



# Green Jobs Strategies

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## for Older Industrial Communities

Evans Paull

Redevelopment Economics

[ev@redevelopmenteconomics.com](mailto:ev@redevelopmenteconomics.com)

[www.redevelopmenteconomics.com](http://www.redevelopmenteconomics.com)



# Redevelopment Economics

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- Green Job Strategies
- Climate Benefits of Smart Growth
- Brownfields Strategies
- Site Redevelopment Analysis and Financing
- Incentives to Support Smart Growth
- Economic Impact Analysis
- Grant Applications

# National Brownfields Coalition

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Brownfields Federal Policy supported by:



GOLDSTEIN  
BROWNFIELDS  
GROUP



# Green Job Strategy for Allegheny River Towns

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- **Evans Paull, Redevelopment Economics**  
– Brownfields, green buildings and economic analysis tools
- **Chris Steele, CWS Consulting** - Private sector site selection perspective to the community's side of the table (reverse site selection)
- **Richard Greene** – Clean and renewable energy market, funding and incentives
- **Rayo Bhumgara, Sustainable Strategies 2050** – Property re-use and clean technology/ renewable energy and green jobs

# Green Job Strategy for Allegheny River Towns

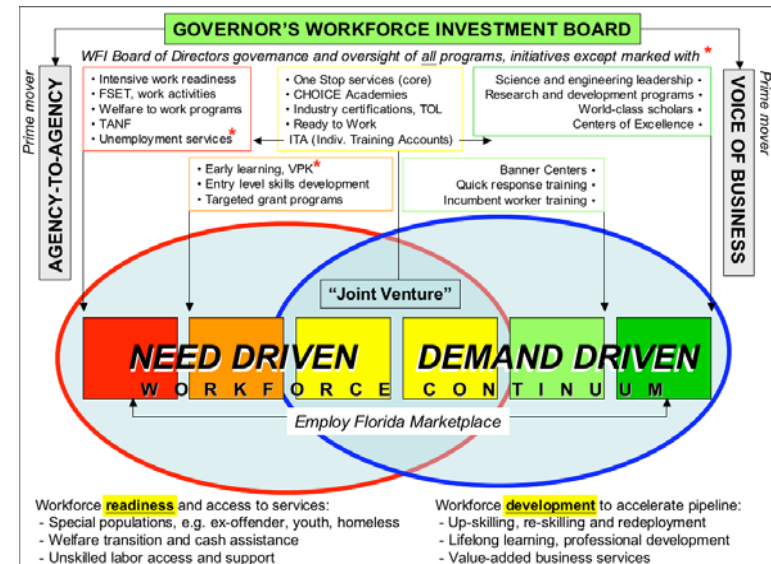
- Project green job growth
- Review best practices – green job marketing and strategies
- Models and competitive areas
- Site selection screening analysis
- Economic trend analysis - shift share and location quotient analysis
- Assess area green assets
- Inventory incentives and compare...
- Current green job base and growth potential
- Green tech cluster???
- Examine potential matches between business expansion opportunities and the land/space available
- Explore green tech incubator



Fort Pitt Brewery and Eco-clean Burners

# Defining Green Jobs - Florida

- Workforce Florida:
  - **“A green job increases the conservation and sustainability of natural resources for the benefit of Floridians. This includes jobs that reduce energy usage or lower carbon emissions, and protect Florida’s natural resources. Green jobs should provide worker-friendly conditions, pay sustainable wages and offer opportunities for continued skill training and career growth.”**





# Defining Green Jobs

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- **Renewable energy production**
- **Component manufacturing for renewables**
- **Green buildings and energy efficiency in the building sector**
- **Waste reduction**
- **Environmental and energy management services**
- **Clean transportation**
- **Sustainable agriculture**
- **Sustainable practices in conventional businesses –**
  - **SMART certified manufacturing;**
  - **Fortune 500 companies - over 50.0% issuing sustainability reports in 2007;**
  - **SMART© Consensus Sustainable Product Standards.**



