

# *Colorado SECTORS Initiative: Eastern Colorado Wind Energy Partnership*

MARCH 2013 CASE STUDY



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# COLORADO'S SECTORS INITIATIVE

In May 2009, The Colorado Department of Labor and Employment (CDLE) and the Colorado Workforce Development Council (CWDC) jointly awarded funding to super-regions throughout the state. Funding was provided to regional workforce partnerships to plan a sector strategy, and many of these grantees received additional funding for the implementation of these activities. Since 2009, ten grants have been awarded to target industries including aerospace, healthcare, manufacturing, renewable energy, and water/wastewater management. Sector initiatives are developed through local public-private partnerships, are industry focused, and include workforce development, economic development, education and other stakeholders to address high priority workforce challenges within an industry.

## BACKGROUND

The Eastern Colorado Wind Energy Partnership initiative involved four of the eleven sub-regions of the Colorado Rural Workforce Consortium, and included 25 counties<sup>1</sup> within Colorado's Eastern, Pueblo, Southeast, and Southwest workforce regions.

The 2011 US Census Bureau estimated the population for the Eastern Colorado Wind Energy Partnerships' geographic area to be 412, 300. The most urban of the Eastern Plain sub-regions, Pueblo County, which contains the city of Pueblo, had an estimated population of 160,545. The Eastern sub-region had 111,073; and the two more rural sub-regions (Southeast and Southwest) had populations of 92,120 and 48,628 respectively.

The Pueblo and Southeast Workforce Regions have had some of the highest rates of non-seasonally adjusted unemployment amongst all of Colorado's workforce regions. In November 2012, Pueblo's unemployment rate was 10.1%; and Southeast's was 7.6%. Southwest's unemployment rate was 6.9%; and Eastern's was 5.6%.<sup>2</sup>

The Eastern Wind Energy Partnership's focus on Utility Grade Wind Energy (UGWEI), including turbine and tower manufacturing, was in concert with former Governor Ritter's interest in making Colorado a leader in renewable energy; and reflected the area's topography as optimal for wind energy. It also recognized the industry's potential to stimulate substantial economic and job growth in the region.<sup>3</sup>

Planning grant (2009-2010) research identified sub-sectors within the wind industry: wind farm construction, wind farm operations and maintenance, transmission of the generated electricity

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<sup>1</sup> Counties included are: Logan, Sedgwick, Phillips, Morgan, Washington, Yuma, Elbert, Lincoln, Kit Carson, Cheyenne, Pueblo, Crowley, Kiowa, Otero, Bent, Prowers, Baca, Las Animas, Huerfano, Costilla, Alamosa, Saguache, Mineral, Rio Grande, and Conejos.

<sup>2</sup> US Bureau of Labor Statistics, 2012

<sup>3</sup> Eastern Colorado Wind Energy Implementation Grant Proposal, 11/16/09, page 4

from the wind farms to consumers, and manufacturing of components and equipment; and the projected demand for a skilled workforce. This research also identified industry segments and projected needs, including replacement jobs.<sup>4</sup>

In addition to job growth, the planning team assessed workforce challenges. Data collected from State Labor Market Information, Economic Modeling Specialist, Inc. (EMSI), industry employers and associations, surveys with industry representatives and economic development representatives, and public announcements of future wind farm construction, revealed that:

- Wind energy employees were primarily imported;
- Marketing/communication gaps existed between the wind energy industry and workforce centers in Eastern Colorado;
- Job seekers in non-rural areas were relocating so it was essential to train current rural residents and youth;
- Military and agricultural industries were good industries from which to recruit quality workers;
- A “workforce intermediary” or project manager was critical to success.

## GOALS AND OBJECTIVES

In February 2010, the Eastern Colorado Wind Energy Partnership was launched. This implementation grant built upon the research of the planning grant and set out the following goals.

- Solidify a partnership between and among representatives the wind energy sector, Economic Development, the Colorado Workforce System, education and training providers including community colleges and secondary schools/districts, local government, and community based organizations;
- Support and engage K-12 schools in the creation of a career pipeline and promote career opportunities in the wind energy industry and other renewable energy fields;
- Streamline and align services and procedures among workforce centers, economic development, and educational programs to better respond to the workforce needs of the industry;

Develop curriculum and train job seekers and incumbent workers for work in one or more of the industry’s sub-sectors (see above). Over time, the Partnership expanded the scope of

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<sup>4</sup> Construction (1000); transmission and substation (800); manufacturing (650); and operation and maintenance (200).  
Ibid, page 8

the project to include all forms of utility grade electric power generation such as solar, biofuels, and geothermal. The enhancements included outreach, education, and employer networking in these areas, defined as being cross-functional to the practices and skills of the wind industry.

