



# Utilizing Brownfields to Power America

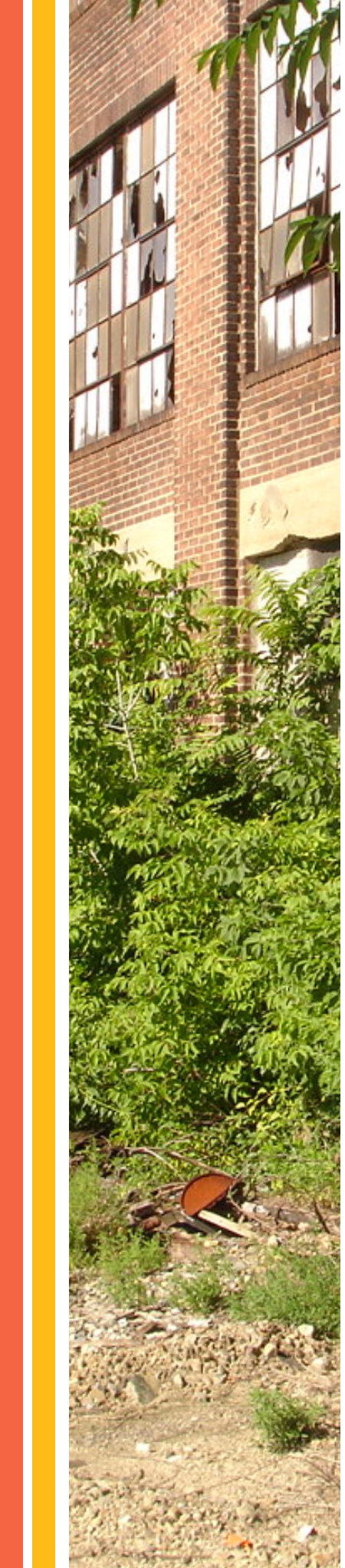
NACDEP Annual Conference

Park City, Utah

May 20, 2012







# Program Objectives

- Brownfield to Greenfield?
- Renewable Energy Drivers
- Brownfield Redevelopment – Benefits & Challenges
- Kirby Tire Recycling Project
  - Project overview
  - Organizational support & partners
  - Current status
- Recommendations on replicating in other rural communities?
  - Project process flow
  - Keys to success
  - Lessons Learned
- Extension's role in brownfield to greenfield redevelopment strategies?

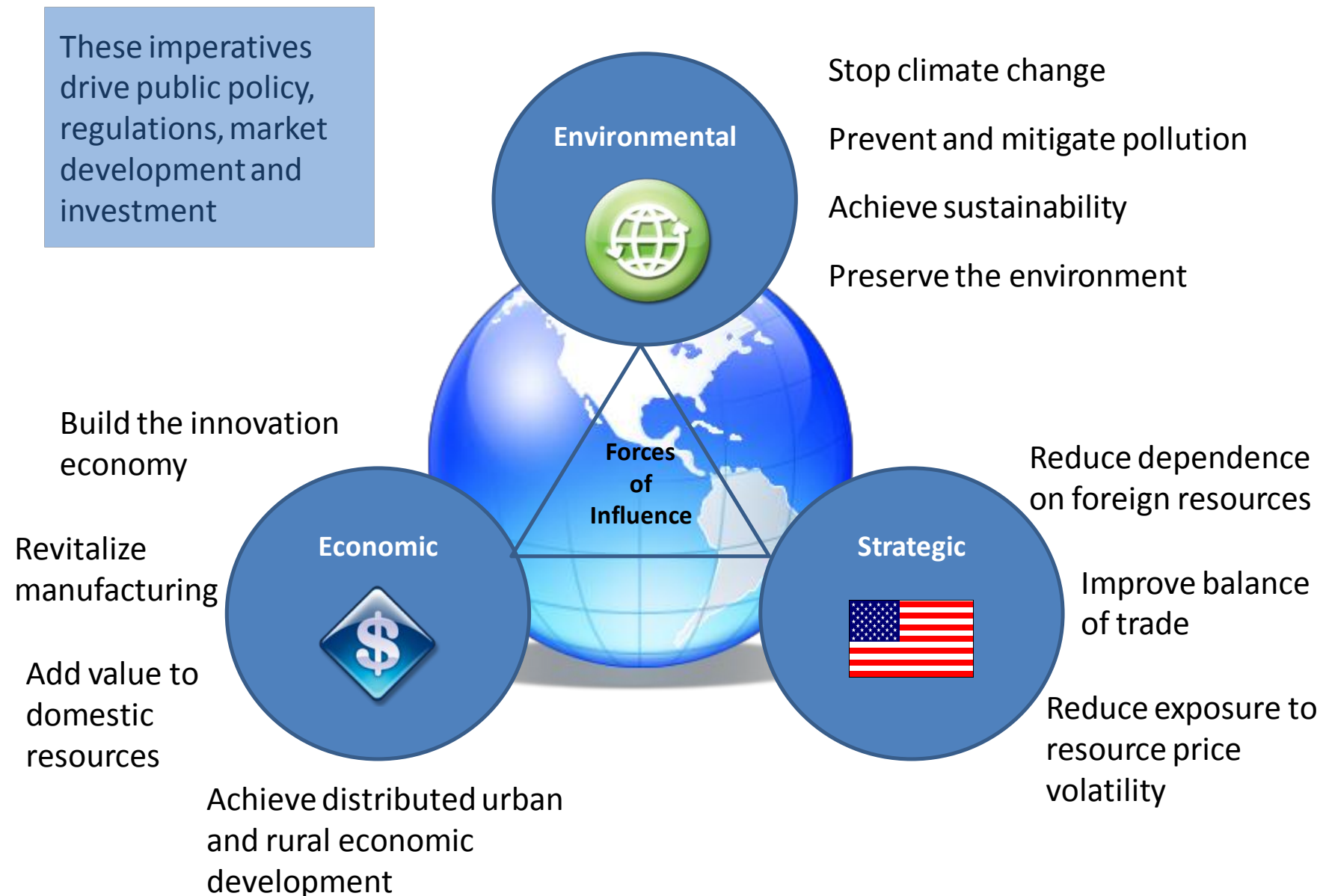
# What is a Brownfield?

