



# Local Economic Benefits of Wind Farm Construction



**TETRA TECH**

1.800.580.3765 • [WWW.TETRATECH.COM](http://WWW.TETRATECH.COM)

Timothy E. Delaney, President  
The Delaney Group, a Tetra Tech Company

# Introduction

- The Delaney Group has performed construction on 27 wind projects across North America since 2005.
  - We have been part of Tetra Tech since 2007
  - Tetra Tech has provided consulting services on over 450 wind projects since 2003
- This presentation will discuss two recent studies of local economic benefits associated with selected wind farm construction projects
- It will also identify typical challenges of hiring and procuring locally
  - Communities can plan to make greater advantage of the economic development benefits associated with the construction phase of wind projects

# Wyoming Case Study – Overview

- Tetra Tech developed a white paper for the University of Wyoming in March, 2010 entitled: *Local Economic Development Effects Associated with the Construction of Five Wind Energy Projects during 2008 in Converse and Carbon Counties, Wyoming*
- The paper explored several aspects of the construction phase of the PacifiCorp Glenrock, Rolling Hills, and Seven Mile wind farm construction projects for the University of Wyoming

# Wyoming Case Study – Background

- In 2008, Pacific Power (PacifiCorp) commissioned Tetra Tech as the EPC contractor for five wind farms totaling 355.5 MW.
- Responsible for installing 237 GE 1.5-MW turbines, associated collection system and meteorological towers.
- Managed all pre-construction services, which included siting and building access and site roads and constructing lay-down areas.
- Construction services included: Constructing the project and interconnection substation facilities (office, warehouse, control, and maintenance buildings) and designing and constructing all foundations and structures, as well as building refurbishment.
- Developed an environmental construction compliance plan specific to this client and its projects.



TETRA TECH



# Wyoming Case Study – Background



# Wyoming Case Study – Construction Economic Benefit

- Construction factors relevant to the local economic development benefits of a wind project include:
  - Labor and service jobs created during development, construction, and operation (direct, indirect, induced)
  - Income associated with those jobs
  - Materials purchased locally during development, construction, and operation (direct, indirect, induced)
  - Taxes paid
  - Local infrastructure improvements necessitated and financed by the project (e.g., intersection improvements, widened roads)

# Wyoming Case Study – Construction Economic Benefit

- Tetra Tech contributed over \$42M in direct salaries and bonuses paid to Wyoming-based employees and payments to Wyoming-based businesses.
  - This data refers only to Tetra Tech jobs created by the PacifiCorp wind projects in Wyoming. It **does not** include job data from the numerous subcontractors who were involved with the job.



TETRA TECH



# Wyoming Case Study – Local Job Creation

- A total of 63 Tetra Tech employees worked on the Wyoming PacifiCorp wind projects; of these, 13 were craft (or union) employees.
  - These 63 workers logged 73,598 hours and were paid a collective total of \$2,681,771 in salary and bonuses for this work.
- Of these 63 employees, 41 were hired by Tetra Tech specifically for the Wyoming PacifiCorp wind projects. Of these 41 new hires, 11 were craft labor.
- Of the 41 Tetra Tech new hires, 14 (34 percent) came from Wyoming, and eight of these were craft workers.
  - Collectively, Wyoming employees worked 13,385 hours on the PacifiCorp wind projects and were paid \$263,574 in salary and bonuses for this work.

# Wyoming Case Study – Local Job Creation

- Tetra Tech experienced several challenges in staffing these projects with Wyoming employees.
  - Although several resumes were submitted from local applicants, there were few with the appropriate skills or experience for the positions advertised.
- Tetra Tech undertook the following measures to identify job candidates from the local area:
  - Posted job openings to the local unemployment/Department of Labor offices
  - Posted job openings on national job boards
  - Called local unions for craft hires (i.e., electricians, welders, laborers)
  - Conducted an internal search by Tetra Tech’s resource managers to determine availability of manpower.
- The total number of Wyoming employees who worked on the PacifiCorp wind projects is far greater than those employed directly by Tetra Tech.
  - We contracted with approximately 50 companies and individuals to complete this work, approximately half of which were Wyoming-based entities.

