

## **ACKNOWLEDGMENTS**

The Southwest New Mexico Energy and Green Jobs Task Force serves as an open, effective, and ongoing forum through which a broad range of stakeholders address regional challenges in (1) developing, prioritizing, and implementing renewable energy and energy efficiency initiatives and (2) creating jobs on a sustained basis in Catron, Grant, Hidalgo, and Luna counties in New Mexico. The Task Force leverages the outside activities of member and other entities in a synergistic and non-duplicative manner while facilitating the dissemination of information, building additional capacity, creating strategic partnerships, and providing policy recommendations to Senator Bingaman and others.

*The Southwest New Mexico Energy and Green Jobs Task Force would like to thank:*

**Senator Jeff Bingaman, for his leadership in convening and supporting the task force.**

**The Southwest New Mexico Energy and Green Jobs Task Force workgroup members, who dedicated countless hours in service to the region:**

Kurt Albershardt  
Brian Duniho  
Marco Grajeda  
Wes Hooper  
Larry Martinez  
Dara Parker  
Jerry Welch

Gabriel Boyle  
Alisha Esquivel  
Anthony Gutierrez  
Priscilla Lucero  
Cissy McAndrew  
Arlene Schadel  
Gordon West

Maureen Craig  
Melanie Goodman  
Paul Gutierrez  
Mary Mackey  
Jennifer Montoya  
Nick Sussillo  
Bonnie Zelinko

**Mary Stoecker, for facilitating the workgroup through the planning and writing process.**

**Senator Tom Udall and Senator Martin Heinrich for continuing support of the Task Force on the retirement of Senator Bingaman.**

## **EXECUTIVE SUMMARY**

The Southwest New Mexico Energy and Green Jobs Task Force developed this Regional Strategic Plan based on a belief that a combination of policy, proactive education, innovative financing models, and creative and flexible infrastructure development combined in a practical and cost effective manner will achieve the vision of an innovative regional economy known for its favorable clean energy business environment and exceptional quality of life.

This plan addresses energy reduction, clean energy jobs (direct and indirect), and regional competitiveness from a systems context. For example, the Task Force asked the question, “How can we as a region need less energy rather than simply maintain current usage more cheaply?”

A commitment to fiscal responsibility and environmental stewardship increases demand for efficient and clean energy products and services. Cost savings and other benefits are realized for local government while demonstrating to community residents and businesses what is possible, stimulating the local economy, and creating jobs.

With local government leading the way, our regional market is transformed so that it sustains itself through the development of business and customer interest, workforce education and skills, financing tools, business networks and infrastructure, and public/private partnerships.

Local government has jointly addressed other, connected, issues that impact energy efficiencies and job creation. Transportation, waste management, and economic development are just a few. While regional partnerships are not easy or without barriers, take constant attention, and close communication between governmental entities, staff, and community there are both real and theoretical examples in place such as: the Stronger Economies Together “Memorandum of Understanding” signed in 2011 and the Southwest Regional Transit District Joint Powers Agreement signed in 2007.

The following plan recommendations address the most critical actions needed over the next 1 to 5 years and each recommendation has a one-page, detailed segment.

- Create a Regional Office of Clean Energy Development and Sustainability.
- Increase energy efficient construction and retrofits for regional government and community buildings.
- Increase regional energy independence, price predictability, and economic development by promoting, supporting, and implementing large and small scale renewable energy electricity and fuel projects.
- Create standardized policies that further EERE that can be adopted across the region.
- Maintain, grow and develop new and existing regional financing mechanisms to support EERE projects.
- Enhance understanding of EERE regionally to promote demand for EERE, associated business development, and buying locally.
- Create a regional Entrepreneurial Development Association.
- Support regional and state economic development, entrepreneurship, and business support capacity.
- Align the needs of the regional workforce to be prepared for EERE industry growth and meet the needs of current employers.
- Evaluate and support transportation decisions and investments with EERE considered as an important factor.

## INTRODUCTION

### Vision

*To be an innovative and sustainable regional economy known for its favorable clean energy business environment using energy as a cornerstone of economic growth, exceptional quality of life, commitment to rural character, and world class energy performance.*

### History

Realizing businesses, consumers, and local government in Catron, Grant, Hidalgo, and Luna counties had similar goals and challenges related to energy efficiency and renewable energy (EERE) and economic growth, the Southwest New Mexico Energy and Green Jobs Task Force was convened by Senator Bingaman and his field staff in April of 2010. The Task Force brought together all of the entities that have a role in addressing EERE including local governments, federal and state agencies, businesses, financial institutions, educational and research institutions, non-profit organizations and interested constituents. Its mission is:

*To serve as an open, effective, and ongoing forum through which a broad range of stakeholders will address regional challenges in (1) developing, prioritizing, and implementing renewable energy and energy efficiency initiatives and (2) creating sustainable, “clean” jobs in Catron, Grant, Hidalgo, and Luna Counties.*

This plan represents a detailed road map to achieving regional energy goals in both the near and long term. It is intended to be flexible; complement existing city, county, village and town comprehensive, master, or economic development plans; and to be used.

It outlines specific recommendations for the region to encourage energy reduction actions as well as the creation of, for example, clean energy jobs. It is intended to complement both Southwest New Mexico Council of Government’s 2015 Comprehensive Economic Development Strategy and the mission of the Southwest New Mexico Regional Economic Development Partnership, a Stronger Economies Together (SET) initiative. Values the Task Force held true to in development of this plan include:

- Regional self-reliance, including energy, food, shelter, transportation, and economy
- Regional communication, collaboration, cooperation, and confidence in ongoing collaborative processes such as the Southwest Regional Transit District (SWRTD), SET Memorandum of Understanding, and the Southwest Regional Housing Community Development Corporation
- Projects that are affordable and demonstrate a return on investment (ROI) that can be effectively sustained over the appropriate life of the project
- Projects that create jobs as well as projects that expand the tax base are both valuable to the regional economy
- Economic development efforts that represent a balance of large projects that bring local, outside investment, and grow local small businesses
- Integrity of rural character and natural landscapes