The U.S. EPA defines the term "brownfield site" as real property, in which the expansion, redevelopment, or reuse may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.





# Energy Drivers & Trends







# Brownfield Community Impacts

- Abandoned or dilapidated buildings on brownfield sites signal neglect even in an otherwise well-maintained neighborhood.
- Contaminants found on brownfield sites can pollute soil, air, and water resources both on- and off-site posing environmental and public health threats.
- Neglected sites are a breeding ground for illegal activities impacting public safety.





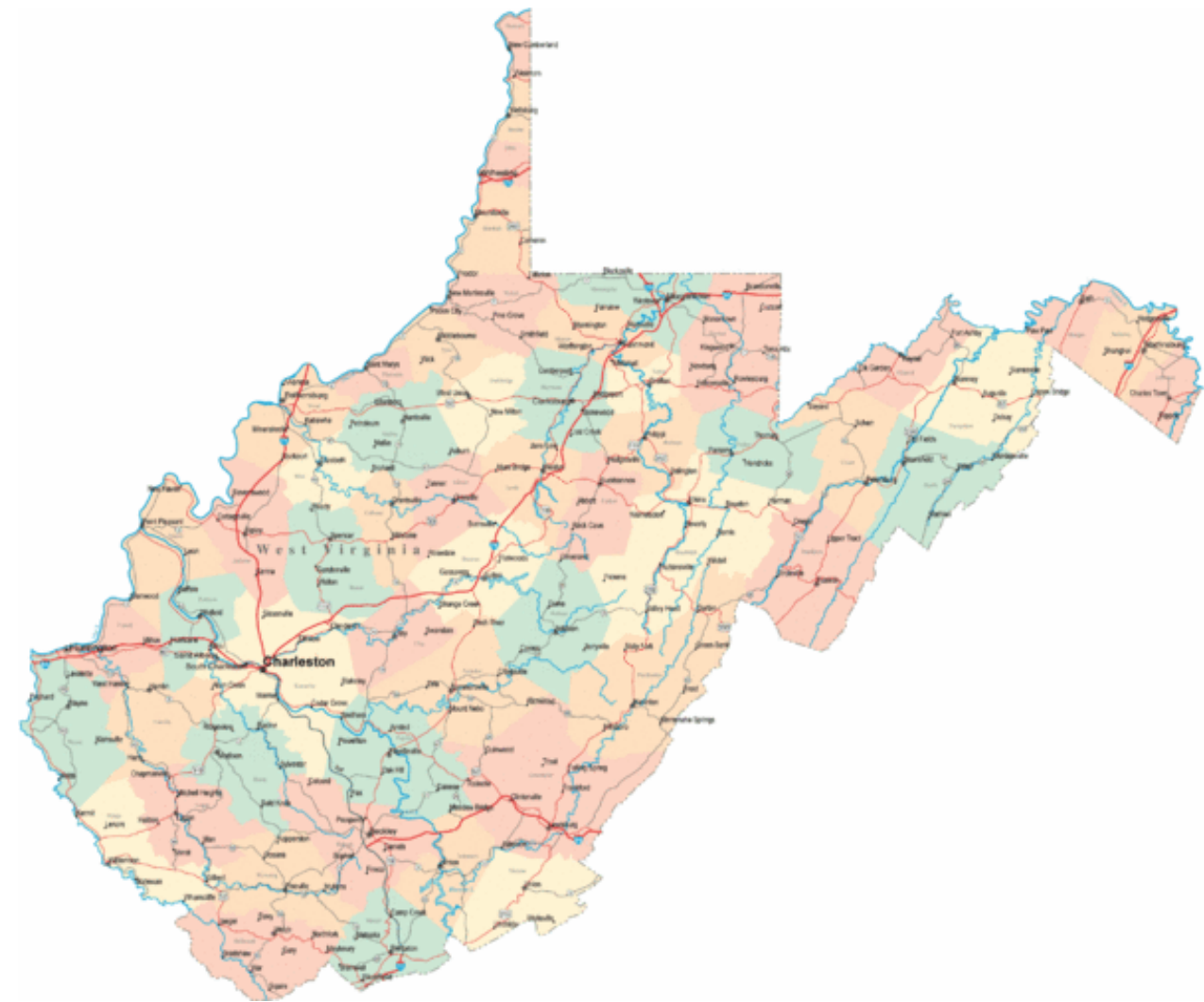
# Brownfield Redevelopment – Potential Project Benefits

