

# ARTEZ Green Cluster Analysis and Development Strategy

Final Meeting  
July 21, 2010





# Agenda

---

- ◉ Basis for Green Industry
- ◉ Green Industries and Employment Trends
- ◉ Competitive Analysis
- ◉ Available Development Properties
- ◉ Supporting Financial Programs
- ◉ Strategy/Recommendations



# Actions to Date

---

- Interviews with
  - Local Companies
  - “Green” Support Agencies
  - Economic Development Agencies
- Collected Base Employment Data and Examined through Shift-Share Analysis
- Competitive Analysis, both:
  - Competitive Cities
  - Within the Region
- Cataloged Available Properties
- Cataloged and Analyzed Incentives
- Examined of other Supporting Program



# Basis for Green Industry: Research, Innovation, and Technology Transfer

---

## ● Universities

- Univ. of Pittsburgh School of Engineering, Energy Center – Clean Coal research
- Carnegie Mellon – Smart Grid; Green Design Institute; Center for Building Performance and Diagnostics

## ● National Energy Technology Laboratory

- Funding one ARTEZ-area business – Media and Process Technology Inc. for gas purification research applicable to hydrogen fuel cells and other technologies

## ● Innovation Works

- Technology transfer and seed capital for alternative energy and energy efficiency (Ben Franklin Partnership serves SW PA)

## ● SW PA as an Engineering Center

## ● Keystone Innovation Center (tech business incubator)



# Basis for Green Industry:

## Existing Area Green Businesses

### ARTEZ:

- Plextronics – solar conductivity technology\*
- Converteam – electrical systems for wind\*
- Eco Clean Burners – plastics to energy technology\*
- Extrel – spectrometers for bio-diesel and air monitoring
- Forms and Surfaces – manufacturer of green building products and furniture\*
- Thar Technologies – environmentally friendly supercritical fluid solutions; planning bio-diesel facility\*
- Exterior Technologies – structural polycarbonate for windows and skylights adapted for translucent solar panels\*
- Emerson Process Management – business energy efficiency solutions\*

### Pittsburgh area:

- Solar Power Industries, Belle Vernon – supplier of solar panels
- Media and Process Technology Inc., Pittsburgh & Schenley – gas purification technology funded by NETL\*
- Flabeg Corporation, Finley – manufacturing glass and mirror components for solar panels
- Gamesa, Ebensburg – makes wind turbine blades
- Elwood Group, Lawrence County – shafts and steel housings for turbines
- PPG – manufactures high performance coatings & blade structural composites
- Westinghouse – nuclear
- Bechtel-Bettis Atomic Power Laboratory

\* Expansion plans



# Basis for Green Industry

## Current Businesses Expanding into Green Tech

***Current Business Base*** – assess potential for expansion from within:

- Current base of green jobs – identify potential for expansion
- Business relationships, supplier networks
- Conventional businesses adding sustainability elements and new green product lines



- Flabeg Corp – concave mirrors for solar (not in ARTEZ)



- Exterior Technologies – solar skylights



# Basis for Green Industry

## Current Businesses Expanding into Green Tech



- Converteam – electrical systems for solar and wind



- Extrel Corp – spectrometers for bio-diesel and air monitoring



- Thar Technologies – supercritical fluid alternatives solvents

### ***Conclusion - Existing Business Base:***

- *Potential for adding 500 jobs just by accommodating the growth plans of existing green businesses*
- *Business retention/ou*



# Basis for Green Industry: Marketing and Networking

---

## Area Green Tech Networks – Organized, Funded, Active, Good PR:

- Black and Gold Goes Green
- Green Building Alliance
- Three Rivers Clean Energy Alliance
- Sustainable Pittsburgh
- “Green Innovators” project
- “Green Drinks Pittsburgh”
- Pittsburgh Regional Alliance



# Basis for Green Industry:

## Public Sector Commitment and Leading by Example

- Allegheny County
  - Building energy efficiency, weatherization
    - County Office Bldg green roof
    - County Courthouse rain garden
    - Solar water system at jail
  - Recycling
  - TIF incentives linked to LEED
  - Green purchasing
  - Green Executive order:
    - Greenhouse gas inventory
    - 20% energy reduction
    - 20% water efficiency increase
    - 5% fleet conversion to higher efficiency



County jail – Solar Hot water system

- Pennsylvania
  - Primary target sector for DCED
  - Green purchasing
  - Aggressive incentives