## SWOT ANALYSIS

Internal	Strengths	Weaknesses
	<ul style="list-style-type: none"> <li>• Renewable energy resources (solar, wind, biomass, geothermal, algae biofuels)</li> <li>• Natural gas pipeline through Luna and Hidalgo Counties</li> <li>• Plans for large scale transmission lines through Luna and Hidalgo counties</li> <li>• Abundance of available land with low land costs, including brownfields</li> <li>• Expertise with EERE projects</li> <li>• Western New Mexico University (WNMU)</li> <li>• Small Business Development Center</li> <li>• Innovative attitudes</li> <li>• High quality of life &amp; rural character</li> <li>• Part of the border economy</li> <li>• Political support for EERE, regional partnerships and collaboration</li> <li>• I-10 corridor including railroad</li> <li>• Generally high-quality, well-maintained state and county highway and road systems</li> <li>• Workforce is willing to commute</li> <li>• Improved recycling programs</li> <li>• Regional MOUs</li> <li>• Workforce sectors with transferable skills for green jobs and industry partners are working with state workforce board on transferring skill sets</li> <li>• Residents who are industry experts/mentors</li> </ul>	<ul style="list-style-type: none"> <li>• Workforce is not yet adequate to support all planned EERE projects</li> <li>• Weak education indicators</li> <li>• Inconsistent employment &amp; career prospects</li> <li>• Insufficient transmission</li> <li>• Insufficient market development</li> <li>• Need more comprehensive networking, communication, and information dissemination</li> <li>• Inability for the region as a whole to effectively analyze return on investment, costs, and benefits for EERE projects</li> <li>• Insufficient resources for forest restoration and associated economic development</li> <li>• Lack of diversified economy</li> <li>• Weak knowledge of how to vet companies and projects</li> <li>• Insufficient housing including affordable housing</li> <li>• Insufficient water infrastructure</li> <li>• Water scarcity</li> <li>• Need more transportation options including improved rail and public transit</li> <li>• Loss of core workforce</li> </ul>
External	Opportunities	Threats
	<ul style="list-style-type: none"> <li>• Interest in the region for commercial scale solar installations</li> <li>• Stronger competitive position if partnered</li> <li>• Tourists increasingly look for eco-experiences</li> <li>• Price of solar PV is decreasing significantly</li> <li>• Growing trust in partnered economic development</li> <li>• Workforce recruitment and expansion of technical training opportunities at WNMU</li> <li>• Further partnerships with NMSU and WNMU</li> <li>• Development of regional water infrastructure</li> <li>• Water conservation planning</li> <li>• Establish formal county and municipal economic development incentives, policies, and funding sources to support EERE industries</li> <li>• Enhance available support for start-ups and early-stage companies</li> <li>• Enhance available capital for start-ups and early-stage expansions</li> </ul>	<ul style="list-style-type: none"> <li>• Competition between counties and/or other states</li> <li>• Potential changes to PNM’s renewable energy credits (REC) program</li> <li>• Limited local access to capital deters start-up and existing companies</li> <li>• Policies and resources not in place to help retain and grow existing industries and businesses, recruit targeted industries, or sustain critical rural business and community assets expansions</li> <li>• Training gap in workforce</li> <li>• Market tendency to pursue projects without sufficient system context analysis</li> <li>• “Wheeling”</li> </ul>

## COMMONALITIES

Commonalities within the region as a whole are important in identifying ways to work more closely together on economic development and other areas. The region enjoys strong competitive and unique advantages.

Given the availability of undeveloped, relatively inexpensive land (federal, state, and private) in the region, and its proximity to large electricity markets to the west, like Phoenix, there is a demand to develop these natural resources on a commercial scale. There is also a drive to undertake EERE renewable energy projects to provide needed electricity within the region, as the solar, wind, geothermal, and biomass resources within the four counties exist as the best in the nation.

Climate and terrain is similar throughout much of the region, though it is most similar in Catron and Grant counties (more mountainous and hilly, forested, cooler), and in Luna and Hidalgo counties (more flat, desert, hotter). The entire region is rural and boasts a strong agricultural presence. The largest municipality is Deming with a population in 2011 of approximately 15,000 people. The Wellness Coalition works in the four counties to provide youth and young adult programs including trail building, forest restoration, GIS mapping, workforce development training and education, preparation for and transition to higher education.

Local governments all have comprehensive plans which can be used as a basis for regional planning and have approved the Local Economic Development Act (LEDA) ordinance so that they can administer funds from the state to private E-based companies.

The Southwest New Mexico Council of Governments (SWNMCOG) is an important resource for planning, support, and coordination throughout all four counties. Through the Stronger Economies Together (SET) initiative, all local governments signed a Memorandum of Understanding in 2011 agreeing to the “establishment of an orderly regional economic development process to facilitate economic, educational, and general community development in our region.”

The broader regional economy has important linkages, including a shared labor pool, a multi-county university system, and strong partnerships between regional employers and educators. With respect to education and workforce development, Western New Mexico University (WNMU) provides classroom and online education regionally. WNMU has the ability to include new fields of study and curriculum into their bachelor’s degree programs, build on existing, nationally recognized green jobs training programs used at other New Mexico colleges; partner with regional school districts in workforce readiness and vocational and technology (Vo-Tech) training for high school students; and partner with the Southwestern New Mexico Workforce Connection in implementing state supported trainings such as the State Energy Sector Partnership’s “PV Academy.”

Throughout the region, quality of life is an important consideration for residents, businesses, and potential developers. Tourism is an opportunity for significant economic development; recreational activities including the public land, historical sites, and other outdoor key components. Increased EERE projects in the region could attract more of the eco-traveler. Transportation is similar in the four counties given their rural nature with rail access in three of the four counties. A Regional Transit District has been formed and facilitates bus transportation between major points in the area. Economic development resources are similar where locally owned banks are more prevalent than national banks.

Common barriers such as multi-county and municipal government agreements, the need for ongoing collaboration, reliable internet access, water availability, and electrical transmission capabilities need to be overcome.

**MEMORANDUM OF UNDERSTANDING**  
**PROVIDING FOR ECONOMIC DEVELOPMENT**

THIS AGREEMENT is by and between Catron County, New Mexico, Grant County, New Mexico, Hidalgo County, New Mexico, and Luna County, New Mexico, (Counties), the City of Deming, New Mexico, the City of Bayard, New Mexico, and the City of Lordsburg, New Mexico, (Cities), the Town of Hurley, New Mexico, the Town of Silver City, New Mexico, (Towns), and the Village of Columbus, New Mexico, the Village of Reserve, New Mexico, the Village Santa Clara, New Mexico, and the Village of Virden, New Mexico (Villages), and the SW New Mexico Council of Governments (SWNMCOG). It is agreed and understood that the Boards of County Commissioners, City Councils, Town Councils, Village Boards of Trustees, and the SWNMCOG Board of Directors shall act on behalf of the Counties, Cities, Towns, Villages and SWNMCOG respectively to plan and support regional economic development opportunities and projects to include efforts to form public and private partnerships.