# US Green Job Growth

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- USCM projection:
  - 750,000 currently to more than 4.2 million by 2038.
- Pew Climate:
  - Jobs in renewable energy grew 9.1% annually, 2003-2007
- American Solar Energy Society (ASES)
  - Jobs in energy efficiency and renewables grew by 8.4 mil in 2007
  - Will grow to 38 mil by 2030 (35% of the economy).
- Apollo Alliance:
  - 380,000 in component parts manufacturing for renewable energy
- McGraw-Hill – green building sector
  - Residential
    - current 6-10% of market,
    - Expected to triple to \$40 - \$70 billion in 2013
  - Commercial
    - Current 10 -12%
    - Projected to triple to \$56 to \$70 billion
- SW PA – green grow by 11,600 (total 30,000) by 2016





Green job growth - brownfields

## **EPA Repower America**

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- Renewable energy – land needs. States with Renewable Energy Portfolio requirements – 6,700 MW by 2025
- EPA tracks:
  - 480,000 sites/15 million acres contaminated properties
  - 10,000 abandoned coal mines
- Screening – 5,000 sites and 1.1 million acres potentially suitable for PV

Green job growth - brownfields

## EPA Re-Power America

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### **Buffalo – Wind farm on Contaminated Bethlehem Steel Property**

- EPA Fact Sheet – “construction could occur without excavating the contaminated soil. Instead, the windmill foundations, service roads and green space cover the contamination.”
- Wind turbines will generate over 50 million kilowatt-hours of electricity each year, enough electricity to power 9,000 homes.



# Green Job Strategies that Target Brownfields – Local Models

- Los Angeles

- Developed a “clean tech” campaign
- Targeted a 20-acre brownfield site for a green tech cluster
- Established two green job incentive funds:
  - a \$15 million port-related Technology Advancement Program (TAP);



- Los Angeles City Employees' Retirement System - \$46 million set aside.

# Green Job Strategies that Target Brownfields – Local Models

- Kansas City “Green Zone” – Concentrates resources to 150 acre under-served area:
  - Job training
  - human resource services
  - business incentives



# Climate Strategies that Target Brownfields – Local Models

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- Cincinnati counts redeveloped brownfields as part of carbon reduction:
  - For every 0.23 acres of existing forest that is maintained, approximately 1 metric ton of CO<sub>2</sub> emissions is saved.
  - For every 0.01 acres of deforestation of greenfield properties avoided, approximately 1 metric ton of CO<sub>2</sub> emissions is saved.
  - For every 25.6 tree seedlings planted on a redeveloped brownfield site, approximately 1 metric ton of CO<sub>2</sub> emissions is saved.
  - For every 680 pounds of waste not placed in a landfill by incorporating recycling of construction and demolition materials into brownfield redevelopment, approximately 1 metric ton of CO<sub>2</sub> emissions is saved.
  - For every 0.18 cars eliminated from the roadways as a result of building businesses closer to the urban population through brownfield redevelopment, approximately 1 metric ton of CO<sub>2</sub> emissions is saved.
  - For every person that resides in a clustered mixed-use development instead of a suburban-style residential subdivision, approximately 2.7 metric tons of CO<sub>2</sub> emissions is saved

## Economic and Competitive Analysis

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### ***Economic Analysis:***

- Test regional strength in green job-related sectors
- Employment trends in green-related sectors;
  - Shift-Share and Location Quotient Analysis
- Strength in:
  - Energy sectors
  - High tech manufacturing
    - Computer and electronic manufacturing
    - Electric equipment and alliance manufacturing

### ***Competitive Analysis:***

- Site selection screening -
  - Comparison to “Fourteen Competitor” cities through site location rating system
  - Competitor regional green industrial parks
- ***Conclusion: Pittsburgh is very competitive for green job growth***

Development of Green Job Strategy

## Models and Competitors

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### *Competitive analysis*

*- Erie, PA:*

- HeroBX Bio-Fuels re-use of International Paper site, Erie PA, 38 jobs



# Models and Competitors

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## **Keystone Industrial Port Complex** in 2,400-acre US Steel, Fairless Hills, PA

