

Three Rivers  
Clean Energy

**ENERGY:**  
**Meeting the Demand**

**June 5, 2008**

**Jan Lauer**

# ENERGY IS A KEY CONCERN FOR GOVERNMENT AND BUSINESS

Because of:

- Climate change issues
- Homeland security concerns
- Political unrest in key energy producing regions - related impact on oil and gas prices and stability of supply
- Dependence of key industries on energy and carbon sources
- Explosive growth in global demand
- Dramatically escalating costs

# WE HAVE THE ENERGY ASSETS TO HELP MEET THESE CONCERNS

- Manufacturing capability across all sectors (nuclear, coal, wind, solar, fuel cells, transmission, etc.) - Westinghouse, Joy, Solar Power Industries, Hamill, etc.
- Cutting edge research – universities, NETL, corporations (CONSOL, Westinghouse, etc.)
- Abundant natural resources (coal, gas, oil, wind, and water) and the companies to capitalize on them – Foundation, Dominion, among others

# WE HAVE THE ENERGY ASSETS TO HELP MEET THESE CONCERNS

- Power generation capacity – WV exports nearly 70%; PA exports 33% of generation
- Industrial sites – ample sites for energy company location and expansion

# MANY STATES POSITIONING FOR LEADERSHIP IN ENERGY

***"We need to declare that we're going to become energy independent. Maine is in a position to demonstrate to the rest of the country what it should be doing,"*** Governor John Baldacci, Maine

***"Alternative fuel development and production is our future as a state. We have this huge moment now in Michigan to blow the lid off with respect to our investment in alternative, renewable fuels and in the technology that those renewable fuels will need in the vehicles that we produce."*** Governor Jennifer Granholm, Michigan

***"This comprehensive and timely energy plan provides "homegrown" energy solutions today, which will create a secure energy and economic future for the people of Hawaii seeks to establish Hawaii as a leader in the global, hydrogen economy..."*** Governor Linda Lingle, Hawaii

***"I will make this state the epicenter of the advanced energy industry. Ohio will create more technology jobs than any other state in clean coal, biofuels, and wind turbines."*** Governor Ted Strickland, Ohio

***"We will also give fast track and advantageous tax treatment to companies investing and creating jobs in renewable energy production, so that Massachusetts becomes the renewable energy center of the world."*** Governor Deval Patrick, Massachusetts

# WITH PENNSYLVANIA AND WEST VIRGINIA AMONG THEM

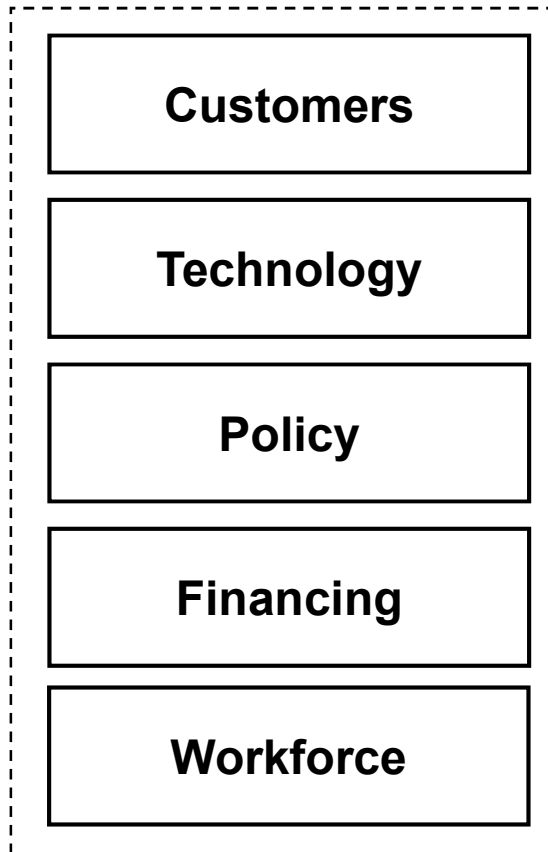
**"Pennsylvania's new economy is being powered by clean energy development."  
Governor Ed Rendell, Pennsylvania**