# Basis for Green Industry: Workforce and Training

---

- Generally Pittsburgh area labor force gets kudos
- Many old line/traditional industry skills match up w/ green jobs
  - Examples: Sheet Metal Workers, Machinists, Electrical Equipment Assemblers
- Universities producing highly-skilled scientists and engineers
- Heritage Community Initiatives – green job training programs
- Resources
  - Allegheny County Community College
  - Three Rivers Workforce Partnership
  - Catalyst Connection



# Green Industries

## NAICS Codes Identified by Pennsylvania Green Jobs Report

- 221 Utilities
- 237 Heavy and Civil Engineering Construction
- 324 Petroleum and Coal Products Manufacturing
- 325 Chemical Manufacturing
- 333 Machinery Manufacturing
- 334 Computer and Electronic Product Manufacturing
- 335 Electrical Equipment, Appliance, and Component Manufacturing
- 336 Transportation Equipment Manufacturing
- 541 Professional, Scientific, and Technical Services
- 562 Waste Management and Remediation Services
- 924 Administration of Environmental Quality Programs
- 926 Administration of Economic Programs

## Additional Industries which may Support Green Activity\*

- 236 Construction of Buildings
- 238 Specialty Trade Contractors
- 312 Beverage and Tobacco Product Manufacturing
- 321 Wood Product Manufacturing
- 326 Plastics and Rubber Products Manufacturing
- 331 Primary Metal Manufacturing
- 332 Fabricated Metal Product Manufacturing
- 337 Furniture and Related Product Manufacturing
- 493 Warehousing and Storage
- 611 Educational Services
- 811 Repair and Maintenance

\*Identified by the Bureau of Labor Statistics at  
[http://www.bls.gov/green/industry\\_by\\_naics.pdf](http://www.bls.gov/green/industry_by_naics.pdf)

NAICS: “North American Industry Classification System”



# Employment Trends: Shift-Share Analysis

---

- Shift-share allows us to identify growth (or loss) due to the region's strengths relative to the nation (and the MSA)
- Allegheny County is gaining more than a predicted share of employment growth in:
  - 334 Computer and electronic product manufacturing
  - 335 Electrical equipment and appliance manufacturing
  - 333 Machinery manufacturing



# Employment Trends:

## Location Quotient

---

- Location Quotients are a method of identifying basic (domestic) and non-domestic (exported) employment in a region
- The Pittsburgh metro area already has advantages (high location quotient) in
  - 334 Computer and electronic product manufacturing
  - 335 Electrical equipment and appliance manufacturing
  - 324 Petroleum and coal products manufacturing
  - 325 Chemical manufacturing
  - 562 Waste management and remediation services



# Employment Trends: Location Quotient

---

- Similarly, Allegheny County has an employment advantage in
  - 324 Petroleum and coal products manufacturing
  - 331 Primary Metal Manufacturing
  - 611 Educational Services
- Allegheny County has an LQ above 1:1 and rising (growing exported economic activity) for
  - 237 Heavy and civil engineering construction
  - 334 Computer and electronic product manufacturing
  - 335 Electrical equipment and appliance manufacturing
  - 333 Machinery manufacturing



# Regional Competitive Analysis

The following communities have industry profiles or stated attraction targets similar to those of ARTEZ

- |   |                             |    |                     |
|---|-----------------------------|----|---------------------|
| 1 | Albany-Schenectady-Troy, NY | 9  | Philadelphia, PA/NJ |
| 2 | Buffalo-Niagara Falls, NY   | 10 | Rochester, NY       |
| 3 | Cincinnati, OH/KY           | 11 | Rome-Utica, NY      |
| 4 | Cleveland, OH               | 12 | Springfield, MA     |
| 5 | Detroit, MI                 | 13 | St. Louis, MO/IL    |
| 6 | Erie, PA                    | 14 | Syracuse, NY        |
| 7 | Harrisburg, PA              | 15 | Toledo, OH          |
| 8 | Minneapolis, MN             | 16 | Wilmington, DE      |

These were compared to Allegheny County, the Pittsburgh MSA and – where possible – the ARTEZ municipalities



# Regional Competitive Analysis

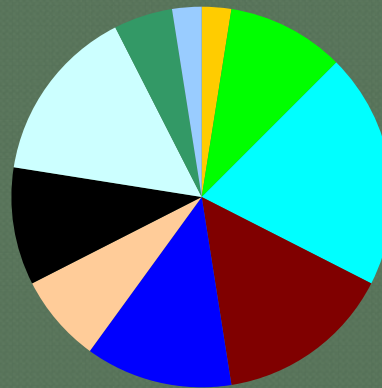
## Sample Results

### ***Manufacturing Based Company***

- Manufacturing concerns will place particular emphasis on the availability of specific skills in the workplace and on the cost of labor and production. Tax structure and incentives will also play an elevated role in the decision process for a production facility.