- **Infrastructure** - Often have critical infrastructure in place including electric transmission lines, roads, and water.
- **Zoning** - Adequately zoned for such development.
- **Demand** - Energy Projects provide an economically viable reuse for sites with significant cleanup costs or low real estate development demand.
- **Land Use** - Take the stress off undeveloped lands for construction of new energy facilities.
- **Employment** - Provide job opportunities.
- **Revenue Generation** - Restore tax base to a local community.



# Brownfield Redevelopment - Potential Project Benefits (cont.)

- Contaminated land can support the increasing demand for renewable energy development.
- According to the U.S. EPA there is an estimated 490,000 potentially contaminated sites covering almost 15 million acres in the U.S.



State of West Virginia  
15,507,200 acres





# Brownfield Redevelopment - Potential Project Challenges

- High cost associated with site cleanup.
- Environmental requirements
  - Phase I
  - Phase II
  - Voluntary Action Program (VAP)
- Clear property title to gain site control.
- Developer / Investor concern over ongoing liability.
- Lengthy Process may not always align with developers timeline.
- Lack of understanding state and federal brownfield rules and support programs.



# What was the catalyst for the Brownfield to Greenfield project in Wyandot County?





# Kirby Tire Fire – History

- 25 million tires / 110 acre site.
- Tire piles 40 ft. high, 200 ft. wide, and 1,000 ft. long.
- Court shut down Sept. 1998.
- 250 firefighters, the Ohio Air National Guard, U.S. EPA, Ohio EPA and others spent five days battling the August 1999 arson fire.
- Removed 65,000 tons of waste.
- Treated 17,335,021 gal. of water
- 26 million dollar clean up.







# OSU Extension's Role in the Kirby Project

- Delivered Educational Programming on Brownfield Redevelopment?
  - Clean Ohio Brownfield Revitalization Fund - **Brightfield and Cleanfield Program**
  - Ohio EPA Voluntary Action Program (VAP)
- Established local task force
- Incorporate the brownfield project into the Comprehensive Economic Development Strategy.
- Facilitated meetings with state agencies.





# Organizational Support & Partners

- Renewable energy suppliers
- Utilities
- Developers & Investors
- Land owners
- State Partners
  - EPA Regional & State representatives
  - Ohio Department of Development
  - Ohio Department of Energy
- Local Community Partners
  - County Commissioners
  - Township Trustees
  - Economic Development Board
  - Chambers of Commerce
  - Local champion from environmental industry



# Kirby Tire Project – Status Update

- Debrief from PSEG Wyandot Solar Project.
- Develop local brownfield redevelopment subcommittee.
- Phase I environmental study - Locally funded .
- Signed MOU.
- File Ohio EPA - Voluntary Action Application.
- Awarded \$186,000 to finalize Phase II environmental study.
- Submit Covenant Not to Sue to Director of Ohio EPA.