**"Energy is quickly becoming one of the biggest issues facing the country today. It is important for Kentucky to develop a solid plan of action in order to capitalize on our natural resources and provide high-quality job opportunities for our citizens." Governor Ernie Fletcher, Kentucky**

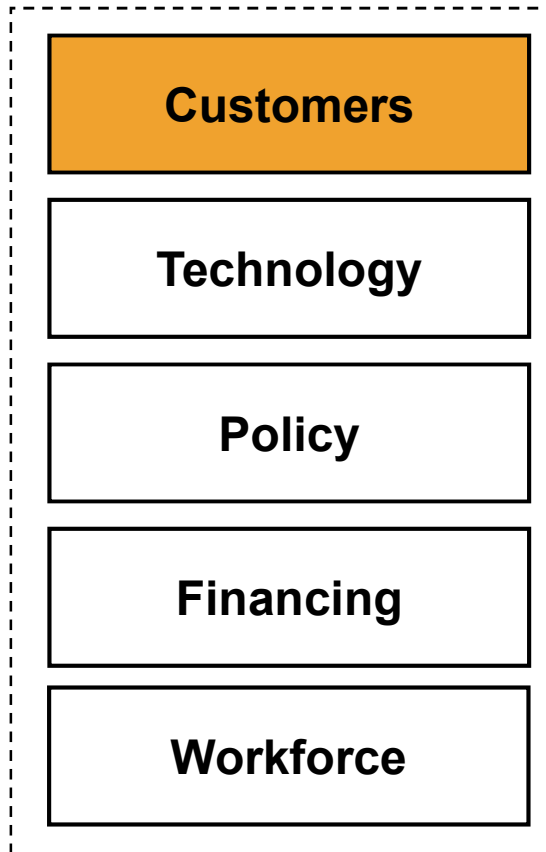
***"If we are to have a truly meaningful impact on global environmental issues, we must lead the world in developing environmental solutions, and market those solutions to companies, states and countries who can only covet Vermont's deeply imbued environmental ethic (Biofuels Proposal)."*  
Governor Jim Douglas, Vermont**

**Our goal in West Virginia is to become a leader in converting coal to liquids and other products such as natural gas, diesel fuel, jet fuel, hydrogen or chemicals." Gov. Joe Manchin, West Virginia**

# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS

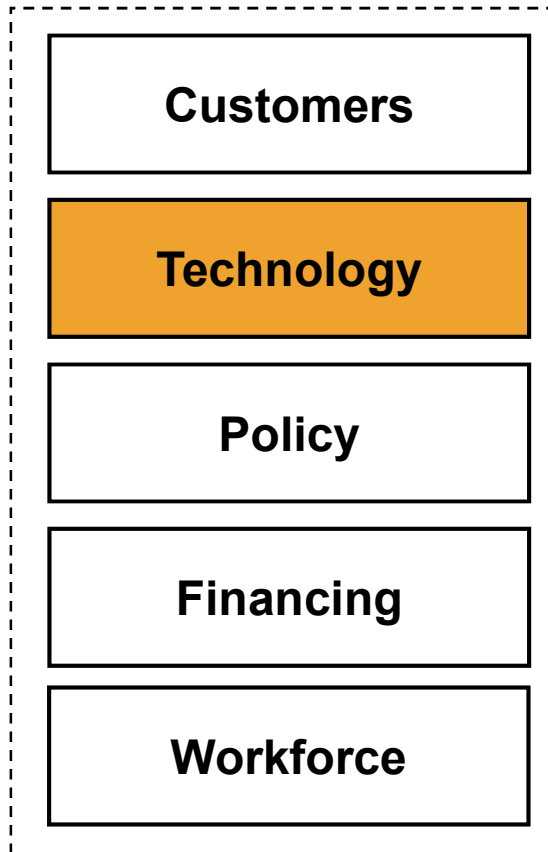


# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS



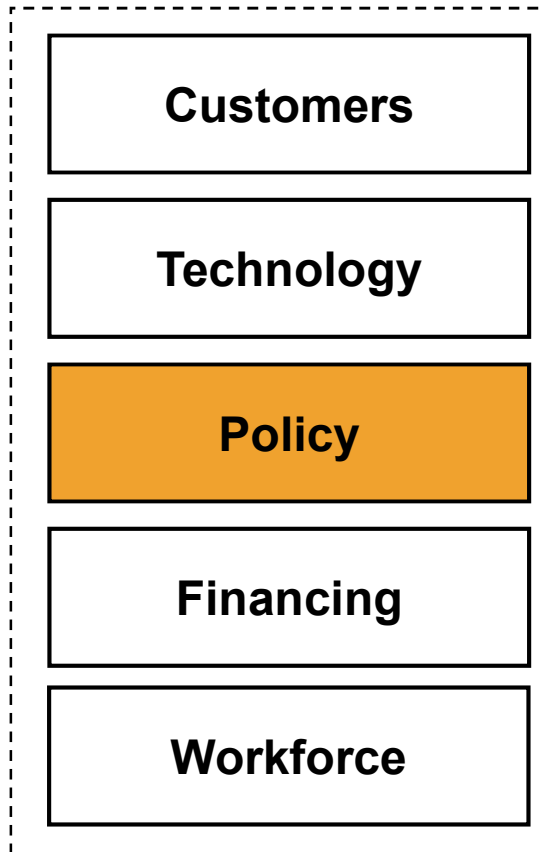
Support strategies that provide competitive advantage for power users

# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS



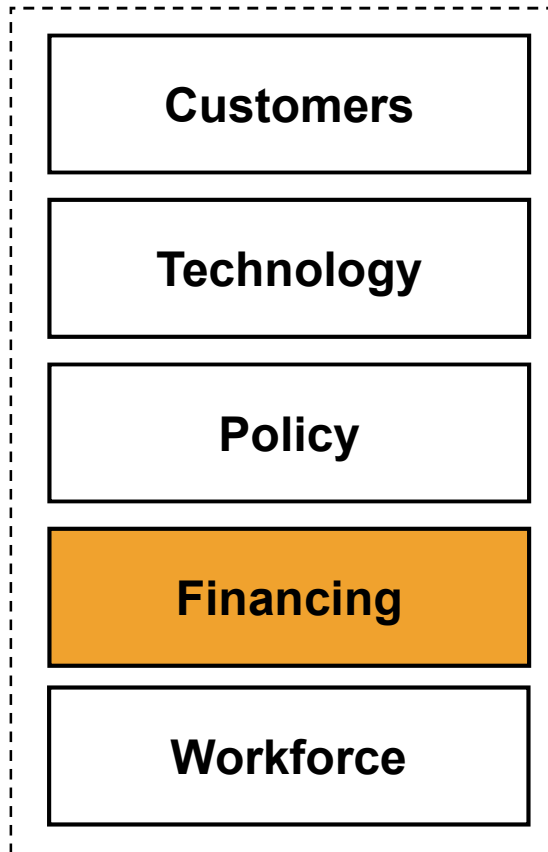
Devise ways to make all energy sources efficient, cost-effective, and clean

# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS



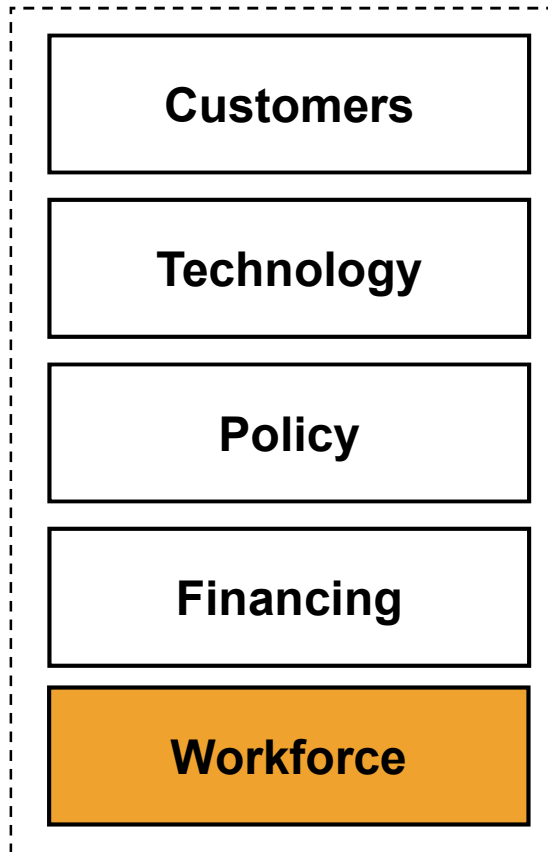
Support policies that call for economic (low-cost) and environmentally conscience solutions

# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS



Provide special support/subsidy for new technologies to reach a point of competitiveness as well as funds for pilot projects

# ECONOMIC DEVELOPMENT STRATEGY FOCUSES ON KEY BUILDING BLOCKS



Support strategies to address an across the board shortage of professional and technical workforce is reaching crisis proportions

# OUR OPPORTUNITY IS NOW

- We have an unusual opportunity to create jobs in a region that has been concerned about slow job growth across the board.
- How terrible it would be to create jobs and be unable to fill them.
- We also have the opportunity to create jobs no matter which direction the energy future goes, since we have business opportunities in renewables, nuclear, and coal.
- So that means it's in the region's interests to help energy companies succeed. What is needed to do that? Each needs slightly different things, but the one thing they all need is a workforce.

## MYRTLE BEACH: HELP WANTED

“We’re now mining more coal than at any other time in history. But our pool of experienced miners is exhausted. Until now, we didn’t need to attract young people because we could replace miners with experienced people who had been laid off. Now, with 3000 to 4000 miners retiring this decade, coal mining will be a steady source of job opportunities for young people.

We’re responding to that anticipated need by ratcheting up our recruitment efforts. It’s a challenge.”

-Tom Hoffman, VP of Public Relations, CONSOL

# MINING INDUSTRY HEADED TOWARD CRISIS DUE TO LACK OF WORKERS

- 80,000 coal miners across the US
- 80% in the eastern US
- 40% of eastern miners are in Pennsylvania and West Virginia (about 26,000)

*The National Mining Association estimates that the U.S. will need 50,000 new coal miners to meet increasing demand and to replace retirees.*

# DOE SOUNDS THE ALARM FOR LINEWORKERS

*A 2005 U.S. Dept. of Energy report says that:*

- **Over the next decade there will be a 10,000 lineworker shortage (current workforce is 58,000) – nearly 20%!**
- “...which could limit the nation’s ability to maintain and/or increase the electricity supply, potentially impacting the economic and national security of the United States.”

# OIL AND GAS INDUSTRY FACING WORKER SHORTAGES

- According to the Interstate Oil and Gas Compact Commission, the average age of employees working for major operators and service companies is in the range of 46 to 49 years old.
- With the average retirement age for the industry being 55 years, the industry faces a crisis in the next 7 to 10 years as **more than half of the employee base leaves the work force.**

# WIND INDUSTRY ANTICIPATES HUGE JOB CREATION

Bill Swisher, Executive Director of the American Wind Energy Association says:

- The wind energy industry currently employs about 45,000 people in the United States and had \$9 billion worth of investment last year (2007), a 45 percent increase from 2006.
- Given that growth, we're already seeing constraints in terms of workers.
- By 2030, **nearly a half-million new jobs could be created** in the wind industry - in manufacturing, construction, and operation.