## **PARTNERSHIPS**

The Eastern Colorado Wind Energy Partnership represented a collaboration of several eastern Colorado agencies and employers including wind industry trade/professional organizations, wind energy employers,<sup>5</sup> economic development corporations, workforce centers, educational institutions and training providers, local government, and community-based organizations (See Appendix A for listing of partners).

The Energy Partnership built on the existent relationships and communication streams that existed between the workforce centers and the local community colleges. Led by the project lead, a Leadership Team was developed and included instructors and administrators from Northeastern Junior College (NJC), local industry experts, a wind tech student, as well as several workforce and SESP grant representatives. The function of this Team was to identify and recruit additional industry employers to join the partnership and to collect, compile, and analyze primary and secondary data on training components, curriculum design, internship development, employer engagement, and job development. They also developed the work plan and project budget, led the Partnership, and acted as the wind energy industry experts for the workforce system.

The Leadership Team used webinars and some face-to-face meetings to stay in contact and coordinate activities. However, given distances and the rural nature of the Partnership's geography, face-to-face meetings were difficult to arrange. While the level of participation and/or communication among partners varied, the original project partners remained engaged throughout the lifetime of the grant. New partners<sup>6</sup> also joined the project as the grant became more established.

## **IMPLEMENTATION ACTIVITIES**

The Partnership's activities were located across huge geographic distances from the state's northeast corner in Sterling almost to the New Mexico border in Trinidad.

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<sup>5</sup> Producers, electric utility suppliers, wind energy service companies, and wind energy manufacturers

<sup>6</sup> For example, Juwi Solar, American Electric Vehicles, Pioneer Natural Resources, Vestas Towers

## ***Workforce Center Operations***

The Eastern Colorado Workforce Region (Fort Morgan Workforce Center) provided administrative and fiscal accountability for the Partnership. The project lead was located at this WFC, although he travelled extensively throughout the region.

WFC staff in Eastern and at the other regional WFCs engaged in recruitment, assessment/screening and referral services for eligible individuals, veterans and other job seekers; and provided career guidance about wind and other renewable energy occupations.

Industry partners gave Colorado workforce staff job-specific screening criteria and advised about actual and anticipated job openings.

Career and job fairs were organized over the course of the grant. One specific job fair for wind energy was held in Limon to promote Blattner Energy during a significant hiring phase. This job fair was sponsored by the Eastern Workforce Region. Additionally, the grant coordinator attended all workforce job fairs through the defined super-region, as well as hiring events in Arapahoe, Larimer, Weld, and Adams counties.

## ***Outreach and Recruitment***

In an effort to establish a pipeline into the wind industry, the Partnership embarked on a multifaceted recruitment strategy.

The Colorado Rural Workforce Consortium developed and distributed promotional materials to high school guidance counselors, industry employers, WIA program managers, Partnership workforce centers, and other key stakeholders. Through the Partnership, and in coordination with WFCs, industry employers advertised open positions and offered on the job training opportunities as part of their hiring packages. Industry employers included Infigen Energy – Cedar Creek I, Next Era Energy, Ingeteam Energy, EnXco Energy, Belgian Electric, Vestas Nacelles, Blattner Energy, GE Wind, Western Turbine, and Alliance Energy.

PCC and NJC targeted high school graduates for their respective certificate and/or Associate of Applied Science (AAS) degree programs in wind energy and/or renewable energy fields. In addition, the community colleges worked with industry partners to identify existent training needs and to develop incumbent training contracts.

The project lead also met with students participating in the International Brotherhood of Electric Workers (IBEW) Wind Turbine Classes to discuss careers in the wind industry and pathways to jobs.

## *Training*

Three types of training were provided under the Partnership – incumbent worker training, on-the-job training (individuals hired and then sent for training) and training for job seekers. The Partnership benefited from the experience of a number of companies, which had previously used incumbent worker training to develop employee skills and build company capacity.