WHEREAS, it is the opinion of the Counties, Cities, Towns, Villages, and the SWNMCOG that this Memorandum of Understanding will support regional strategies for new economic opportunities, will support the creation of jobs, and will enhance the quality of life in the region (Counties, Cities, Towns and Villages identified above).

**PURPOSE AND SCOPE**

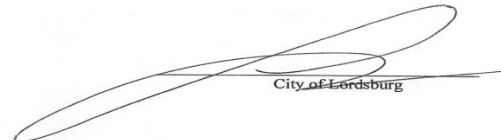
THIS AGREEMENT is a result of the combined initiative of the Counties, Cities, Towns, Villages, and the SWNMCOG, such as the Southwest Regional Economic Development Partnership and the Southwest New Mexico Energy and Green Jobs Task Force. Its purpose is to provide for the establishment of an orderly regional economic development process to facilitate economic, educational and general community development in our region.

Southwest New Mexico Energy and Jobs Regional Strategic Plan



Hugh B. McLean  
Catron County

Catron County



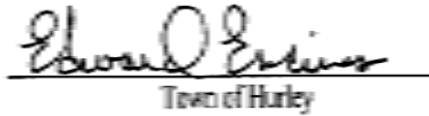
City of Lordsburg

City of Lordsburg



Bruce Porter 9.22.11

Grant County



Edward Erwin  
Town of Hurley

Town of Hurley



James R. Marshall  
Town of Silver City

Town of Silver City



Hidalgo County

Hidalgo County



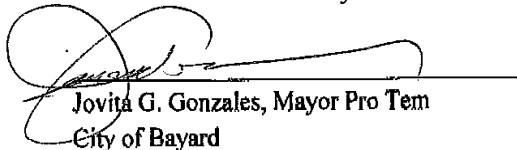
Luna County

Luna County



Nicole S. Lawson  
Mayor Village of Columbus

Village of Columbus



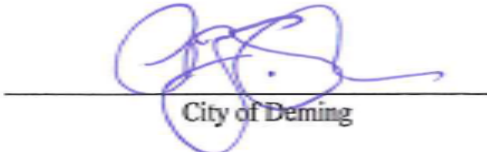
Jovita G. Gonzales, Mayor Pro Tem  
City of Bayard

City of Bayard



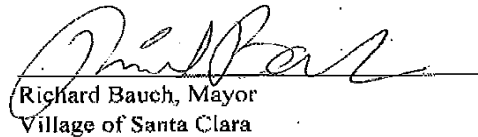
Constance Cordell-Wehrheim

Village of Reserve



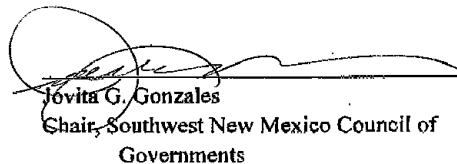
City of Deming

City of Deming



Richard Bauch, Mayor  
Village of Santa Clara

Village of Santa Clara



Jovita G. Gonzales  
Chair, Southwest New Mexico Council of  
Governments

SW New Mexico Council of Governments



Archie W. Payne

Village of Virden

## EARLY SUCCESS

As active participants in the Task Force from its inception, local governments and economic developers recognize the value of pursuing efficiency, renewable energy generation, as well as energy-specific economic development projects. Government agencies spend over \$10 billion a year on energy to provide public services and meet constituent needs. As counties and municipalities struggle with tightening budgets, typically one-third of the energy they pay for goes to waste.

In addition to reducing the cost of county and city government, other benefits of EERE initiatives include promoting partnerships with the private sector to create jobs, providing better services to residents. Educating and engaging residents about the benefits of energy efficiency and reducing their own energy consumption, which, in turn, helps them save money and improve their quality of life.

The municipal and county governments in southwest New Mexico within the counties of Catron, Grant, Hidalgo and Luna deserve praise for progress in improving energy efficiencies within local government operations, use of renewable sources of energy, and work toward supporting job creation. These initiatives have achieved cost savings, green house gas emission (GHGE) reductions, and contribute to a foundation for a strong, sustainable regional economy.

Early success examples include:

### **Solar Photovoltaic (PV):**

- 2011 *Town of Silver City*: Solar Covered Parking Structure  
Generate 100% of the electricity while providing shaded parking for the Visitor Center and \$3,200 in savings to over first year of operation
- 2013 *Town of Silver City*: Wastewater Treatment Plant Solar Development  
Provide PV-generated electricity; estimated over \$1,500,000 saving over 20 years

### **Lighting:**

- 2010 *Lordsburg*: Lordsburg Middle School Cafeteria  
6% energy reduction from 2010 baseline
- 2010 *Hidalgo County*: Courthouse Performance Energy Audit  
Upgrade county buildings per audit recommendations; 61% energy reduction from 2010 baseline
- 2012 *Deming*: Deming City Hall PNM Energy Efficiency Program  
Lighting fixtures/bulbs have been changed to LED; using 2011 data as baseline, there has been an 18% savings in kilowatt hour

### **Agriculture:**

- 2012 *White Signal*: Bar VK Ranch Upgrades  
\$15,130 REAP grant to offset \$60,522 cost of solar array; enough power for electric pumps that supply water to ranching operations, including drinking water to livestock and crop irrigation; power grid-tied system will sell any extra power produced to PNM under the terms of a 12-year agreement.

### **Energy Systems Upgrades and Optimization:**

- 2012 *Silver City*: Murray Hotel  
Rehabilitate 70+ year old abandoned hotel with high performance windows, roof & wall insulation, cool roof, new hydronic heating with high efficiency natural gas boilers, evaporative cooling system with EC fan motors, comprehensive direct digital control system, low flow toilets & showerheads; 10 permanent FTE's currently, with 30+ expected by 2014 with restaurant and banquet operations; energy use on track to be 75% below industry norms.
- 2011 *Deming*: Compass Components



## Southwest New Mexico Energy and Jobs Regional Strategic Plan

REAP grant to add PV; generate 100% electricity from solar and have improved lighting efficiency; 2010: 600,000 kWh usage/2012: 61,000 kWh usage; expected ROI in 6 years (received the 30% federal and 10% state tax credits and federal deduction); 95 employees

- 2010-2012 *Grant County*: Energy \$ense Program  
The Grant County and Silver City Joint Office of Sustainability (JOS) developed the Energy \$ense Program that assisted residents improving energy efficiencies in 827 homes. 47% were located outside city limits (county residents) with a combined annual energy cost savings to those homeowners of over \$51,000.