# SOLAR INDUSTRY GROWTH NEEDS WORKERS TO SUPPORT IT

Rhone Resch, President of the Solar Energy Industries Association says:

- Last year 314 megawatts of new solar capacity was installed in the U.S. - enough to power about 80,000 homes.
- The market was worth just about \$200 million five years ago. Last year, it topped \$2 billion, **up by a factor of ten.**

# BOOM IN NUCLEAR ENERGY COULD BE WORKFORCE LIMITED

Nuclear Energy Institute says:

- A worker shortage could be one of the biggest roadblocks for a nuclear energy revival in the U.S.
- Nearly 30 percent of the people who currently work in the industry will be eligible to retire in five years. Many of the experts in plant construction have already retired.
- Another 13 percent could leave their jobs through attrition.

# BOOMERS ARE RETIRING

- According to the US Bureau of Labor Statistics, more than 25 percent of the working population will reach retirement age by 2010, resulting in a potential worker shortage of nearly 10 million.
- So competition for the workers that are available will be more intense.

## SO WHAT DO WE DO?

- The US DOL ETA conducted six executive forums a few years ago for energy industry executives from the oil and gas industry, electric and natural gas utilities, nuclear energy, and mining.
- The forums had three primary goals:
  - Share how employers can access public workforce services
  - Obtain feedback from employers on what their needs are and how the public workforce system can better serve industry
  - Identify employers' challenges.

# EMPLOYER CHALLENGES CENTERED AROUND FOUR PRIMARY THEMES

- The negative public image that is challenging the industry's recruitment efforts
- The need for skill development of both new and incumbent workers
- The aging of the workforce in the industry and imminent retirement of a large segment of incumbent workers
- The need for both conventional and new approaches to education and training

# KEY IS BRIDGING WORKERS TO JOBS

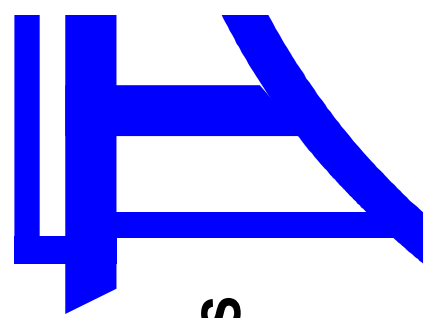
**THE GAP**

**WORKERS**

**JOBS**

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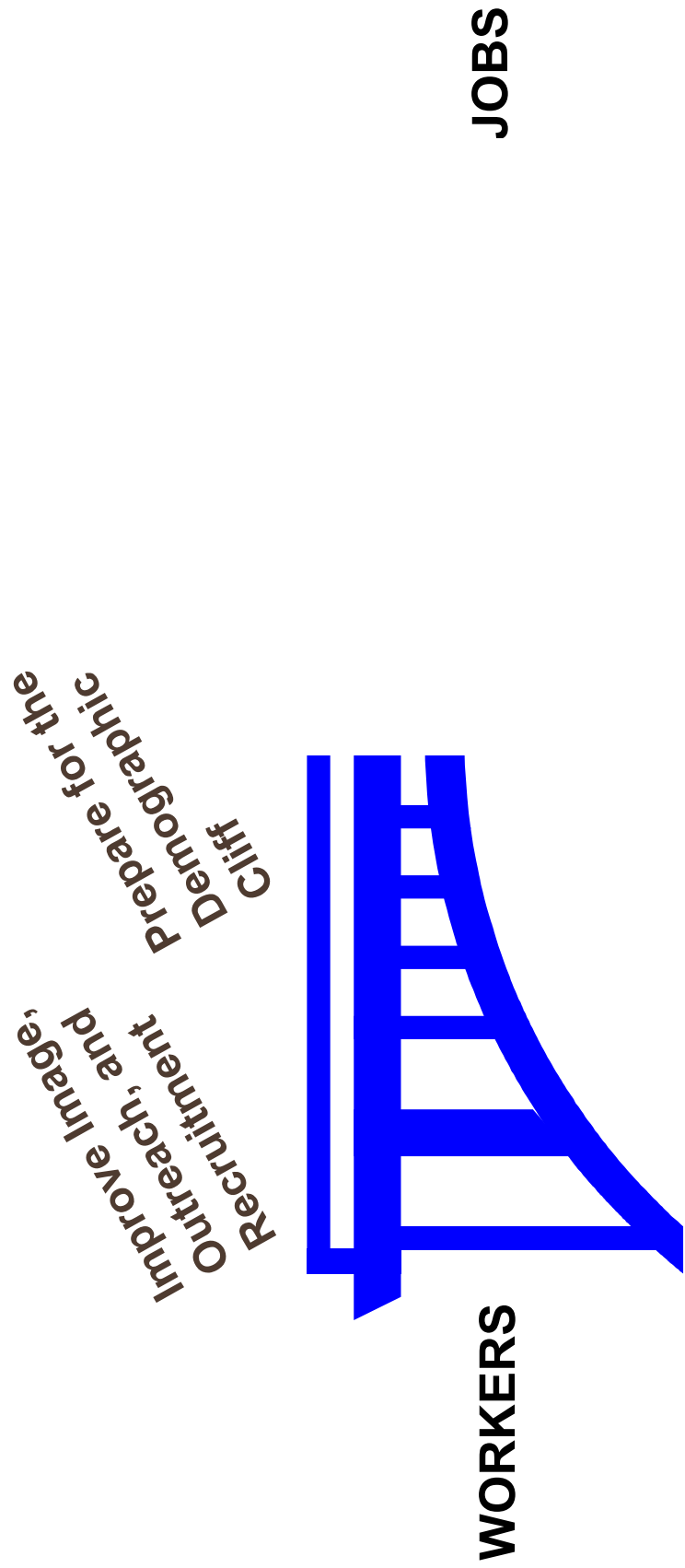
Improve Image,  
Outreach, and  
Recruitment



