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NEW ANALYSIS: COLORADO LEADS ROCKY MOUNTAIN STATES IN DEVELOPING CLEAN ENERGY ECONOMY

Report Shows Colorado's Policies and Incentives Provide an Edge in Attracting Jobs, Venture Capital, Public Investment, and Green Technology Patents

A new report by Headwaters Economics shows Colorado outpacing other Rocky Mountain states in developing its green economy. The state's strategy of targeted public policy and strong support for business has made it a regional and national competitive center of clean tech innovation that is leading the region in almost every economic sector, including capturing the most energy-related jobs and attracting the most venture capital, public investment, and green technology patents.

"The green economy already contributes positively to Colorado's economy and it has been growing rapidly in terms of job creation, investment, and production," said Julia Haggerty Ph.D., the report's author.

"While Colorado has not been immune to the global recession, the green economy has been a bright spot of economic dynamism in challenging times," she added. "Colorado is poised to hold onto its strong leadership position, as long as the state continues to show strong policy and financial leadership."

The Headwaters Economics study compares how Colorado, Montana, New Mexico, Utah, and Wyoming—five states with vast traditional and clean energy resources—are taking advantage of clean energy opportunities and concludes with five keys to success for the states to further benefit from the emerging green economy while measuring the likelihood that each state's policies will promote future growth and investment.

The full study, digest, state fact sheets, and state-by-state comparisons can be found at www.headwaterseconomics.org/greeneconomy.

Green Economy Jobs

Using a conservative measurement of green jobs, the report—*Clean Energy Leadership in the Rockies: Competitive Positioning in the Emerging Green Economy*—found that employment in the green economy has grown significantly faster than total employment. In Colorado, the number of overall jobs in 2007 was 19 percent greater than in 1995, compared to 30 percent growth in the green jobs sector. Looking at the five-state region, from 1995 to 2007 total job growth was 19 percent, while job growth in the core green economy was 30 percent. Nationwide, overall jobs grew by 10 percent, compared to green job growth of 18 percent from 1995 to 2007.

Colorado's green economy leads the region with the most clean energy-related jobs (in number and as a percent) as well as green business establishments. In 2007 the five states supported 3,567 green enterprises with 50 percent based in Colorado, 16 percent in Utah and in New Mexico, 11 percent in Montana, and 6 percent in Wyoming.

"All of the states have opportunities to benefit from the green economy, but it does not happen by accident," said Haggerty. "States performing the best—such as Colorado and New Mexico—have made a strong, deliberate, and lasting commitment to growing their green economy."

Investment Dollars

The *Clean Energy* report also measures private and public investment for the five states. In 2008, the region attracted more than $500 million dollars in clean energy-oriented venture capital, a ten-fold increase compared to 2000 levels. Colorado has out-competed its neighbors in attracting venture capital in the clean technology sector (close to $800 million, 75 percent of the region's total between 1999 and 2008).

When looking at public funding from competitively-awarded federal stimulus competitive grants by the Department of Energy, Colorado ranked 15th among the 52 states and territories. Utah and New Mexico fell toward the middle of the pack, ranked 30th and 37th, while Wyoming and Montana ranked 49th and 52nd respectively.

Energy Production

Renewable energy production is growing in all five states, and there is every reason to expect continued rapid expansion. Among the five states, Montana and Wyoming stand out for their wind and geothermal potential, Utah for its solar and geothermal, and Colorado and New Mexico for strength in all three. Recent data from the wind industry, for example, shows that installed wind capacity among the five states increased by 3,000 megawatts since 1999, with more than two-thirds of that increase occurring in the past three years, 2006–2009. In Colorado, renewable energy production grew by 109 percent between 1990 and 2007.

Energy Efficiency

On a more cautionary note, the study found an uneven record for how the five states are pursuing energy efficiency—a necessary, cost-effective part of any long-term economic strategy; though Colorado has made the most progress of the five states with a newly minted, ambitious Energy Efficiency Resource Standard (EERS).

Why Colorado Leads

While Colorado has been a leader in traditional energy production, it holds vast clean energy resources as well. Colorado's political leadership has combined these resources with a commitment to clean energy and energy efficiency—setting policies to acquire 30 percent of its energy from renewable sources by 2020 and to achieving an 11.5 percent decrease in energy consumption by investor-owned utilities by 2020. By matching these policy goals with creative approaches to implementation and strategic incentive packages, the state offers both carrot and stick incentives that generate green jobs.

Colorado's mix of excellent public research institutions and skilled workforce also plays a vital role, allowing the state to cultivate expertise in engineering, computing, and scientific research, with more than 100,000 employees working in related businesses in 2008.

Five Key Steps to Future Growth
States can do a great deal to benefit their future position, and the *Clean Energy* report concludes with five keys to success needed for the region and Colorado to foster continued growth:

1) Strategic Pairing of Incentives with Clear Policy Goals. Progress depends on a smart mix of appropriate incentives and regulations, such as Renewable Portfolio Standards with meaningful targets and compliance strategies. Colorado leads the region and the nation with clean energy and efficiency mandates. By comparison, Utah has failed to create certainty for the clean energy sector with its weak renewable mandate and fossil fuel-focused energy development incentives.

2) Encourage and Capture Large-Scale Investment. To attract growing private investment and billions of federal dollars, states must have a mix of policies, incentives, and proven development expertise. Colorado again is a leader, capturing 75 percent of the total venture capital in the region and 69 percent of energy-related competitive federal stimulus funding. Montana, in comparison, failed to capture any clean technology venture capital in the period 1999 to 2008.

3) Cultivate a Well-Resourced Business Environment. Companies on the cutting edge of technological development benefit from skilled workers and access to world class research institutions. Colorado's research and high tech manufacturing industries make it a regional leader attractive to a variety of green economy businesses.

4) Leadership. Developers and manufacturers of clean energy and energy efficiency technologies operate in a highly competitive global environment, and they need to see consistent leadership in order to commit to a state. The governors of three states—Colorado, Montana, and New Mexico—all have made significant clean energy outreach efforts that have paid off with the successful recruitment of global corporations to each state and established their reputations as leaders, particularly for Colorado and New Mexico, within clean technology sectors.

5) Overcome Limited Infrastructure Capacity. To fully cultivate their renewable energy resources, the five states must overcome an inadequate infrastructure; which includes an outdated, overstressed electrical grid as well as federal, state, and local governments that currently lack the capacity and the necessary plans to respond to permits for new construction (for new facilities and transmission lines). Colorado and New Mexico were later (2007) to establish state infrastructure authorities, and Colorado in particular is limited in bonding capacity by the state's legislative cap on spending increases.

About Headwaters Economics
Headwaters Economics is an independent, nonprofit research group that assists the public and elected officials in making informed choices about energy development; www.headwaterseconomics.org.

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