Pueblo Community College (PCC) provided on-the-job training and incumbent training. NJC principally focused on degree program trainings. Subject matter experts worked with the colleges to develop curricula for all training courses.

Incumbent training was tailored to the specific needs of the company to be served. Course instructors met with company managers to discuss training needs, the level of worker skills and how best to develop the requisite skill sets.

Incumbent training sessions were held on-site and were scheduled during specific shifts and/or at shift changes to meet employer needs. Training contracts were flexible regarding dates of training and reflected changes in production schedules.

PCC provided a series of courses for individuals who had been hired by a company in the renewable energy field. During training, the company paid the individual's wages and the grant and/or WIA funds paid for the tuition. These courses were scheduled outside the academic semester structure. Participants received a certificate of completion at the end of each course. The courses offered included: Cranes and Rigging Systems, Manual Welding, Non-Destructive Magnetic Particle Ultrasonic Review, Non-Destructive Testing Ultrasound Phased Array, Training-Within-Industry (TWI) Job Instructions, TWI Job Relations, TWI Job Methods, and Welding Introduction Evaluations.

PCC used three mobile learning labs to train workers in manufacturing, electrical systems, and welding. These labs were located for short or long periods of time near a company to enable workers to have hands on experience without potential damage to company equipment.

NJC launched a two-year AAS degree in wind technology in 2009. The first class graduated in 2011. The program's reputation has rapidly grown and there is a waiting list each year for entrance into the program.

A five-week summer course, the Wind Summer Intensive Five-Week Program, was launched in July 2011 at NJC. This course was intended to attract veterans in Colorado looking to advance their electrical skills to obtain jobs in wind energy or in comparable industries.

# ACHIEVEMENTS

## *Training*

Over the course of the grant, 163 individuals out of 169 who entered training completed Partnership sponsored trainings. This was almost double (192%) the original target of 85 individuals to be trained under the grant.

At Grupo Cementos de Chihuahua (GCC) a total of 31 unique employees in the electrical and mechanical maintenance departments participated in the training provided by PCC.<sup>7</sup>

At Vestas Towers, 38 unique employees were trained at including supervisory personnel.<sup>8</sup>

Through PCC, a total of 69 individuals received training in one or more of eight offered courses in as noted above. Many of these individuals had already been hired by regional companies and thus did not have to pay for their training. As noted above they received wages while being trained.<sup>9</sup>

As mentioned, an AAS degree in wind technology was offered by NJC. Funding was provided to these students for expenses related to an internship requirement. In 2011, 13 students graduated from the program and in 2012, 14 students graduated. Currently there are 15 students in the second year of the program and 20 students in the first year.<sup>10</sup>

## *Certificates and Degrees*

The Partnership set a target of 85 individuals who would receive some industry certificate and/or an AAS degree, as a deliverable. From NJC, there were a total of 23 certificates awarded and 19 received an AAS degree. There was one certificate of completion. Some participants also received continuing education credits.<sup>11</sup>

# IMPACT / RETURN ON INVESTMENT (ROI)

Data on “return on investment” was not formally collected. However, feedback was received by the Partnership which indicated the trainings had made an impact. Post- placement information was gathered through unemployment wage data, as well as normal case management follow up procedures to verify continued employment and whether the employment is as a result of the specific training provided.

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<sup>7</sup> As reported by Pueblo Community College staff.

<sup>8</sup> As reported by Pueblo Community College staff.

<sup>9</sup> As reported by Pueblo Community College staff.

<sup>10</sup> As reported by Workforce Center staff.

<sup>11</sup> As reported by Workforce Center staff.

Vestas Towers and GCC reported that as a result of the incumbent trainings a number of employees were promoted to higher job functions.

GCC observed that the trainings resulted in increased efficiencies and saved money. For example, one plant manager mentioned that subsequent to employee training, maintenance staff was more pro-active resulting in less equipment breakage and/or down time. GCC has since reported that equipment “downtime” has been reduced and job instructions have become more consistent among the management/supervisory team.

Employees commented that the training was enjoyable; and the knowledge gained informative. Some participants shared they had learned the technical terms for routine tasks that had been previously unknown. Some employees stated that they were more efficient in their jobs, and thus could work faster and “get home faster.”

## *Wage Increases*

Incumbent workers trained under the grant experienced an average wage gain of 27%, from \$22 an hour to \$28.<sup>12</sup> GCC reported that 13 participants had received pay increases as a result of completion of the entire training.