**WORKERS**

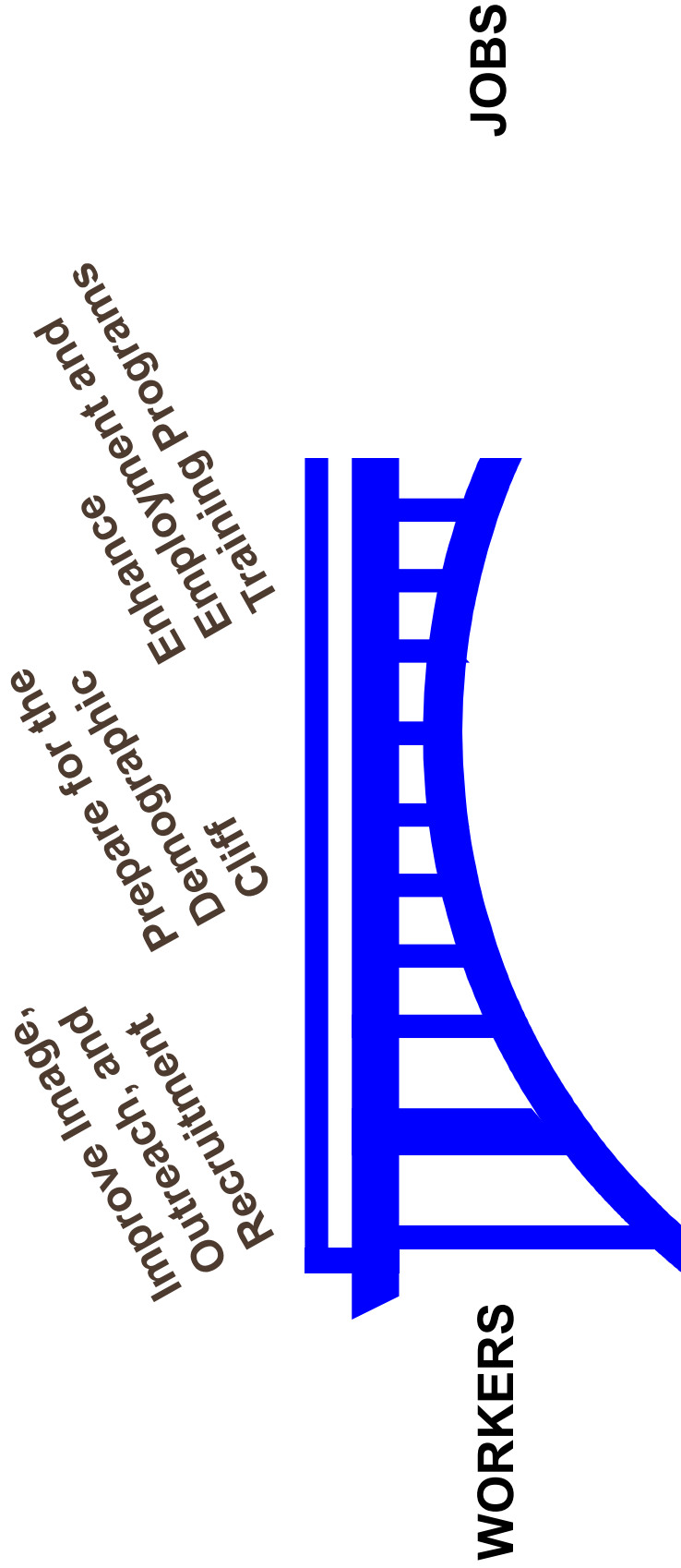
**JOBS**

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