- Start-up solar material manufacturer AE Polysilicon Corporation,
- Spanish wind energy manufacturer Gamesa Wind US LLC, and
- Bard Bio-fuels, a 60 Mgy soybean-based biodiesel plant



**Incentives** - \$11.92 million in loans, grants, tax incentives

**Dollars Leveraged:** \$104 million

**Jobs Leveraged:** 450



# Models and Competitors

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## **Detroit (Wixom) - Energy Park Reuse of Ford Plant**

- Renewable energy park
- 2,800 jobs
- Xtreme Power (advanced battery manufacturer)
- Clairvoyant Energy (PV manufacturers)
- \$100 million in tax breaks

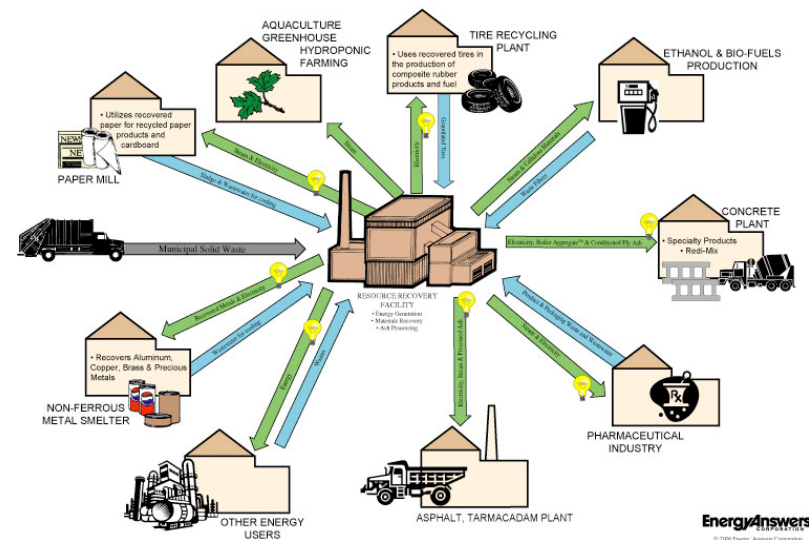


# Models and Competitors

## Baltimore – CHP Plant could Anchor Industrial Redevelopment

- Energy Answers – Combined Heat and Power reuse of FMC fertilizer plant
- 120 MW plant
- 150-160 jobs
- Using 20 acres of 90-ac FMC plant, remainder complimentary industrial

## Resource Recovery Based Eco-Industrial Park



# Current Green Job Base and Growth Potential

*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



- Exterior Technologies – solar skylights



- Flabeg Corp – concave mirrors for solar

# Current Green Job Base and Growth Potential

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- Convertteam – electrical systems for solar and wind



- Thar Technologies – supercritical fluid alternatives to solvents



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

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

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

# Assessment of Green Assets

## ***Assessment Of Green Assets***

- Research and tech transfer
  - University research institutes
  - Federal research facility
  - Tech transfer support
- Labor and training resources
- Inventory federal, state, and local incentives applicable to green jobs
- Public sector and “leading by example”
- Marketing and communications for green jobs
- Natural features, trails, green infrastructure

- Public sector - leading by example – Allegheny Co jail – solar hot water system



## ***Conclusion:***

- ***Need over-arching regional green tech cluster.***

# Green Job Strategy for Allegheny River Towns

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## *Elements of Recommended strategy*

1. Expand from within through business retention, concentrating on sustainable manufacturing
2. Marketing for relocations from outside the region
3. Supporting start-ups and small business growth
4. Maximizing area green assets
5. Creating regional green tech cluster
6. Funding sources to support green tech business expansion and relocation
7. Funding sources for project implementation
8. Structuring and targeting the ARTEZ Revolving Loan Fund (RLF) for maximum impact
9. Identifying potential funding sources to supplement the ARTEZ RLF
10. Policy issues for state and local government
11. Supporting private green tech incubator



# Green Job Strategy

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