## Wyoming Case Study – Local Goods and Services

- Tetra Tech was billed \$41,855,759 by Wyoming-based businesses for work done on the PacifiCorp wind projects. This amounts to about 22 percent of the total amounts billed to Tetra Tech for these projects.
- This amount encompasses items such as materials and equipment, construction services, licenses and permits, telecommunications and internet services, reprographic services, and utilities.
- These numbers *do not* include food, lodging, or personal expenses of out-of-state workers who worked on these projects.

# Wyoming Case Study – Local Goods and Services

**Table 2-2. Breakdown of Expenditures by Project, Indicating Goods and Services Procured.**

<b>Project</b>	<b>Wyoming Contractors</b>	<b>Amount Billed</b>	<b>Goods and Services</b>
Glenrock	14	\$11,944,580	Registration and licenses, mechanical and electrical design and construction, fuel, surveys and crews, stakeout, ice, pump maintenance, consulting services, equipment rentals, and aggregate material
Glenrock III	13	\$3,231,888	Road signs, vehicle maintenance, mechanical and electrical design and construction, fuel, surveys and crews, stakeout, graphics, consulting, and equipment rentals
Rolling Hills	18	\$8,451,453	Equipment rentals, aggregate materials, repair service and vehicle maintenance, registration and licenses, mechanical and electrical design and construction, fuel, surveys and crews, stakeout, and waste transport and disposal
Seven Mile Hill	23	\$12,081,239	Truck service, freight, drinking water, telephone, registration and license plates, turbine heavy rigging, shim packs, fuel, surveys and crews, stakeout, toilets, installation of fencing, electrical construction services, interconnection design and construction services, civil design and construction services, waste disposal, and equipment rentals
Seven Mile Hill II	6	\$6,146,599	Mechanical and electrical design and construction, fuel, surveys and crews, stakeout, and equipment rentals

# Wyoming Case Study – Conclusions

- A significant percentage of construction dollars go to local communities even when the labor pool is not robust
- Economic analysis of construction benefit should include benefits to local small businesses as well as direct job creation
- Localities and unions have many years to prepare the local work force for the job opportunities associated with construction
  - The typical wind project take over 3 years to develop



TETRA TECH



# New York Case Study – Overview

- Tetra Tech's Delaney Group has provided construction services on 15 New York Wind Farms since 2005
- This is over a gigawatt of NY's homegrown clean wind power!
- As of September 2010, that was over \$90.6 million in money funneled back to the people and small businesses of New York State



# New York Case Study – Detailed benefits

- These projects represented nearly 400,000 direct man hours of employment for union and non-union workers
  - That represents over \$17 million in direct salaries
  - That represents an additional several million dollars in employment benefits
- These projects required in the local purchase of \$30.0 million in goods (aggregate, fuel, concrete, etc.)
- These projects required approximately \$40 million in subcontracts to local NY state businesses for tasks such as vegetation clearing and transportation.

# New York Case Study – Conclusions

- We have funneled a significant amount of money back to rural upstate New York through our construction role on NY's wind farms
- Although we have created over \$20 million in direct salaries and benefits for upstate NY construction employees, the lion's share of our economic benefit (\$70.6 million) went to small businesses providing goods and services to the wind industry
- Because our role on NY projects was largely Balance-of-Plant (BOP), our contribution represents only a portion of the total jobs created and goods and services purchased for the 15 wind farms we helped to construct

# Take Away Message for Communities

- The construction contractor can answer many questions that come up during the project development process, which can help address community concerns
  - The Delaney Group often assists developers by attending town board meetings and open houses to answer questions
- Significant local construction jobs will be created
  - Prepare local job force during the 3 year long development stage of wind projects
  - Help construction contractors find qualified workers
- Even more significant expenditures will be made on local goods and services
  - Work with local service providers to create a directory of goods and services during the development stage of wind projects
  - Ask developers to provide the directory of local goods and service providers to bidders along with the construction RFP

# Contact Information

Timothy E. Delaney

President of the Delaney  
Group, a Tetra Tech  
Company

[tim@delaneyconstruction.com](mailto:tim@delaneyconstruction.com)

518.661.5304

