



Clean Energy Leadership in the Rockies:

Competitive Positioning in the Emerging Green Economy



Photo courtesy Denver International Airport

June 2010

REPORT BRIEFING

June 22, 2010

Access the report online:

<http://www.headwaterseconomics.org/greeneconomy>

- State fact sheets
- Press releases
- State by state comparisons
- Full report

Contact:

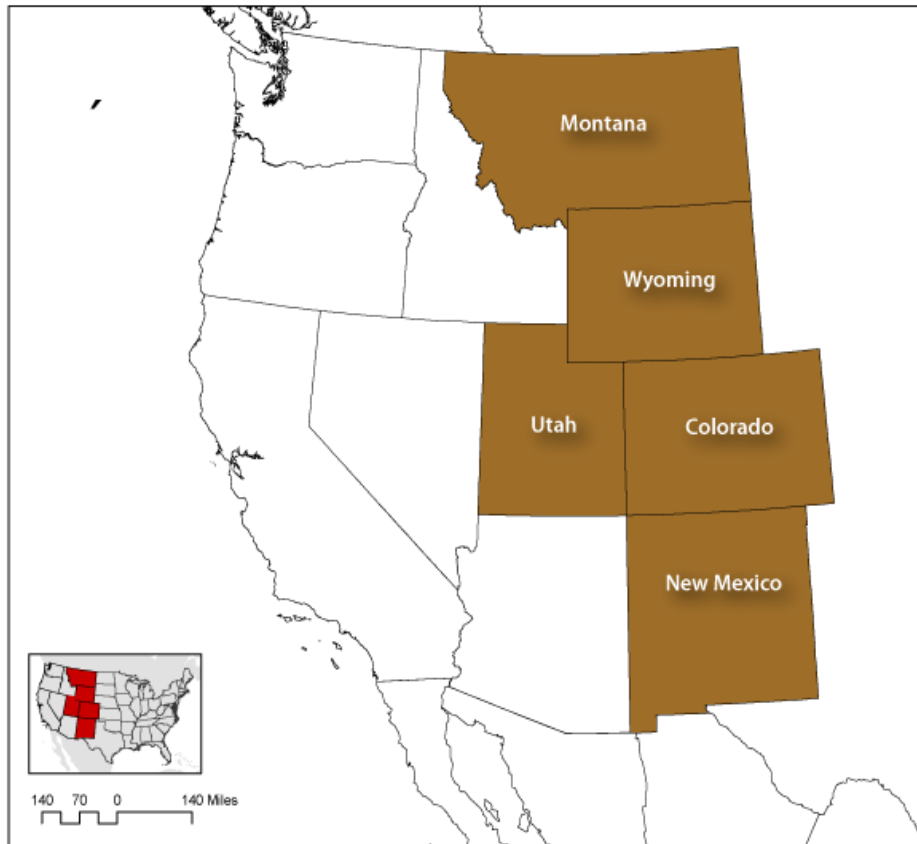
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Headwaters Economics is an independent, nonprofit research group.

Our mission is to improve community development and land management decisions in the West.

Scope & Approach



Rocky Mountain Energy Producers: **“Competitive Position Approach”**

1. Establish Opportunities around Green Economy, including Clean Energy and Energy Efficiency
2. Assess Performance for Each State
3. Consider Policy-Performance Links, Offer Recommendations

Methodology

Pe SOURCE: GREEN ESTABLISHMENT
DATABASE, COLLABORATIVE ECONOMICS

Pros

- Highly conservative, reliable
- Accurate

Cons

- Proprietary, expensive
- 2007 most recent year
- Lack of comparability to standard jobs data