### **Energy Infrastructure:**

- 2011 *Luna County*: Macho Springs  
50 megawatt (MW) wind project projected to bring \$8 million in revenue to Luna County; 150 temporary construction jobs and 7 full-time jobs
- 2012 *Hidalgo County*: Lighting Dock  
Geothermal power plant with a planned generation capacity of 14.75 MW; the economic impact in royalty payments will be approximately \$1.5M to Hidalgo County over 20 years; 8-10 permanent plant jobs when the project is completed.
- 2011 *Luna County*: Sapphire Energy  
First commercial scale renewable crude oil algal bio-refinery; contributed \$14 million to the regional economy last year (2011-2012); employs 180 people full-time; has moved into Phase 2

### **Business System and Infrastructure Efficiencies:**

- 2011-Reserve Sawmill Reorganization:  
Reorganization of the sawmill “line” so equipment and staff are more efficient; found markets for ALL material so not creating waste

## GOALS, OUTCOMES, AND STRATEGIES

In southwest New Mexico, local governments are leading by example with growing leadership, direct control over their own resources and infrastructure, and enhanced financing options they are uniquely positioned to continue to drive regional EERE efforts. This plan primarily targets its recommendations towards helping community members and local governments pursue energy goals within a regional framework of cooperation, pooling of resources and economies of scale, and concrete steps the region can take to create the conditions necessary to grow jobs and enhance regional competitiveness.

The Southwest New Mexico Energy and Green Jobs Task Force believes that a combination of policy, education, financing, and infrastructure development combined in a practical and cost effective manner will achieve the vision of an innovative regional economy known for its favorable clean energy business environment and exceptional quality of life.

In developing the recommendations in this plan, four overarching goals were developed:

1. *Create, retain, or fill local jobs.*
2. *Decrease energy usage from the 2011 baseline in the areas of electricity, natural gas, and transportation fuel.*
3. *Decrease energy expenses from 2011 baseline.*
4. *Increase energy independence and make energy costs more predictable and controllable.*

As well, primary consideration was given to the following factors as recommendations were developed and prioritized for inclusion in this plan:

- Return on investment, cost-benefit analysis, and market value
- Potential for job creation
- Overall economic, environmental and social impacts
- Ease of implementation
- Whether the practice recommended could be continued sustainably into the future

An additional goal is saving local governments and residents' money. Energy prices from fossil fuel sources are expected to increase 3 - 5% per year over the next 20 years, while the cost of many renewable technologies like solar water heaters, and solar photovoltaic are decreasing with wider use.

The Task Force linked this plan to related individual and regional efforts and built upon past experiences in the region. For example, the 2009 Town of Silver City Climate Action Plan and Addendums have been implemented and have resulted in many real savings for Silver City. The Grant County Economic Development Master Plan includes an energy planning portion and the SWNMCOG's 2010-2015 Comprehensive Economic Development Strategy includes renewable energy strategies that mirror those in this plan. Municipal and county comprehensive plans include features that dovetail with this plan and can be found on the SWNMCOG's website [www.swnmcog.org](http://www.swnmcog.org).

Combining the information developed by the two Task Force workgroups:

1. Regional Vision and Strategic Plan Workgroup and Market Development Through Outreach
2. Education Workgroup

along with indicators and strategies suggested by complimentary plans, the recommendations are organized to coordinate with the outline on the following page.

**AIM: Strengthen the local economy in Catron, Hidalgo, Grant, and Luna counties through a framework of regional partnership, energy efficiency, and renewable energy.**

## Southwest New Mexico Energy and Jobs Regional Strategic Plan

<b>Outcome Measures</b>	<b>Date Achieved</b>
Local governments accept and support implementation of this Plan	August 2013
Reduce natural gas & electricity usage (local governments and residents) by 10% from 2011 baseline	2020
Decrease energy expenses (local governments and residents) by 10% from 2011 baseline	2020
Improve employment numbers in the four counties by 10% from 2011 baseline	2020
Increase locally generated energy by 10% in all counties from 2011 baseline	2020

### **Strategy 1: Varied Financing Structures**

<i>Indicators</i>	
• Regional Revolving Loan Fund	January 2014
• Regional Local Financing Models Active	June 2014
• Local Investment Opportunity Network Developed	June 2014
• Appraisal Structure Valuing Energy Efficiency and Renewables Developed	June 2014

### **Strategy 2: On-going Education for Consumers, Businesses, Financers, Local Government**

<i>Indicators</i>	
• Website hits from baseline (start-up date) increase 15%	June 2020
• Attendance at training programs increases 10% from baseline (start-up date)	June 2020
• Regional Vo-Tech program with WNMU and high schools partnership	September 2015

### **Strategy 3: Policy Changes**

<i>Indicators</i>	
• Regional local governments energy use policies adopted	December 2014
• Update land use policies including mixed use, sustainability features, multimodal transportation, water conservation, urban gardening, etc.	December 2014

### **Strategy 4: Regional Physical and Capacity-building Infrastructure Development**

<i>Indicators</i>	
• Regional Office of Clean Energy Development and Sustainability with budget line item in all local governments	January 2014
• Regional Entrepreneurial Development Association and Incubator	December 2014
• Southwest New Mexico Green Chamber of Commerce increased regional membership by 10% from 2011 baseline	June 2014

## RECOMMENDATIONS AND ACTION PLAN

### 1. Create a Regional Office of Clean Energy Development and Sustainability

#### *Recommendation Statement:*

The four county region support the creation of a Regional Office of Clean Energy Development and Sustainability to oversee implementation of the Regional Strategic Plan and develop, promote, implement and manage energy efficiency, conservation, and renewable energy projects and programs, and partner in jobs creation.