### ***Top-5 shortlist is as follows:***

1. Erie
2. Pittsburgh
3. Harrisburg
4. Minneapolis
5. Detroit



Population and Demographics	2.5%
Labor Force Availability	10.0%
Industry Specific Employment	20.0%
Labor Force Cost	15.0%
Education	12.5%
Transit and Infrastructure	7.5%
Tax Structure	10.0%
Incentive Programs	15.0%
Climate and Natural Hazards	5.0%
Crime and Quality of Life	2.5%



# Regional Competitive Analysis

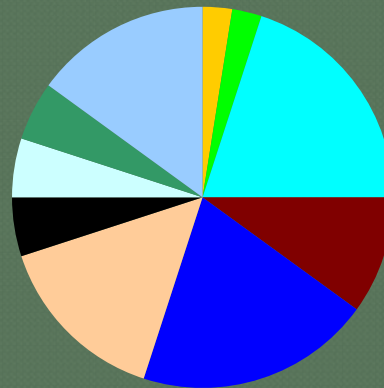
## Sample Results

### *Research and Development Company*

- R&D functions also place emphasis on specific skills bases, but will also place additional emphasis on the education system, transportation system (particularly air), and – due to the need to recruit to the area – quality of life.

### *Top-5 shortlist is as follows:*

1. Minneapolis
2. Harrisburg
3. Pittsburgh
4. Buffalo-Niagara Falls
5. Rochester



Population and Demographics	2.5%
Labor Force Availability	2.5%
Industry Specific Employment	20.0%
Labor Force Cost	10.0%
Education	20.0%
Transit and Infrastructure	15.0%
Tax Structure	5.0%
Incentive Programs	5.0%
Climate and Natural Hazards	5.0%
Crime and Quality of Life	15.0%



# Regional Competitive Analysis Summary

- Pittsburgh performs well across a range of weighting regimes
- Likely make shortlist contention for a variety of industry and use types
- Green manufacturing, research and development, and related fields all match Pittsburgh MSA location profile
- Importantly, Pittsburgh region will likely **score well enough to make short list** and may be directly contacted by expanding companies (or their consultants)
- Pennsylvania state agencies, the Pittsburgh Regional Alliance, and Allegheny County should be prepared to show how the ARTEZ communities provide specific opportunities
- Since other state locations performed very well including Erie and Harrisburg, it will be important to differentiate the assets of Pittsburgh and ARTEZ for specific company types



# Available Development Properties

Site Name	Address	Municipality	Owner	Size
<b>Sites Within ARTEZ</b>				
Millvale Borough Property	103 to 127 Evergreen Road, 100 Lincoln Avenue, 501 to 509 East Ohio Street and 102 to 119 Meade Street Pittsburgh, PA 15209	Millvale	Millvale Borough or Borough of Millvale Development Corporation	1 acre total
Nicotra	112 Lincoln Ave and 129 Evergreen Road Pittsburgh, PA 15209	Millvale	Salvadore J. Jr. and Rhea A. Nicotra	1.2 acres
K. Walter's Auto Body	Intersection of Lincoln Avenue and Ohio Street Pittsburgh, PA 15209	Millvale	Millvale Borough; previously leased to Kevin Walter Auto Body who has since moved out of building	0.33 acre
Former Yeager Texaco	874 Butler Street Pittsburgh, PA 15223	Etna	Bob Yeager until recent sale to Vince Morreale (closing date of transaction anticipated in April 2010)	2 acres
Former Henry Miller Springs	10 7th Street Pittsburgh, PA 15215	Sharpsburg	WVTE LLC (Wayne Thompson)	4.78 acres
MarCal (former Tippins)	448 Butler Street Pittsburgh, PA 15223	Etna	MarCal Group (does business at the Site under the names ISSCO and WTM Exotic Wood Flooring)	17 acres (may be limited to approximately 5 acres)