• Green Jobs

- Green Establishment Database, Collaborative Economics

• Innovation: Clean Technology Patents

- 1790 Analytics/US Patent & Trade Office

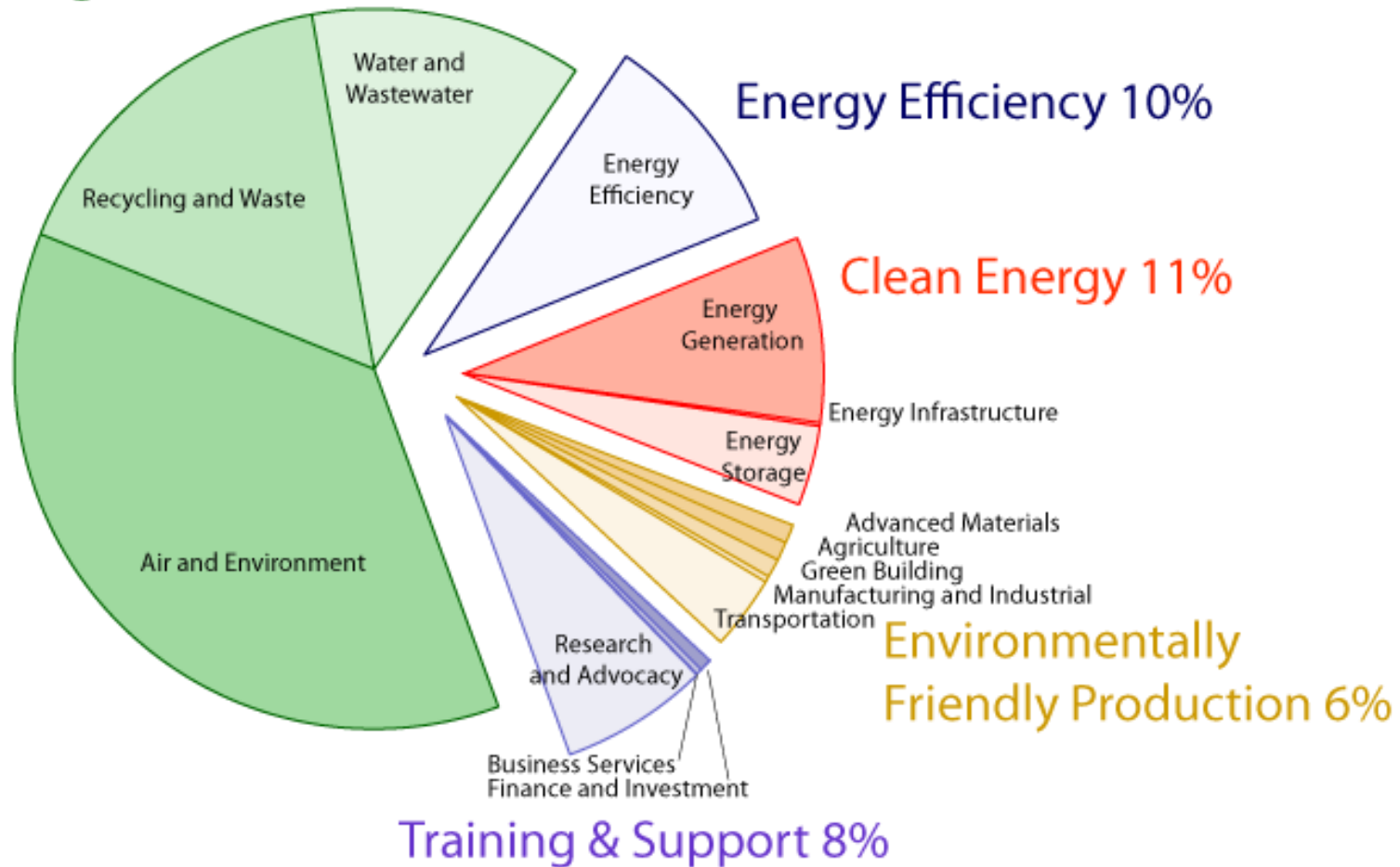
• Ability to Capture Investment

- Private Capital (Cleantech.com) and Public Investment (DOE/ARRA)

Green Economy Snapshot

Green Jobs by Category and Segment, Rocky Mountain Energy Producers, 2007

Conservation & Pollution
Mitigation 65%



Source: Green Establishment Database, Collaborative Economics. Thematic categories after Pew, 2009.

Green Economy Segments

Segment Performance Metrics, 5-State Region

Source: Green Establishment Database, Collaborative Economics.