#### *Rationale:*

1. The creation of the Office has been a strategic priority in successful plans developed and implemented in other cities and counties.
2. EERE projects and related economic development can be simple but as they scale up for bigger revenue and savings, they can become complicated to execute without prior experience. In order to best realize the benefits of EERE initiatives using less time, effort and resources, it is important to have a knowledgeable staff dedicated to these projects on an ongoing basis with the expertise to effectively accomplish necessary tasks
3. It may be more difficult for smaller communities to achieve results with staff working alone and so all benefit by sharing staff and lessons learned
4. The regional model utilized by the SWNMCOG has worked well and could be emulated and with at least one staff person in each county.

#### *Implementation Plan:*

- Submit a joint request to the Department of Energy, Minerals and Natural Resources and the Department of Workforce Connections, USDA Rural Development's Rural Business Opportunities Grant, or other programs to fund the startup of the regional Office. After Start-Up, each community will also contribute a percentage of the Office operations costs by establishing a line item for the Office in its budget.
- Create an Advisory Board, or utilize the Southwest New Mexico Energy and Green Jobs Work Group with representation from throughout the region to work with the Office and assist in communication with the local governments, oversight, and accountability.
- Develop an Office and Advisory Board Infrastructure Plan and Scope of Work, recruit Advisory Board members, and hire staff.
- Create a local government and residential baseline based on the outcome measures and indicators.

#### *Additional Considerations:*

A Grant County Building Lighting Assessment completed by the Joint Office of Sustainability (JOS) indicated, if implemented, energy cost saving of over \$6,000/year with a six year return on investment (ROI.)

The February 15, 2012 report, "Cost/Benefit Analysis for the Joint Office of Sustainability (JOS)," showed a real savings to the Town of Silver City's municipal budget of \$253,645 per year. From the 2009 baseline alone, for 16 traffic lights that were converted to LED, a 46% reduction in energy (108,794kWH) has been recorded.

Within the four counties, 2 to 4 local jobs will be directly created for the Office while others will be retained. Indirect job creation will include those created by projects and business development supported and/or enabled by the Office and will use the standard formula of "for every one job created, three indirect jobs result."

## **2. Increase energy efficient construction and retrofits for regional government and community buildings.**

### *Recommendation Statement:*

The Regional Office of Clean Energy Development and Sustainability will partner in the support and continued development of local government and community initiatives to decrease energy usage, decrease energy expenses, and increase energy independence through efficient building technologies and design and avoided energy use initiatives.

### *Rationale:*

1. Buildings account for more energy use than any other sector in the United States. The Energy Information Administration estimates that in 2010, buildings consumed 41% of total U.S. energy consumption. A National Academy panel found that energy efficiency in buildings offered the greatest possibility for U.S. energy savings.
2. Buildings have useful lives of many decades so investments provide benefits for years.
3. Support and build on existing programs and past work to educate government and individuals on the benefits.
4. Energy savings lead to economic development.

### *Implementation Plan:*

- Explore Performance Energy Audits (PEAs) as a means to identify energy savings areas of all government buildings and Energy Savings Performance Contracts (ESPCs) to reduce upfront costs for EERE implementation.
- Establish requirements for energy efficient product procurement, work to form aggregated purchasing pools, and proper training for operations and maintenance staff
- Identify the largest energy users in the region.
- Support existing programs that assist residential and commercial building owners and renters in performing energy audits, weatherization, and renewable energy development.
- Conduct extensive research and stakeholder outreach to understand how adoption of a Regional Efficient Building and Energy Program would impact local governments, building industry, residents, and local businesses; and to determine which energy measures would provide the most cost effective energy savings.
- Work with Green Build NM, Energy Star and National Homebuilders Association inspectors and others to strengthen inspection services and training.
- Assure EERE projects are prioritized within local government Capital Infrastructure Improvement Plans.

### *Additional Considerations:*

The New Mexico Finance Authority approved a language change allowing local government to request 100% of the cost for energy audits/assessment for up to \$50,000.

The Climate and Air Pollution Planning Assistant model (CAPPA) indicates that a 10% improvement in the energy efficiency of an average government building of approximately 100,000 square feet would achieve a cost savings of \$20,727 per year, with 7.2 years ROI.

A possible direct job creation of up to 10 in the region, if the region decides to train and hire people to perform residential energy audits and install retrofits. The Center for American Progress in their September 2010 document, "Efficiency Works: Creating Good Jobs and New Markets through Energy Efficiency" estimates an upfront, nationwide investment of \$290 billion in labor-intensive efficiency measures could create between 500,000 and 750,000 jobs by 2020.

**3. Increase regional energy independence, price predictability, and economic development by promoting, supporting, and implementing large and small scale renewable energy electricity and fuel projects.**

*Recommendation Statement:*

Through policy, financing, and infrastructure development strategies, local governments implement or support renewable energy generation projects for 1) individual and community-level use 2) regional use and 3) utility-scale energy generation projects for energy export.

*Rationale:*

1. Southwest New Mexico is rich in renewable energy resources including solar, geothermal, wind, and biomass. This region is the second-strongest solar resource in the U.S. The national forest adds potential for biomass utilization.
2. There is a potential to strengthen seasonal energy availability and lower cost for agriculture with micro-hydroelectric systems in irrigation canals and solar pumps.
3. There is often a low operating cost for renewable electricity projects after the initial project development and contracting is completed.
4. New Mexico electric utilities have a mandate under the Renewable Portfolio Standard to provide renewable energy in the amount of 20% of retail sales to New Mexico customers in kilowatt hours by 2020.
5. Site and permit processes for solar development is already underway within the region. The NREL/EPA Repowering America program is assisting Freeport McMoRan and the City of Deming's Peru Mill site with feasibility studies on the use of their tailings fields for large scale solar developments.

*Implementation Plan:*

- Implement the 2011 Stronger Economies Together (SET) Memorandum of Understanding (MOU)
- The Office with Advisory Board increase regional capacity to create and respond to renewable energy generation opportunities by completing a regional feasibility study that includes: 1) usage(s); best choice of technology, expected cost of, and most cost effective means of the 2) installation(s) land requirements and costs, apparent legal obstacles, detailed costs and ROI calculations, financing and appraisal models, and other relevant data.
- Communicate the results of the feasibility study to relevant potential partners/users.

*Additional Considerations:*

The Macho Springs Wind Generation project provided 150 temporary construction jobs and 7 full-time and is projected to bring \$8 million in revenue through the Luna County's taxing authority over its 20 year lifespan

Sapphire Energy, the first commercial scale renewable crude oil algal bio-refinery contributed \$14 million to the regional economy last year and employs 180 people full-time, 70 of which are local (MVEDA).

