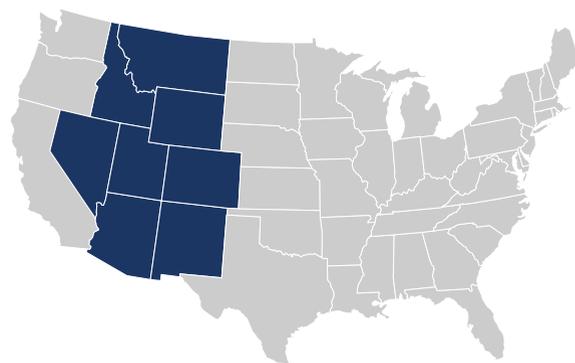


Gathering energy from sun, wind, and earth in the Mountain West

By Tom Kenworthy, Center for American Progress

The American Petroleum Institute's energy prescription for the Mountain West—Montana, Idaho, Wyoming, Utah, Nevada, Colorado, New Mexico, and Arizona—amounts to little more than the familiar and fatuous slogan, “drill, baby, drill.” The trade association's recent report, “American Made Energy,” includes a vague, broad-brush call for “the federal government to increase lease sales and adopt pro-access processes to improve development of U.S. oil and natural gas resources on public lands.”¹⁹⁶



This simplistic approach ignores several fundamental realities:

- The West is already experiencing serious damage from climate change and would face an even grimmer future if the nation turns its back on clean renewable energy in favor of a continued reliance on dirty fuels.
- The West boasts nearly unlimited renewable energy resources, particularly wind, solar, and geothermal, that promise a brighter economic future than is possible with fossil fuels.
- The oil and gas industry already has access to and holds leases on vast areas of western public lands that energy companies have yet to develop.
- Unbridled fossil fuel energy development would undermine the region's economic and social foundations.

Let's look at each of these realities in turn to demonstrate why the Mountain West—and the rest of the country—needs to tackle climate change and why the region is uniquely positioned to do so.

Human-induced climate change well underway

Climate change is not an abstract worry in the Mountain West. It is reality. Three years ago the authoritative report on U.S. climate change impacts prepared by the U.S. Global Change Research Program declared unequivocally that, “human-induced climate change appears to be well underway in the Southwest.”¹⁹⁷ The report also predicted the Mountain West will be one of the hardest-hit regions in the United States as climate change accelerates in coming years.

This year's catastrophic wildfires, continued widespread drought, declining winter snowpack, and earlier-than-usual melting and runoff of snow that sustains the region's rivers and supports tens of millions of people, are all evidence of fundamental changes underway that will have major disruptive effects on the West's economy and way of life. For the West, a business-as-usual energy strategy that treats the region as one big mining and drilling camp is foolhardy.

In this sprawling region that stretches from Montana to Arizona, the climactic conditions vary widely. The eastern parts of Montana, Wyoming, and Colorado are similar to the Great Plains; northern Idaho and western Montana are more northwestern; and Arizona, Utah, Nevada, and much of Colorado and New Mexico are part of the desert southwest.

The major consequences of climate change in the Mountain West include:

- In southwestern subregion states, droughts will become more severe; snowpack that is a critical source of water for tens of millions of people will decline; and competition for water among users will increase, as water shortages become more common in what has become the fastest-growing region in the United States. As the U.S. Global Change Research Program noted, “Water is, quite literally, the lifeblood of the Southwest ... Water supplies in some areas of the Southwest are already becoming limited, and this trend toward scarcity is likely to be a harbinger of future water shortages.”¹⁹⁸ A 2011 report by the Department of the Interior predicts annual water flows in three of the West's biggest rivers—the Colorado, the Rio Grande, and the San Joaquin—could fall by as much as 8 percent to 14 percent.¹⁹⁹