# Keys to Success – Process Flow

Do Your Homework



Outreach & Education



Build Your Local Team



Identify Brownfield Sites



Will Renewable Energy Work?



Gain Consensus & Structure Reuse Plan







# Keys to Success

## **1. Research brownfields (Do your Homework)**

- State environmental regulations.
- State and federal funding programs.

## **2. Outreach & Education**

- Conduct educational sessions with local stakeholders, elected officials, and general public.

## **3. Build your local team**

- List local stakeholders and role they will play in the project.
- Identify state level and utility partners.





# Keys to Success

## **4. Identify property**

- Map out the location of brownfields in the community.
- Identify property ownership and liens.
- Confirm it meets state standards of brownfield.
- Inventory completed environmental studies.

## **5. Is site a good fit for a renewable energy project?**

- Understand state renewable energy policy.
- What is the best renewable energy technology for the site?
- Identify electrical substations and discuss the potential with the utility provider.

## **6. Develop local consensus & structure a reuse project**

- Establish timeline and budget for required cleanup
- Identify potential investors and developers
- Host monthly status meetings



# Lessons Learned

1. Know the brownfield rules!
2. Understand how renewable energy fits into your reuse strategy. Is it feasible?
3. Generate local momentum on potential benefit of project.
4. Draft Memorandum of Understanding (MOU)
  - Local government
  - Local economic development office
  - State EPA
  - State Department of Development
  - Developer
  - Environmental firm
5. Develop a Transparent Timeline – plan for the worst and hope for the best.



# Extension's Role

- Set the Stage - Facilitate the teambuilding and visioning process.
- Educate the local elected officials and local leaders on brownfield redevelopment.
- Enhance local understanding through new programming focused on renewable energy technologies as a viable redevelopment use of brownfield sites.





# Extension's Role – Additional Resources

## Siting Renewable Energy on Potentially Contaminated Land

<http://www.epa.gov/oswercpa/>



RE-Powering Home  
EPA/NREL Feasibility Studies  
Reports and Fact Sheets  
Mapping Tools  
State and National Maps  
Data Information  
Incentives  
Success Stories  
Frequently Asked Questions  
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### Siting Renewable Energy on Potentially Contaminated Land and Mine Sites

EPA is encouraging renewable energy development on current and formerly contaminated land and mine sites when it is aligned with the community's vision for the site. This initiative identifies the renewable energy potential of these sites and provides other useful resources for communities, developers, industry, state and local governments or anyone interested in reusing these sites for renewable energy development.

**"Because of federal investments, renewable energy use has nearly doubled, and thousands of Americans have jobs because of it."**  
- President Barack Obama  
State of the Union address, 2012

[RE-Powering Resources](#) [Redevelopment Tools](#) [Other Related Programs](#)

#### RE-Powering Resources:

- Listen to EPA staff interview the OSWER Assistant Administrator Mathy Stanislaus to discuss renewable energy on contaminated lands in this podcast. This discussion introduces the benefits of RE-Powering and EPA's new Wind and Solar Decision Trees.
  - Listen to [Renewable Energy on Contaminated Lands podcast](#) (6:50 minutes, 6.4MB, MP3) (Download [Windows Media Player](#))
  - Read the [Renewable Energy on Contaminated Lands transcript \(PDF\)](#) (3 pp, 33KB)
- [Handbook on Siting Renewable Energy Projects While Addressing Environmental Issues \(PDF\)](#) (41 pp, 2MB)  
EPA developed a handbook to increase the awareness of the opportunities for siting renewable energy projects while addressing environmental site issues during all phases of cleanup. More information about this handbook is available on the [Reports and Fact Sheets](#) web page.
- [Solar Decision Tree \(PDF\)](#) (18 pp, 815K) and [Wind Decision Tree \(PDF\)](#) (18 pp, 864K)  
EPA Headquarters, EPA's Region 9 Office, and the Department of Energy's National Renewable Energy Lab (NREL) have developed decision trees to screen potentially contaminated and underutilized sites for solar and wind potential. More information about the tool is available on the [Reports and Fact Sheets](#) web page.
- [Renewable Energy Feasibility Studies on Contaminated Properties](#)  
On November 4th, EPA announced that it will be working with the U.S. Department of Energy's [National Renewable Energy Laboratory \(NREL\)](#) to



#### Related Links

##### EPA Energy Resources

- [Clean Energy](#)
- [Climate Change](#)
- [Green Power Partnership](#)

##### Renewable Energy Basics

(National Renewable Energy Laboratory - NREL)

- [Biomass](#)
- [Geothermal](#)
- [Solar](#)
- [Wind](#)



# Extension's Role – Additional Resources

## State EPA Incentive Fact Sheet

<http://www.epa.gov/oswercpa/incentives.htm>



RE-Powering Home  
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State and National Maps  
Data Information  
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### RE-Powering America's Land

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You are here: [EPA Home](#) » [RE-Powering America's Land](#) » Incentive Fact Sheets

## Incentive Fact Sheets

The incentive sheets contain information about federal and state incentives that are available for renewable energy generation and contaminated land redevelopment in each state. While these incentives are typically offered by separate programs, there may be sites at which multiple incentives may be combined to facilitate the development of contaminated lands for renewable energy.