Category	Subsegment	Number of Jobs 2007	Share of Total Green Jobs 2007	Percent Change, 1995-2007
Clean Energy	Energy Generation	2,534	8%	81%
	Energy Infrastructure	26	<1%	
	Energy Storage	1,059	4%	
Energy Efficiency	Energy Efficiency	2,939	10%	72%
Environmentally Friendly Production	Advanced Materials	210	<1%	68%
	Agriculture	323	1%	77%
	Green Building	201	<1%	56%
	Manufacturing and Industrial	55	<1%	n/a*
	Transportation	1,059	4%	31%
Conservation and Pollution Mitigation	Air and Environment	11,261	37%	43%
	Recycling and Waste	4,892	16%	14%
	Water and Wastewater	3,735	12%	-10%
Training and Support	Business Services	159	<1%	94%
	Finance and Investment	59	<1%	1375%
	Research and Advocacy	2,079	7%	-4%

State Performance Metrics

As measured by...

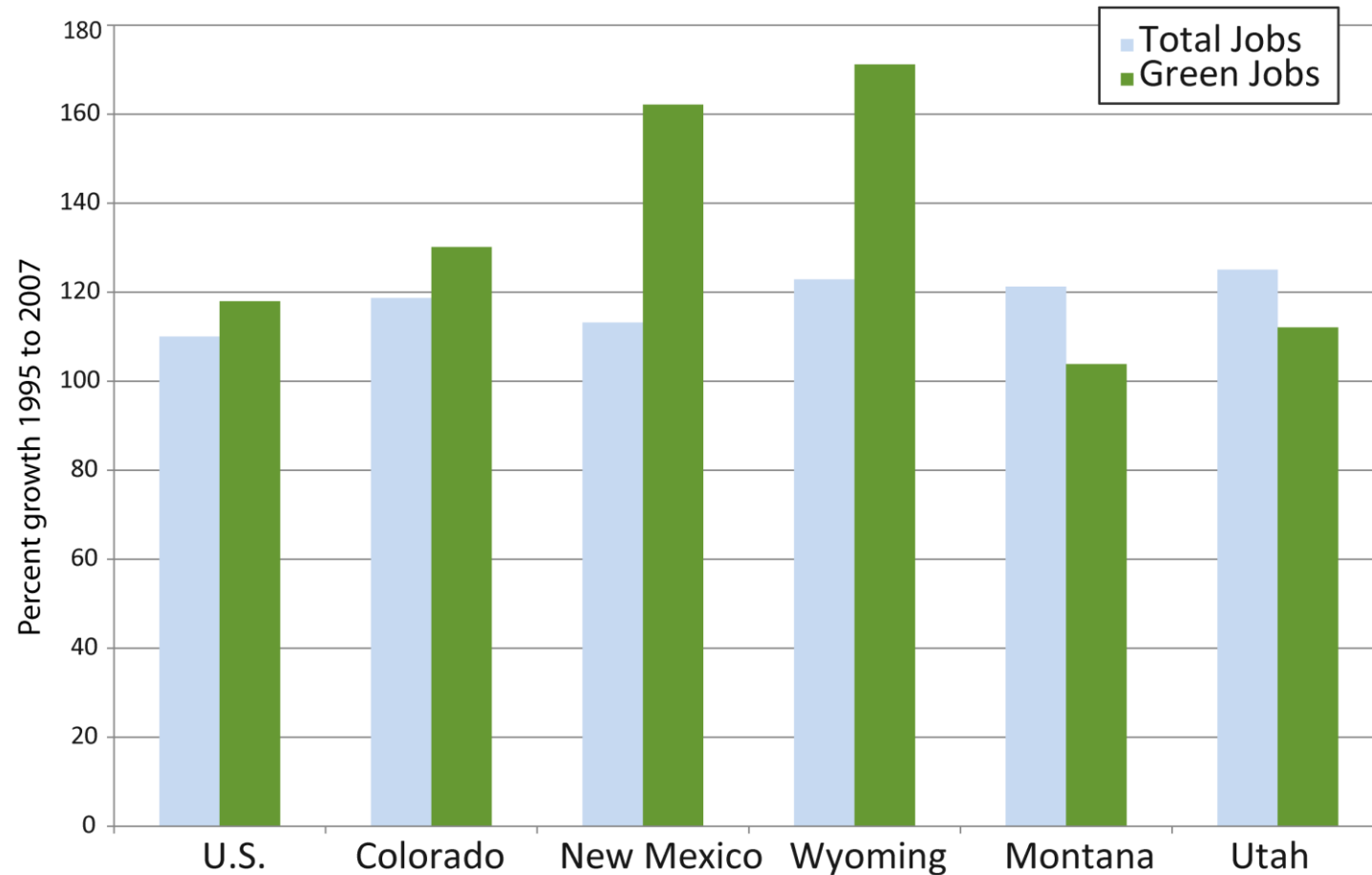
1. Job and Enterprise Creation
2. Innovation (Clean Tech Patents)
3. Investment (VC and Stimulus)