- In the Northwestern subregion, water supplies will be strained, as higher temperatures cause more precipitation in the form of rain instead of the snow that the region depends on to provide water for uses ranging from municipal and industrial to agricultural irrigation and hydropower. Snowpack is expected to decline by as much as 40 percent. The risk of forest wildfires will increase, as will the impacts of the mountain pine beetle and other insect outbreaks affecting forests.
- In the Great Plains subregion, “more frequent extreme events such as heat waves, drought, and heavy rainfall will affect many aspects of life in the Great Plains. Agriculture, ranching and natural lands, already under pressure due to an increasingly limited water supply, are very likely to also be stressed by rising temperatures,” according to the U.S. Global Change Research Program.²⁰⁰

The economic consequences of these climatic changes are likely to be severe. In 2008 the National Conference of State Legislatures and the University of Maryland’s Center for Integrative Environmental Research examined the economic costs associated with global warming in a number of states, including Nevada and Colorado. In Nevada the study found that, “Water limitations could affect tourism, real estate development and human health and could result in the loss of billions of dollars.”²⁰¹ The golf industry alone could lose nearly \$200 million a year and shed more than 1,100 jobs. In Colorado the study predicted major impacts on tourism, particularly the state’s skiing industry. A 1-percent decline in the number of tourists coming to Colorado would mean an economic loss of more than \$375 million by 2017 and the loss of more than 4,500 jobs. Agriculture is also expected to be hit hard.

The Mountain West’s energy future rests on clean, renewable energy

Blessed with abundant sun, wind, and geothermal resources, the states of the Mountain West have some of the best renewable energy potential in our nation. The region is, in many respects, leading the way in developing that potential. This vast opportunity for a transition to clean, abundant, and inexhaustible energy is enhanced by the fact that the federal government owns so much of the land base in the West that it can drive this transition. If renewable energy development on federal lands is done responsibly—with care taken to protect areas that are important for recreation, wildlife habitat, archaeological sites, and other public values—then this new use for the public estate will win wide acceptance.

Powering the future in the Mountain West region

Renewable energy projects are creating jobs now and into the future

Solar, wind, and geothermal projects

Existing capacity	5,444 MW
Planned projects	6,344 MW
Total projects	11,788 MW
Total jobs created	71,872

*Job creation varies depending on specific project.

Source: Electric Power Research Institute, National Renewable Energy Laboratory

The abundance of renewable energy resources in the West promises a thriving economic sector that provides abundant electric power, as well as billions of dollars for the economies of the Mountain West states and hundreds of thousands of new jobs. Currently in the eight states of the Mountain West, there are online wind projects with a capacity of more than 5,300 megawatts. According to the American Wind Energy Association, proposed projects for those states would provide more than 53,000 additional megawatts.

Three western states—New Mexico, Wyoming, and Montana—rank among the top 10 states for available wind resources. In fact, every state in the region, with the exception of Arizona, could provide all of its own current electricity needs with wind power, and two—Montana and Wyoming—could provide more than 100 times their current electricity needs.

The federal Bureau of Land Management (a Department of the Interior agency) has done extensive analyses of the potential for renewable energy in western states. The agency's wind study predicts that the eight Mountain West states could be producing another 8,604 megawatts of electricity by 2025. Its geothermal study sees potential geothermal production of 5,540 megawatts in those same states by 2025. And its solar study, which covered California, Arizona, Utah, Colorado, Nevada, and New Mexico, predicts the potential for more than 31,000 megawatts by 2030. The Bureau of Land Management has already permitted 16 utility-scale solar projects on its lands that will produce 6,000 megawatts.

A study published earlier this year by the National Renewable Energy Laboratory looked at the potential for renewable energy in western states in a different way.²⁰² The study compared existing nonhydro renewable energy capacity and planned nonhydro renewable energy projects—either under construction or in advanced development—with what is required by 2020 according to individual state renewable energy standards. (Utah, Idaho, and Wyoming do not have renewable energy standards requirements.)