Each fact sheet includes information on available funding (grants, loans, bonds, etc.), tax incentives (abatelements, deductions, credits, etc.), technical assistance and other incentives offered at the state level. In addition you can find information on renewable portfolio standards, net metering, public benefits funds, electricity generation by energy source, limitations on liability, estimated number of contaminated properties, and points of contact as of November 2008.

You will need the free Adobe Reader to view some of the files on this page.  
See [EPA's PDF page](#) to learn more.  
Each incentive fact sheet is in PDF format, 2 pages in length, and approximately 200K to 500K in size.

Choose a state or territory from the map below or from the list to the right.

Also available is a fact sheet on [federal incentives \(PDF\)](#) (2 pp, 228K).



#### Relevant Link

[Database of State Incentives for Renewables & Efficiency \(DSIRE\)](#). [EXIT Disclaimer](#)

Additional and frequently updated information on state, local, utility, and federal renewable energy incentives is available at this site.

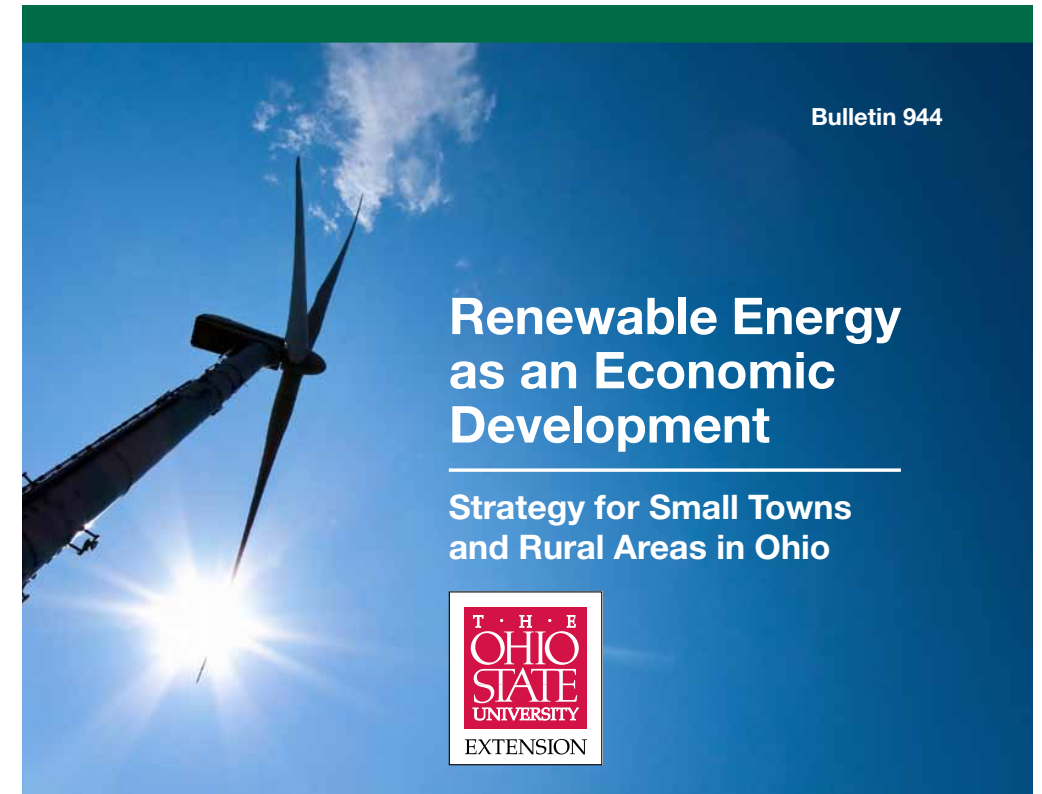


# Extension's Role – Additional Resources

OSU Bulletin #944

Renewable Energy as a Rural  
Economic Development  
Strategy

<http://energizeohio.osu.edu/home>





# Questions?

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