...state green economic performance:

- Colorado and New Mexico clear #1 and #2
- Utah stalled, lagging
- Montana, committed but challenged
- Wyoming, opportunity lost

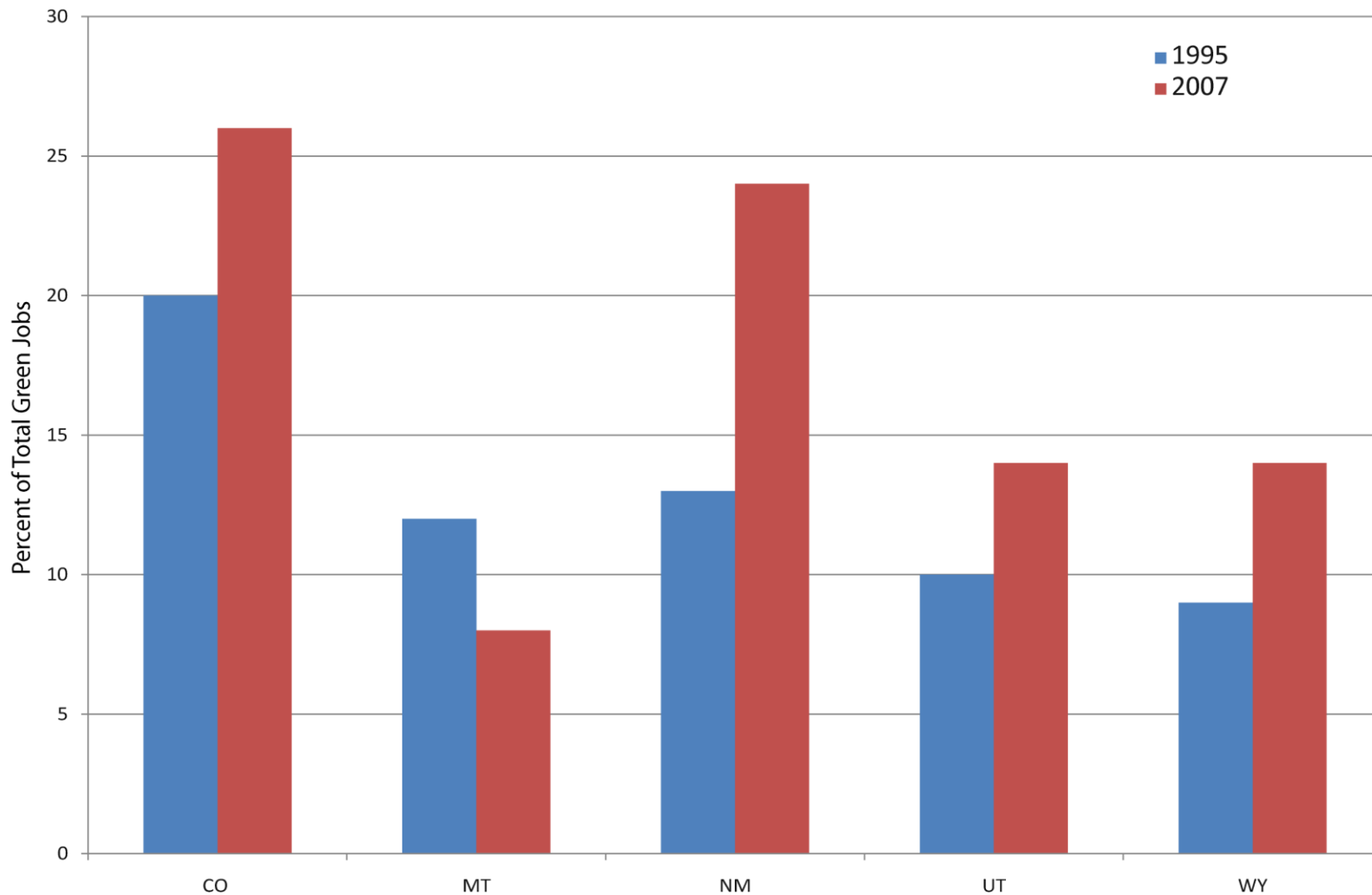
Performance Metrics: Jobs

Growth in Green Jobs by State, 1995-2007



Performance Metrics: Jobs

Clean Energy and Energy Efficiency Jobs, Share of Total Green Jobs, 1995 and 2007



Performance Metrics: Jobs

Summary: Key Points on Jobs and Enterprises

1. Green jobs small (30,591 in 5 states in 2007) but growing faster than total jobs in CO, NM, WY
2. Colorado has most jobs (55%) and enterprises (50%) in region
3. Clean Energy and Energy Efficiency sectors among fastest-growing green economic sectors
4. Colorado and New Mexico growing energy-related green jobs faster than other states