Existing capacity in the eight Mountain West states as of December 2011 was 5,444 megawatts. Planned projects in those states totaled another 6,344 mega-

watts. The total of existing and planned projects is 11,788 megawatts—well in excess of the Mountain West states’ renewable energy standards requirements in 2020, which total (by a midrange estimate of capacity factor) 6,419 megawatts.

The National Renewable Energy Laboratory study did not break down projects by type of renewable energy. But if we assume that roughly the same ratios apply as are in the reasonably foreseeable development scenarios used by the Bureau of Land Management (69 percent of megawatts developed will be solar, 8 percent wind, and 23 percent geothermal), it is possible to make rough estimates regarding the jobs that are or will be created by a combination of existing capacity and planned projects.

Thus, of the total of 11,788 megawatts existing now or planned, 8,134 megawatts would be solar, 943 megawatts would be wind, and 2,711 megawatts would be geothermal. The job totals using the Electric Power Research Institute estimates of jobs per megawatt would thus be 53,684 jobs in the solar sector, 2,735 jobs in the wind sector, and 15,453 jobs in the geothermal sector—for a grand total of 71,872 jobs.

Industry complains about access but sits on idle leases

A pillar of the oil and gas industry’s “American Made Energy” campaign is expanding oil and gas production on federal lands. In service of that goal, the industry relentlessly promotes a false narrative that government agencies and environmentalists are blocking access to rich deposits of oil and gas underneath the 700 million acres of western public lands and private and Indian lands where the Bureau of Land Management administers mineral leasing.

In her testimony on August 2, 2012, before the House Energy and Commerce Committee’s subcommittee on energy and power, for example, Kathleen Sgamma of the Western Energy Alliance repeated the oft-stated claim that, “federal government policies and additional bureaucracy make it extremely difficult to operate on public lands.”²⁰³ These barriers, Sgamma said, prevent “small businesses from producing oil and natural gas, creating jobs, stimulating the economy, and returning revenue to the American taxpayer.”²⁰⁴

The inconvenient truth that the oil and gas industry overlooks is that energy companies have access to and leases on millions of acres of public lands that they have not yet developed. What’s more, the Obama administration has made it a priority

to increase oil and gas production from onshore lands that are fully managed by the federal government, as well as on private lands where the federal government holds the subsurface mineral rights.

Here are the facts:

- Nearly 21 million acres of public land that are under lease in the lower 48 states are sitting idle, neither producing oil and gas nor being explored for oil and gas by the industry. Those 21 million acres are more than half (56 percent) of the total acreage of public lands under lease to the industry.²⁰⁵
- In 2011 the Department of the Interior offered for lease nearly 4.4 million acres of public lands in 1,755 parcels. Almost 1,300 of those parcels were actually leased by the industry, and those lease sales brought in \$256 million in revenue, up about 20 percent from 2010.²⁰⁶
- In fiscal year 2011 public lands and Indian lands, where the minerals are managed by the Bureau of Land Management, produced 117 million barrels of oil and almost 3 trillion cubic feet of natural gas. Gas production from 2009 to 2011 was 6 percent higher than the final two years of the previous administration. In 2011 the bureau held three of the largest five lease sales in its history. As The New York Times noted in a recent story about energy production from public lands and the bureau's role, "The score card shows that the industry is winning."²⁰⁷
- Public lands and publicly owned offshore waters yield about 30 percent of the oil, 20 percent of the natural gas, and 45 percent of the coal produced in the United States.

Fossil fuels and the Mountain West's true economic strengths

To say that the future of the Mountain West should not include fossil fuel development is wrong; fossil fuels are an important piece of the region's energy mix. The development of oil, gas, and coal deposits is an appropriate and an economically important use of public lands in the West. The critical questions that are not always easily answered are where development is appropriate and where other, less disruptive land uses should prevail; how intense the development should be in those areas where it is appropriate; and how the harmful impacts of energy development can be mitigated.