Recent reviews of existing data suggest that the renewable energy sector is a more prolific job supporter per unit of energy generated/delivered or dollar invested (Wei et al., 2010; Kammen et al., 2004) with PV creating the most direct employment per unit of energy output

Eight direct jobs are created per megawatt for wafer and cell production, and approximately three direct jobs per megawatt for PV modules and other equipment. (Wei et al., 2010; Kammen et al., 2004)

State and federal tax credits for residential customers who install solar are currently at 10% (NM) and 30% (federal) of total cost, with no cap, through 2016.

#### **4. Create standardized policies that further EERE and can be adopted across the region.**

*Recommendation Statement:*

Policies and permitting processes should be developed and implemented on a regional basis while advocating for similar state policies that create demand for sustainable energy use and efficiency and remove barriers to local EERE business development and job creation.

*Rationale:*

1. Strong, well-researched policies provide a road map for local government, lead to behavioral changes in operations and maintenance procedures, remove barriers to sustainable local business development, and are cost effective.
2. Regional policies build cooperation and collaboration between local governments and residents and create a larger and more predictable market.
3. The 2013 NM Legislature passed numerous bills that have the potential to “level the playing field for NM small businesses, support local businesses, and support New Mexico’s transition to a clean energy economy.”
4. Creation of a rural, regional EB-5 Investor Program or participation in an existing program to bring outside capital to build businesses and jobs.

*Implementation Plan:*

Regional Office of Development and Sustainability research and develop polices to address, for example:

- Improved energy efficiencies and indoor environments that deliver significant energy bill savings for government buildings, residences, and businesses including water conservation policies
- The creation of a system of local financing options (see Recommendation 5)
- Land use that encourages mixed use and density near major transportation routes within each county and encourages energy production at the location
- Local government and community multi-modal transportation
- Regional volume discounts for procurement of EERE technologies and more
- An incentive system with rewards for EERE including use of passive solar design and an incentive package to attract EERE businesses
- Distributed generation
- Reinvestment of savings into new projects
- Business growth, especially for the smallest businesses, with policies such as Workers Compensation reform at the state level
- Barriers to implementing EERE actions the region does not have the transmission capacity (e.g inability to “wheel”-generating power into the transmission line and moving it to point of sale)

*Additional Considerations:*

There is no initial upfront cost to policy development if regional staff is in place. Benefits relate directly to the policy approved and implemented. For example, the implementation of the Town of Silver City’s Water Conservation Policy and Plan is estimated to bring \$50,000 in grant money resulting in a revenue neutral solution and a more efficient water management system.

An Energy Star level of insulating, alone, can save up to 20% on heating and cooling costs and up to 10% on total annual energy bills.

Use of resilient materials lowers insurance rates and long term maintenance costs thereby increasing disposable income, improving economic activity and gross receipts tax (GRT), and spurring increased investment in business growth.

**5. Maintain, grow, and develop new and existing regional financing mechanisms to support EERE projects.**

*Recommendation Statement:*

A wide array of financing and investment options be developed and/or promoted that will lead to a means to mitigate upfront costs of implementing EERE projects, benefits, and job creation, thereby creating a growing residential, commercial, and governmental market for EERE products, businesses, and policy.

*Rationale:*

1. Many residential and commercial consumers do not have enough upfront capital to invest in EERE, are not aware the upgrades are possible, and can lead to significant savings or are hesitant to assume the potentially high initial costs in implementing the measures.
2. Program experience shows that incentives do motivate the choice to do home upgrades and can be extremely important to get a program off the ground.
3. Development of regional investment centers geared toward economic development and entrepreneurship will promote direct and indirect job creation through capital investments.
4. Pooling projects regionally can create the scale needed to allow for effective bonding.
5. Marketing available financing structures and developing new ones allows consumers to increase demand for EERE, thus allowing businesses to grow.

*Implementation Plan:*

- Regional local governments pass a Joint Resolution in support of developing a system of public/private sustainable local financing models to allow for and encourage affordable residential and commercial energy efficiency upgrades and renewable energy projects
- Involve business owners and other partners in creation of a list of existing or possible financing options, lenders and other providers offering financing for EERE projects
- Research will include codifying operations of the possible finance models and potentially developing a New Mexico EERE Finance Authority or some other potential funding source
- Partner with EERE financiers to help market the option to residents.
- Achieve EB5 designation in New Mexico for EERE investors.

*Additional Considerations:*

With current state and federal credits available for installation of solar, the decrease in cost of product, and the eventual refund for producing energy, over 7 years, a system that seems expensive can be within reach of the average homeowner.

2013 Residential Example:

Total cost for a 3.15 kWh photovoltaic system                      **\$15,842** (100% of electricity/2000 sq. ft.)

Credits for Solar Systems:

PV Electricity	Feds 30% x 15,842 =	\$ 4,752
	State 10% x 15,842 =	\$ 1,584

PNM refund 475 kWh x .04 = \$19 x 12 mo. x 7 yrs	\$ 1,596
--	----------

Electric bill not paid at                      \$50 x 12 mo. x 7 yrs	\$ 4,200
--	----------

**Total tax credits, PNM refund, utility savings (electric)                      \$12,132** (over seven years)



**6. Enhance understanding of EERE regionally to promote demand for EERE, the concept of producing and buying locally and associated business development.**

*Recommendation Statement:*

Develop a regional, multi-component plan to strengthen “The Four’s” (local government, commercial, residential consumers, and financiers) understanding of the true value of EERE, to both create demand for EERE products, businesses, and policies in the region by consumers (government, residential, and commercial customers) and create a willingness on the part of the enablers (government, financiers, and insurers) to support EERE growth.

*Rationale:*

1. Consumer outreach is important to ensure that the public is aware of local and state government measures to reduce its own energy consumption.
2. Well publicized assistance to consumers in understanding the broader benefits of EERE such as cost savings, health, comfort, energy security, competition, and community engagement, as well as creating the sense that this is a social norm, leads to broader interest and compliance with policies and opportunities.
3. Provision of objective information and a single point of contact facilitate consumer decisions thus benefiting both private enterprise and the community.