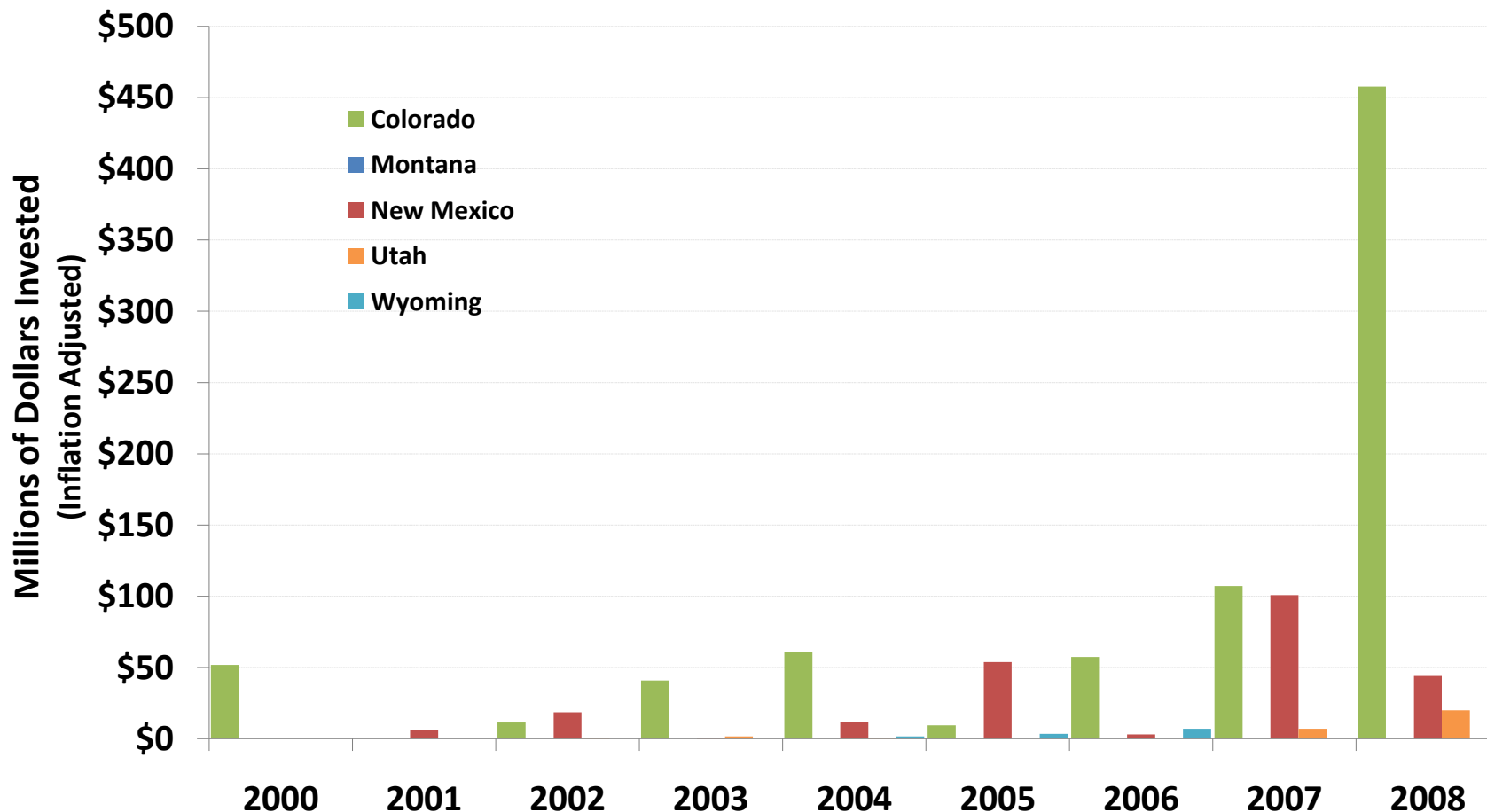
Performance Metrics: Innovation

Clean Technology Patent Performance, 1994-2008

1. Region has 4% of total U.S. Patents
2. Leading segments: Batteries, Solar Energy, Fuel Cells, Wind Energy
3. Colorado 50%, New Mexico 28%, of clean tech patents for period 1994-2008
4. Small rural states struggle

Performance Metrics: Investment

Venture Capital Investment in Clean Technology, 2000-2008



Data Source: Cleantech Group™, LLC (www.cleantech.com)

Analysis: Collaborative Economics

Performance Metrics: Investment

Clean Energy-Related DOE Federal Stimulus Funds by State

	ARRA Competitive Funds through DOE	ARRA Contract Funds through DOE*	Rank (among 52 states and territories)
Colorado	\$296,585,819	\$241,380	15
Montana	\$1,626,980		52
New Mexico	\$27,926,735	\$9,482,739	37
Utah	\$85,494,576		30
Wyoming	\$9,484,248		49

*Includes funds awarded through the Department of Energy offices: Energy Efficiency and Renewable Energy, Office of Science, Advanced Energy Research Project-Energy, and Office of Electricity Delivery and Energy Reliability. (Excludes funds awarded by DOE Office of Environmental Management).

Source: U.S. Department of Energy, Energy Efficiency and Renewable Energy, at: <http://www1.eere.energy.gov/recovery/>. Accessed April 2, 2010.

Performance Metrics: Investment