## *Development of New Curriculum*

With great pride, staff at PCC commented, "There really isn't any other community college in Colorado that does what we do, the way we do it." PCC has worked closely with industry and has created multiple technical manufacturing courses that meet specific industry skill needs. They see a future in manufacturing and are prepared to provide the intensive groundwork that is so critical to align training with production processes outside the traditional rubric of academic time tables. Over the course of the grant, PCC developed and launched a total of seven new courses including: Manual Welding (developed specifically for Vestas’ needs), Training Within Industry (Job Instructions, Job Relations, and Job Methods; developed specifically for GCC), Crane and Rigging Systems, and Welding Introduction Evaluations.

## **CHALLENGES**

Despite the partnership far exceeding many of its targets, it did face a number of challenges.

The Partnership started in February 2010 rather than January 2010. In the spring of 2010, the project coordinator, who developed the proposal and who led the planning grant, moved onto other activities. The former project coordinator had strong ties with industry and education when initiating the partnership. The new project lead was hired spring 2010. He, however, did not have a background in wind energy and/or sector initiatives.

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<sup>12</sup> Wage gain measure for incumbent workers taken from the WIA Performance report.

During the final grant year concerns grew about the scheduled December 2012 sunset of the federal tax credit for building wind farms. Given the fiscal climate, an extension was doubtful. This impacted the field's "food chain" resulting in the fall 2012 layoff of 90 workers at the Vestas Towers plant in Pueblo, among other industry layoffs throughout the state; and a curtailment of new hires by other wind related companies. Note as of December 31<sup>st</sup> a two year extension was put into place. This may help revive the wind sector and lead to further growth, as Vestas Towers plans to hire approximately 90 employees, including those who were previously employed.

## ***Administrative/Procedural***

Pueblo Community College found the requirements from CDLE in terms of the documentation process unclear. The process was different than what they were familiar with from previous grant projects. Some employees pulled out of training because of paperwork and application tasks.

## ***Outreach***

Outreach to veterans and military organizations was more challenging than anticipated. An internet radio station targeting the military audience was used but few veterans responded. It is not clear why there was so little response from this potential pool of skilled workers. Job fairs for veterans held on the Front Range were attended by the project manager and the NJC program director, as well as instructors when class schedules permitted. Over the past several years, the Eastern Region has seen a marked decline in Veteran engagement resulting in the removal of a designated Veterans Representative during Program Year 2011.

## ***Training/Internships***

GCC incumbent workers were almost unanimous in their written post course comments that their 12 hour training in hydraulics was not enough. Workers felt they "need(ed) more time" to fully learn the concepts.

NJC found it increasingly difficult to identify summer internships for its AAS students, i.e. there was a large demand for intern slots but a low supply of opportunities. Wind companies were concerned about the costs of supervision and liability risks. Unable to identify sufficient intern placements for its students, NJC has eliminated the internship requirement for the next incoming class (2012). It has replaced the intern credits hours with an intensive capstone course.

Before the energy tax credit was extended, there was a strong potential for cut backs on jobs in the wind industry, which may be an issue in the future. The Sterling Workforce Center in partnership with NJC has seen growth in the numbers of students. NJC continues to work at making their program a "premier training program" in the country.

# LESSONS LEARNED & BEST PRACTICES

Given the project's geographic reach and the services funded, some important lessons were learned. They are identified below as both lessons learned and best practices:

- **Identify the “right” people.** In small communities, it is very important to establish relationships with the “right” people who are best aware of policies and trends within a region.
- **Documentation processes.** Develop a clear understanding of the documentation processes that will be required throughout the grant. Processes often vary depending on the grant requirements.
- **Contracts and memorandums.** Develop contracts and memorandums of understanding with partners, including responsibilities and roles, prior to initiating grant activities. Vet all potential issues pertaining to liability.
- **Internships.** Internships are often hard to secure, given the liability risks when students work 300 feet above the ground on live equipment. Most internships are unpaid. Note, during the sector initiative, the workforce system was able to cover liability expenses as well as travel expenses for students during the first two weeks of the component as students were traveling over 80 miles one way to complete this work experience.
- **Collaborative curriculum development.** It is important that instructors work closely with managers in the field to understand the specific processes and resources with which employees work. Collaborative curriculum development and feedback over time are important to the success of incumbent worker training. Active education and industry communication also helps to inform degree programs regarding the field's “state of the art” equipment and processes. All the PCC and NJC instructors came out of industry, which provided them with legitimacy in the eyes of the companies and their employees, and helped them speak the same language as field managers and employees.
- **Full time instructors.** PCC found that part-time trainers do not work as well as full time employees. However, the full time faculty should not be on departmental faculty lines and thus work according to the academic calendar. Incumbent worker trainings are scheduled to meet the needs of a company and thus the need for flexibility in an instructor's time is paramount. To contract individually means to be on a constant search for someone who has the skills, training credentials, and experience and is available at a specific time. PCC found it worked best to have a cadre of instructors available to meet emerging needs. Further, the consistency of staffing fostered the building of an integrated approach to training and a sharing of experience and skills. No doubt, there needs to be fairly consistent demand for curriculum development and training services to make this economically feasible.

- **Use team approach.** PCC has found that having a team approach for their training facilitates their success. They have an operations team and a training team. The operations team takes care of everything except what happens in the classroom.
- **Hire and train new employees.** Companies, employees, and also trainers praised the idea of employing workers and letting them earn wages as they gain additional skills. Grant and WIA funding paid for the employee's tuition, and the employer gained a more highly skilled individual. The new employee could concentrate on the training knowing that he/she was on payroll and did not have to search for a job after the completion of the course. The specificity of the training also made a difference to building workers' and companies' capacities. This model may work especially well in more rural areas where potential workers may lack the requisite skill set but may otherwise be promising candidates.

## FINANCIAL AND LEVERAGED RESOURCES

The Partnership was awarded \$425,000 for implementation. All grant funds were used in the grant period. \$235,425 was used for training and related supportive services. Personnel costs were \$151,925 including travel costs. The remaining \$37,650 paid for overhead and administrative expenses.

Incumbent training expenses, including instructor salaries, and costs related to the MLLs, were partially offset by the fees charged to the employers, and WIA funds for the incumbent workers.

NJC training was paid for by student tuition and fees.

Leveraged resources were in-kind in terms of training facilities of the company receiving incumbent workers training, e.g. PCC, NJC and The Pueblo WFC. In addition, though not calculated, were the wages that workers received while they were in training.

## SUSTAINABILITY

The Eastern Wind Sectors Grant ended on June 30, 2012, resulting in the layoff of the grant/project coordinator. The SESP partnership with NJC is active through June 30, 2013 and is staffed by Ginger Allen in the Sterling Workforce Center.

Pueblo Community College has indicated its commitment to continue to provide incumbent training to regional companies, using a fee for service structure to pay for the cost of training.

Northeastern Junior College will continue to offer its AAS program in wind technology and a summer program in wind technology. These offerings will be supported through student tuitions and/or other funding, e.g. WIA and TAA funds.

At the end of the grant there was some discussion about solar power and economic development. For example, Leprino Foods was interested in the possibility of creating a solar farm adjacent to their factory, so that they could benefit from the electricity it produced. This solar farm could create 50 or more construction jobs for 6 to 12 months depending upon the project's scope. The Morgan County Economic Development office learned recently that Leprino is not moving forward with solar at this time.

# ABOUT

Rutgers University's School of Management and Labor Relations (SMLR) is the leading source of expertise on the world of work, building effective and sustainable organizations, and the changing employment relationship. The school is comprised of two departments — one focused on all aspects of strategic human resource management and the other dedicated to the social science specialties related to labor studies and employment relations. In addition, SMLR provides many continuing education and certificate programs taught by world-class researchers and expert practitioners. For more information, visit [www.smlr.rutgers.edu](http://www.smlr.rutgers.edu)

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# APPENDIX A

## List of Partners in the Eastern Colorado Wind Energy Partnership:

- Eastern Workforce Centers
- Sterling Workforce Center
- Pueblo Workforce Center
- Pueblo Community College
- Northeastern Community College
- Infigen Energy – Cedar Creek I

## APPENDIX B

<b>ACTIVITY</b>	<b>TOTAL PLANNED</b>	<b>TOTAL ACTUAL</b>	<b>% OF GOAL</b>
<b>Entered training</b>	100	169	169%
<b>Completed training</b>	85	163	192%
<b>Earned certificate or industry credential</b>	85	121	142%