*Implementation plan:*

- Develop an advisory team made up of local, private business owners/managers, utilities, and other representatives of “The Four” and regional partnership organizations
- Research providers, type, and content of trainings available to “The Four” related to EERE; evaluate effectiveness and enhance as needed
- Develop a one-page fact sheet for each of “The Four” outlining the benefits of EERE development and marketing to include the broad concept of a smart investment vs. a non-returnable cost
- Develop a regional brand and website around and support EERE

*Additional Considerations:*

With the Office, there are no extra costs for supporting these partnership efforts.

Benefits include: build regional markets for EERE business growth and jobs; keep money and business local; environmental benefits with less waste, transportation, and increased use of local materials; lesser cost of doing business leads to increased disposable income and direct and indirect job creation.

Because there is no single solution for how to drive demand, and many communities are learning more about what works *right now*, the Lawrence Berkley National Laboratory Electricity Markets and Policy Group created the webpage <http://drivingdemand.lbl.gov/> to share resources as they are developed. A summary of one case study follows:

*Take Charge Challenge*

Community-Led Competition to Save Energy in Kansas

The Take Charge Challenge was a year-long energy use reduction competition between towns sponsored by a regional nonprofit in Kansas. In six towns, *leadership teams* were recruited among respected town leaders *who communicated the benefits of the program to different constituencies within each town* and played up the competition. The initiative led to savings of more than 6 million kWh during the programs single year. The installation of permanent energy-saving measures such as interruptible thermostats and more efficient air conditioning as a result of the Challenge also locked in more than 7 million kWh annual savings. The combination of local leadership with the incentive of competition resulted in higher levels of participation than organizers initially envisioned.

## **7. Create a Regional Entrepreneurial Development Association.**

### *Recommendation Statement:*

Support regional entrepreneurship and business development, retention and expansion by facilitating development of a business-driven Regional Entrepreneurial Association and Business Incubator that includes a primary focus on EERE businesses.

### *Rationale:*

1. Surveys and other input to Angelou Economics in development of the 2012 Grant County Economic Development Master Plan indicated the need to further enhance small business development and entrepreneurship support and resources. This has consistently remained an important recommendation of Task Force members.
2. There is limited regional early-stage capital available to support local EERE start-ups.
3. Partnerships with the WNMU/SBDC, Southwest New Mexico Workforce Connection, Green Chamber of Commerce, and Council of Governments, local Cooperative Extension offices, Wellness Coalition, and Southwest Regional Housing Community Development Corporation are enhancement.
4. Incubators maximize use of space, allow for a shared training site, foster mentoring, group advocacy, technical assistance, and shared resource use such as support staff, office equipment, supplies, and other office needs, and increase the possibility of shared grant, loan, and/or other financial resource development.
5. Support of businesses in developing within the region may maximize the potential for the supply chain, manufacturing, installation, and maintenance to locate in one place.

### *Implementation Plan:*

- Create a regional EERE business forum to define and address common issues
- EDA, USDA and other grant sources, local investor options, and other possibilities would provide “start up” funds sufficient to employ an Association Manager and support staff
- Work with partners and resources to develop a regional business asset inventory, business model and plan, and management plan for the Association and regional incubator
- Assess regional site(s) for incubator development
- Consider the following elements in incubator model development: 1) support and advocacy structures 2) research and development components 3) technical assistance and training systems, shared resource development, staff, and equipment 4) support for local, sustainable-use business development such as use of recyclables, local food ventures, and eco-tourism
- Utilize partners to develop a regional, cooperative, integrated marketing plan
- Develop a Certified Entrepreneurial Community program (CEC)

### *Additional Considerations:*

The New Mexico Small Business Assistance Program (Sandia National Laboratories) can assist with up to 40 hours of free consultation. The New Mexico Manufacturing Extension Partnership can provide up to 160 hours of technical assistance and/or \$20,000.

The Association and business incubator model allows for possible business cost savings and support benefits of shared bookkeeping and reduced other operational costs, relationship building, mentorship, and resource development.

The Association would employ an Association Manager and 2 – 4 support staff located throughout the four county region.

**8. Support regional and state economic development, entrepreneurship, and EERE business support capacity.**

*Recommendation Statement:*

Participate with the New Mexico Association of Regional Councils (NewMarc) with the process to develop a statewide Economic Development Strategy including EERE as a target cluster.

*Rationale:*

1. EERE has consistently been identified as one target industry in which the region can be more economically successful together than separately.
2. Feedback from the Southwest New Mexico Energy and Green Jobs Task Force and surveys and other input to Angelou Economics in development of the 2012 Grant County Economic Development Master Plan indicate the need to further enhance small business development and entrepreneurship support and resources.
3. Commuter patterns show that employees often live in one county in the region and work in another; demonstrating the linked economy of the region as well as the flexibility for the region to approach business development together.
4. More funding sources are increasingly requiring innovative partnerships and regional approaches.
5. There is limited regional early-stage capital available to support local EERE start-ups.
6. Benefit of a state strategy that incorporates the “triple bottom line” in the benefit-cost analysis: economy, environment, and people.

*Implementation Plan:*

- The SWNMCOG forms a small, regional work group to provide input and development assistance for the Scope of Work of the NewMarc’s State Comprehensive Economic Development Strategy (CEDS)
- The work group will organize a regional forum where a range of needs are discussed and decisions made about implementing some key recommendations of the forum participants
- Clarify regional economic development authorities and issue memorandums of understanding (MOUs) regarding the mutual roles and responsibilities held by these authorities at the county and local levels
- In partnership with the Office and state, implement recommendations and other ideas as possible.

*Additional Considerations:*

A statewide CEDS provides the NM Legislature with a long term plan and eases its ability to maintain and/or increase incentives for EERE and other conservation and job creation initiatives.

Development of the statewide CEDS improves recruitment opportunities and allows for more directed responses to inquiries.

Local manufacturing and purchasing greatly improves the economic multiplier effect, creates living wage jobs, and avoids shipping costs and related fossil fuel use.

Market research done by local business, *Gila WoodNet*, found that wood products exported to outside of the county generated only about half of the net revenues of wood products sold locally. The reasons include: advertising and other marketing costs are much higher away from the community of origin; competition is much greater in an outside market than in a local market and more product is sold at wholesale rather than retail price points; transportation and delivery costs are higher to export markets; and local customers are more loyal.

**9. Align the needs of the regional workforce to be prepared for EERE industry growth and meet the needs of current employers.**

*Recommendation Statement:*

Develop a regional, multi-component plan to ensure the regional workforce meets the needs of employers and hiring can match demand for employees.