Summary: Key Points on Investment

1. Colorado and New Mexico well ahead
2. Colorado attracted \$800m in VC for period 1999-2008; 75% of total, majority coming recently
3. Colorado successful with DOE/ARRA funds, other states weaker performance
4. Poor record on innovation and investment limits options for Utah, Wyoming, and Montana

What Works

5 Keys to Success

1. Strategic Pairing of Incentives with Clear Policy Goals
2. Encourage and Capture Large Scale Investment
3. Cultivate a Well-Resourced Business Environment
4. Leadership
5. Overcome Limited Infrastructure Capacity

Policy Performance

Policy Performance: Clean Energy

Policy performance relative to national leaders

	Colorado	New Mexico	Montana	Utah	Wyoming
Prioritizing infrastructure development	O	O	✓	O	✓
Robust policy mix	✓	✓	✓	(-)	(-)
Integration tools	✓	✓	O	O	O
Strong incentives	✓	✓	✓	O	(-)
Committed leaders	✓	✓	✓	(-)	(-)

✓ = above average O = average (-) = below average

Policy Performance

Policy Performance: Energy Efficiency

Policy performance relative to national leaders

	Colorado	New Mexico	Montana	Utah	Wyoming
Utility programs	O	O	O	O	(-)
Standards	✓	O	(-)	(-)	(-)
Transportation planning	(-)	(-)	O	(-)	(-)
Emissions policies	O	(-)	(-)	(-)	(-)
Building and appliance codes	O	O	O	O	(-)

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