Unrestrained fossil fuel development on western federal lands with little regard for other important uses of those lands—among them hunting, fishing, other recreational pursuits, clean water and air, and wildlife habitat—would pose a grave threat to western economies, the social fabric that binds communities, and natural resources and amenities that have fueled growth and sustained attractive lifestyles in the region. Maintaining a large and varied system of relatively unspoiled public lands is, quite simply, critical to the West’s future.

In a letter to President Barack Obama in November 2011, more than 100 economists and academics called for more protected federal parks, wilderness, and monuments. “[F]ederal protected public lands are essential to the West’s economic future,” the letter said, before continuing:

These public lands, including national parks, wilderness areas and national monuments, attract innovative companies and workers, and are an essential component of the region’s competitive advantage ... The rivers, lakes, canyons and mountains found on public lands serve as a unique and compelling backdrop that has helped to transform the western economy from a dependence on resource extractive industries to growth from in-migration, tourism and modern economy sectors such as finance, engineering, software development, insurance and health care.²⁰⁸

The economists’ letter reflects a growing consensus, bolstered by research, that the economic vitality of the West is tied directly to protected public lands.

Earlier this year Headwaters Economics, an independent research group based in Montana, looked at the economies of several western states and the role of protected lands. That study found that from 1970 to 2010, nonmetropolitan counties in the West that had more than 30 percent protected federal lands increased jobs by 345 percent. Nonmetropolitan counties with no protected federal lands saw jobs grow by just 83 percent.²⁰⁹

In three states—Montana, New Mexico, and Colorado—the overwhelming majority of new jobs created between 2000 and 2010 were in service-related industries. Mining jobs, which includes oil and gas, made up just 1 percent to 2 percent of overall employment in the three states.

“Colorado’s prosperity depends on protecting the natural environment that is part of our special quality of life,” said University of Colorado economist Daphne

Greenwood as part of that study. “Protected public lands play an important role by providing recreational opportunities, wildlife habitat, and amenities that attract and keep creative people in Colorado.”

A report issued this year by the Department of the Interior on the economic contributions of the lands it manages found that in fiscal year 2011, there were 435 million visits to the department’s properties, and that recreation and tourism supported more than 403,000 jobs, generating nearly \$49 billion in economic activity. In a broader look at the recreation economy beyond just federal lands, the Outdoor Industry Association found that outdoor recreation generates \$646 billion in economic activity and supports 6.1 million jobs in the United States—or nearly three times as many jobs as the oil and gas industry.²¹⁰

Voters, too, see protected public lands as economically valuable. In a survey this year of residents in six Mountain West states, the Colorado College State of the Rockies Conservation in the West poll found that between 85 percent and 97 percent of respondents agree that national parks, forests, monuments, and wildlife areas are an “essential part” of their states’ economies.²¹¹

In a particularly telling response, 69 percent of those surveyed agreed with the statement, “We should not allow private companies to develop our public lands when their doing so would limit the public’s enjoyment of—or access to—these lands.”

The same Colorado College poll also demonstrated clearly that westerners who are intimately familiar with traditional energy extraction share our vision of the future. Unlike the fatally flawed prescription offered by the fossil fuel industries of vastly expanded development of oil, gas, and coal, our vision and that of sensible westerners is of a prosperous and healthy future built on clean and renewable sources of energy. When carefully developed, those new and inexhaustible fuels will support and sustain robust local and regional economies while protecting the public land resources that shape personal and community life throughout the West.

About the Center for American Progress

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About the Center for the Next Generation

The Center for the Next Generation works to shape national dialogue around two major challenges that affect the prospects of America’s Next Generation—advancing a sustainable energy future and improving opportunities for children and families. As a nonpartisan organization, the Center generates original strategies that advance these goals through research, policy development, and strategic communications. In our home state of California, the Center works to create ground-test-ed solutions that demonstrate success to the rest of the nation.

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