# Available Development Properties

Site Name	Address	Municipality	Owner	Size
<b>Sites Within ARTEZ</b>				
Frank Vozza	215 and 239 5th Street Pittsburgh, PA 15238	Blawnox	Frank Vozza	0.6 acres
Elmer Nicklas	Multi-parcel site, located between 1300 and 1400 William Flynn Highway (Route 8) Pittsburgh, PA 15116	Shaler	Elmer Nicklas	3.85 acres
89 Bridge Street	89 Bridge Street Pittsburgh, PA 15223	Etna	Thomas A and Lucille Plesco	8,321 sq ft
Red Star Ironworks	2 Sedgwick Street Pittsburgh, PA 15209	Millvale	Lawrence and Estelle Ritchert	0.3 acres
Duquesne Mining	2 Cross Street Pittsburgh, PA 15209	Millvale	Duquesne Mine Supply Company (Mr. David L. Genter)	2.6 acres
Former Aspinwall Water Treatment	River Avenue Aspinwall, PA	Aspinwall	Borough of Aspinwall	1 acre
Aspinwall Marina	285 River Avenue	Aspinwall	Larry Collins (broker)	8 acres
Former Fort Pitt Brewery	Intersection of 15th Street and South Canal Street Sharpsburg, PA	Sharpsburg	Frank T. Donnelly Company, Inc.	0.39 acres
	Freeport at Alpha Drive	Blawnox	Joseph Bertucci; Langholz Wilson Ellis	1.35 acres
Marc Anthony Construction Site	Poplar Street	Etna	Marc Anthony	5 acres
	400 Butler Street	Etna	John Caplan	
Kelman Bottling Site	Route 8	Shaler		
Former Benshaw Facility	Route 8	Shaler		



# Supporting Financial Programs

## ◉ Financial Incentives

- Reviewed ARTEZ posted incentives list
- Updated and adding new programs
- Renewable energy and green incentives coded for activities and target companies
- Support for Revolving Loan Fund



# Supporting Financial Programs

## ● Additional Green Programs not listed on website

- Alternative and Clean Energy Program
- DOE Energy Loan Guarantee Program
- Clean Renewable Energy Bonds (CREBS)
- Ben Franklin Tech Partnership (BFTDA)
- Alternative Energy Development Program (AEDP)
- Solar Energy Program
- Pa. Sunshine Solar Rebate Program
- Sustainable Energy Fund (SEF) – PA, MD, DE
- Property Tax Assessment for Commercial Wind Farms
- Small Business Energy Efficiency Grant Program
- Federal Advanced Energy Credits
- Federal Renewable Electricity Production Tax Credit (PTC)



# Supporting Financial Programs:

## Financial Incentives Database

Title:	Alternative and Clean Energy Program
Sponsor:	Pennsylvania DCED
Funding:	\$165 million
Description:	The Alternative and Clean Energy Program provides financial assistance in the form of grant and loan funds that will be used by eligible applicants for the utilization, development and construction of alternative and clean energy projects in the Commonwealth. The Program is administered jointly by the Department of Community and Economic Development (DCED) and the Department of Environmental Protection (DEP), under the direction of the Commonwealth Financing Authority.
Funding Type:	Loans, grants
Eligible Projects:	Buildings, Equipment, Land development
Project Areas:	High performance, energy efficient small business building projects; Geothermal and wind energy projects; Alternative energy production projects involving solar technologies (Solar Energy Program)
Eligibility:	Companies and non-profit economic development organizations and political subdivisions where eligible
Contact Address:	Pennsylvania Department of Community & Economic Development Commonwealth Keystone Building 400 North Street, 4th Floor
City ST Zip	Harrisburg, PA 17120-0225
Telephone:	(717) 787-7120
Email:	<a href="mailto:ra-dcedcbf@state.pa.us">ra-dcedcbf@state.pa.us</a>
Website:	<a href="http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=212">http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=212</a>



# Supporting Financial Programs:

## Additional Detail

---

- ◉ Alternative and Clean Energy Program
  - DCED from \$650 Alternative Energy bill
  - Grants for mfg - \$10K/job, <\$2 mill & 50% of project cost
  - Loans for mfg - \$35K per job
  - Loans for distribution - > \$5 million or \$2.25/watt
  - Loans for solar thermal or R&D - \$5 million
  - Grants for feasibility studies – 50% of cost < \$175K
  - Loan guarantee grants - < 75% of deficient funds to \$30 million