*Rationale:*

1. Demographic trends in our region lean toward an aging population, loss of young professionals in part due to the lack of high paying jobs and amenities, and a poor work ethic among the overall workforce.
2. Support for regional businesses such as infrastructure for development, expansion, and retention is weak. Aligned training and education, and a clearinghouse for current information and resources, are key.
3. Existence of a skilled or trainable labor force within the region.
4. Availability and access to higher education, research institutions, and career and technical skill training programs to develop strategic training curricula and business incubation strategies.
5. Jobs in the fields of EERE in New Mexico tend to pay higher than other occupations.
6. EERE associated jobs in New Mexico are projected to grow faster than other jobs.

*Implementation Plan:*

- Develop a general and/or target industry advisory team made up of local, private business owners/managers, and representatives from regional partnership organizations
- Align the region's educational institutions and workforce development programs. For example, expand WNMU Applied Technology curriculum and programs and regionalize development of a high school VoTech institution offering dual credit in science, technology, engineering, mathematics, entrepreneurship, career and technical education, and work ethic concepts and principles
- Participate in the effort between Department of Workforce Solutions and Higher Education Department to align workforce training and curriculum with employer needs to include work ethic concepts and principles
- Increase number of WNMU and high school internships with EERE businesses, organizations, and projects
- Develop incentives to bring diverse educational opportunities to rural areas
- Increase K-12 student interest in EERE fields through use of existing curriculum like the Solar Energy Association's SunChaser program and GRIP/Aldo Leopold High School's Green Jobs Curriculum.

*Additional Considerations:*

Senate Memorial 65 (2012) required a feasibility study to determine the impact of establishing and operating a career and technical education center in Grant County. The completed study outlines current resources, economic development strategies, and a market analysis of seven "career clusters" with potential occupations and annual average job openings through 2020.

- There are no extra costs for supporting these partnership efforts with the Office.
- Local residents will be able to fill jobs created by the growing EERE industry.
- There are accelerated benefits from EERE by allowing businesses to grow as quickly as demand.

## **10. Evaluate and support transportation decisions and investments with EERE considerations an important factor.**

### *Recommendation Statement:*

Local governments incorporate EERE into transportation and infrastructure planning and decision making through transportation, purchasing, and public works departments.

### *Rationale:*

1. In a time of volatile fuel pricing, local government budgets are more predictable with improved vehicle efficiency and decreased miles driven
2. Use of regionally produced renewable fuels reduces dependence on external supplies and pricing and increases the money kept in the regional economy
3. Traffic signals influence energy consumption by means of
  - Electrical energy consumed to power traffic lights
  - Energy efficiency associated with the idling and acceleration of motor vehicle engines. Optimizing traffic signals and changing to LED bulbs saves energy and money.
4. Multi-modal transportation planning lessens community impact on the environment and climate and improves emergency preparedness in case of fuel and electricity shortages

### *Implementation Plan:*

- Design demand-side measures (e.g. vehicle procurement requirements) and supply-side measures (e.g. setting alternative fuel consumption targets or conventional fuel displacement requirements)
- Support and strengthen the Southwest Regional Transit District (SWRTD)
- Develop a lighting plan for street lights
- Assure that all traffic signals utilize LED
- Assure EERE transportation and infrastructure planning is prioritized in local government Capital Infrastructure Improvement Plans
- Adhere to infrastructure master planning that supports multi-modal communities including the alignment of housing, school, and business development with multi-modal transportation options and road design features that minimize vehicle stops and idling (e.g. roundabouts)

### *Additional Considerations:*

Sixteen traffic signals within Silver City were replaced in 2009 with LED bulbs. The overall kWh reduction from 2009 to 2011 was 46%, a reduction of 108,794 kWh. The overall financial savings has been over \$1300/year.

Deming has recently installed one “slow fill” and one “fast fill” natural gas station for their three natural gas city vehicles. The “slow fill” station is up and running although there is no data yet as use began in late 2012.

Using several assumptions, an increase by just 10% of an adult workforce or students walking or biking to their job or school will show significant fuel and financial savings. For example, 70 workers out of a workforce of 700, walking or bicycling 5 days/week can save over \$7,000 in annual fuel costs.

Deming, Silver and Cobre Consolidated School Districts are in planning and/or infrastructure phase of their Safe Routes to School (SRTS) program and would benefit from partnership with local government and businesses.

Economic development research indicates that strong, multi-modal transportation systems bring businesses and people especially into the downtown locales.

## **PARTICIPANTS SOUTHWEST NEW MEXICO ENERGY & GREEN JOBS TASK FORCE**

Bureau of Land Management  
Black Range RC&D  
Catron County  
Catron County Chamber of Commerce  
City of Bayard  
City of Deming  
City of Lordsburg  
Columbus Electric Coop  
Community Action Agency of Southern New Mexico  
Congressman Teague staff  
Deming - Luna County Economic Development  
Deming Public Schools  
Doña Ana Community College  
Freeport-McMoran  
Gila Economic Development Association  
Gila Resources Information Project  
Gila Woodnet  
Grant County  
Green Go Solar  
HELP New Mexico  
Hidalgo County  
Hidalgo County Economic Development  
Hidalgo Medical Services  
Kerr Ranch Tours  
Luna County  
Medius, Inc.  
Murray Hotel  
Navopache Electric Coop  
New Mexico Aging and Long Term Services Department  
New Mexico Commission for the Blind  
New Mexico Department of Workforce Solutions  
New Mexico Economic Development Department  
New Mexico Finance Authority  
New Mexico Institute of Mining and Technology  
New Mexico Solar Energy Association - Silver City Chapter  
New Mexico State University  
Otero County Economic Development Council  
Red Sky Hot Spring, LLC  
Reliable Marketing and media  
Restoration Technologies  
Sapphire Energy  
Senator Bingaman staff  
Senator Udall staff  
Silver City – Grant County Chamber of Commerce  
Silver City Mayor’s Climate Protection Committee  
Southwest New Mexico Council of Governments  
Southwest New Mexico Green Chamber of Commerce  
SWNM Regional Housing and Community Development Corporation  
Southwestern Area Workforce Board  
Sun Zia  
Terrazas-Schultis Development  
The Solar Biz  
Town of Silver City  
United County Mimbres Realty  
USDA Farm Services Agency  
USDA Forest Service  
USDA Rural Development  
Village of Columbus  
VSI Matrix  
Wellness Coalition  
Western New Mexico University  
Zia Engineering