# Recommendations and Strategy – Grow from Within

- **Intensify Business Retention/Capture Green Tech Growth from the Current Business Mix:**
  - Business Retention Interviews: Enroll in the State Business Expansion and Retention Outreach Program.
  - Work with growing businesses on sites and facilities.
  - Manufacturing Assistance: connect growing businesses to Catalyst Connection and to state financing sources.
  - Tech Transfer: connect start-ups and small green businesses (Eco-Clean Burners) to Innovation Works.
- **Coordination with the Regional Industrial Development Corporation (RIDC) Industrial Park.**



# Recommendations and Strategy – Attract from outside

---

- **ARTEZ should work closely with more broadly-based entities so that ARTEZ communities and sites will be considered for new/relocated green tech business investment:**
  - Pittsburgh Regional Alliance (PRA)
  - Allegheny County
  - Pennsylvania Department of Community and Economic Development (DCED)



# Recommendations and Strategy – Act as “the Source”

---

- **ARTEZ should attempt to position itself as a central source for information about sites, financing, and labor needs for green tech businesses:**
  - **Maintain up-to-date site inventory in searchable format;**
  - **Maintain up-to-date incentives inventory in searchable format;**
  - **Make connections between the training needs of expanding green businesses and area workforce training programs.**



# Recommendations and Strategy – Green Tech Website

---

- ◎ **ARTEZ should develop and maintain a green cluster website as an adjunct to their current website. Links to:**
  - Current ARTEZ green businesses;
  - Pittsburgh area green assets;
  - Green job incentives;
  - Suitable sites.



# Recommendations and Strategy – Green Cluster

- There are a sufficient number of green businesses in the ARTEZ area to start a green tech cluster.
  - A local ARTEZ green tech cluster should operate *informally* to enhance communications among businesses and develop supply chain connections.
- A formal/organized green tech cluster at a regional or county-wide level would maximize business synergies and marketing potential.
  - Corollary – develop over-arching county or regional green tech strategy.



# Recommendations and Strategy – Green tech incubator

- **An ARTEZ green tech incubator could be feasible and could produce significant economic gains under one of two scenarios:**
  1. **Pursue a privately-funded incubator – support the Thar Technologies expansion plan, which includes a private incubator;**
  2. **Work with the Connelley incubator planners, consider at least four options:**
    - a) **The development of an ARTEZ “feeder incubator” to Connelley;**
    - b) **Postpone any ARTEZ incubator – later develop a strategic concept for meeting a need that the Connelley incubator does not meet;**
    - c) **Encourage the Connelley incubator to operate as a “virtual incubator;”**
    - d) **Concentrate efforts on developing a strategy to capture Connelley incubator graduates.**



# Recommendations and Strategy – Capture Start-ups and Tech Transfer

---

- The three Pittsburgh-area universities are producing of great volume of research and technological applications that have potential commercial viability.
- ARTEZ should maintain relationships with Pittsburgh-area university research centers and use communication networks to attract startups and tech transfer.



# Recommendations and Strategy – Workforce and Training

---

- ARTEZ should leverage training organizations in the area and develop close ties in order to offer customized training to companies that are developing new green products.
- Develop relationship with the Heritage Community Initiatives program:
  - ARTEZ businesses that need training assistance;
  - ARTEZ residents that need training assistance.



# Recommendations and Strategy – ARTEZ RLF

- **Structuring, Marketing, and Expanding ARTEZ Revolving Loan Fund (RLF):**
  - Adopt revised guidelines to gear the RLF to green tech.
  - Market the RLF through:
    - Cross postings with PRA and all the organizations involved in green marketing;
    - Other low-cost methods, such as presentations at conferences and through the LinkedIn network.
  - Once the RLF has a track record, seek other sources to supplement the RLF, such as:
    - Foundation support (The Heinz Foundation);
    - Employee pension plans;
    - Utilities;
    - Pennsylvania Alternative and Renewable Energy (bond-funded) Program;
    - Pennsylvania Manufacturing and Business Assistance Program.



# Recommendations and Strategy – Policy Issues

- Local Government:
  - Consider expedited permitting for green buildings;
  - Consider greening measures for building codes and zoning;
  - Lead-by-Example – Allegheny County is model but local ARTEZ boroughs have been slower to adopt this approach.
- Allegheny County – consider Green Jobs through Employee Pension Investments (model – Los Angeles)
- Allegheny County – use EECBG for Green Jobs RLF and/or Green Buildings RLF
- State Government – Pennsylvania Incentives for Green Manufacturing:
  - Manufacturing incentives need a green twist; or
  - Renewable energy incentives need a green manufacturing twist.