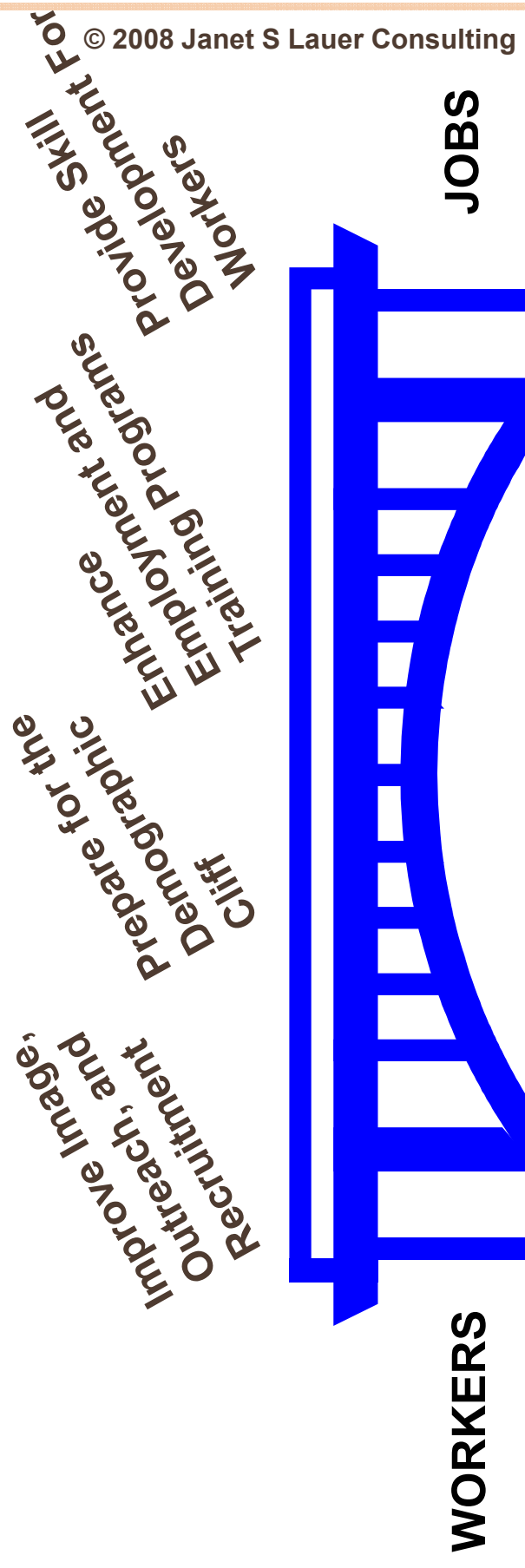


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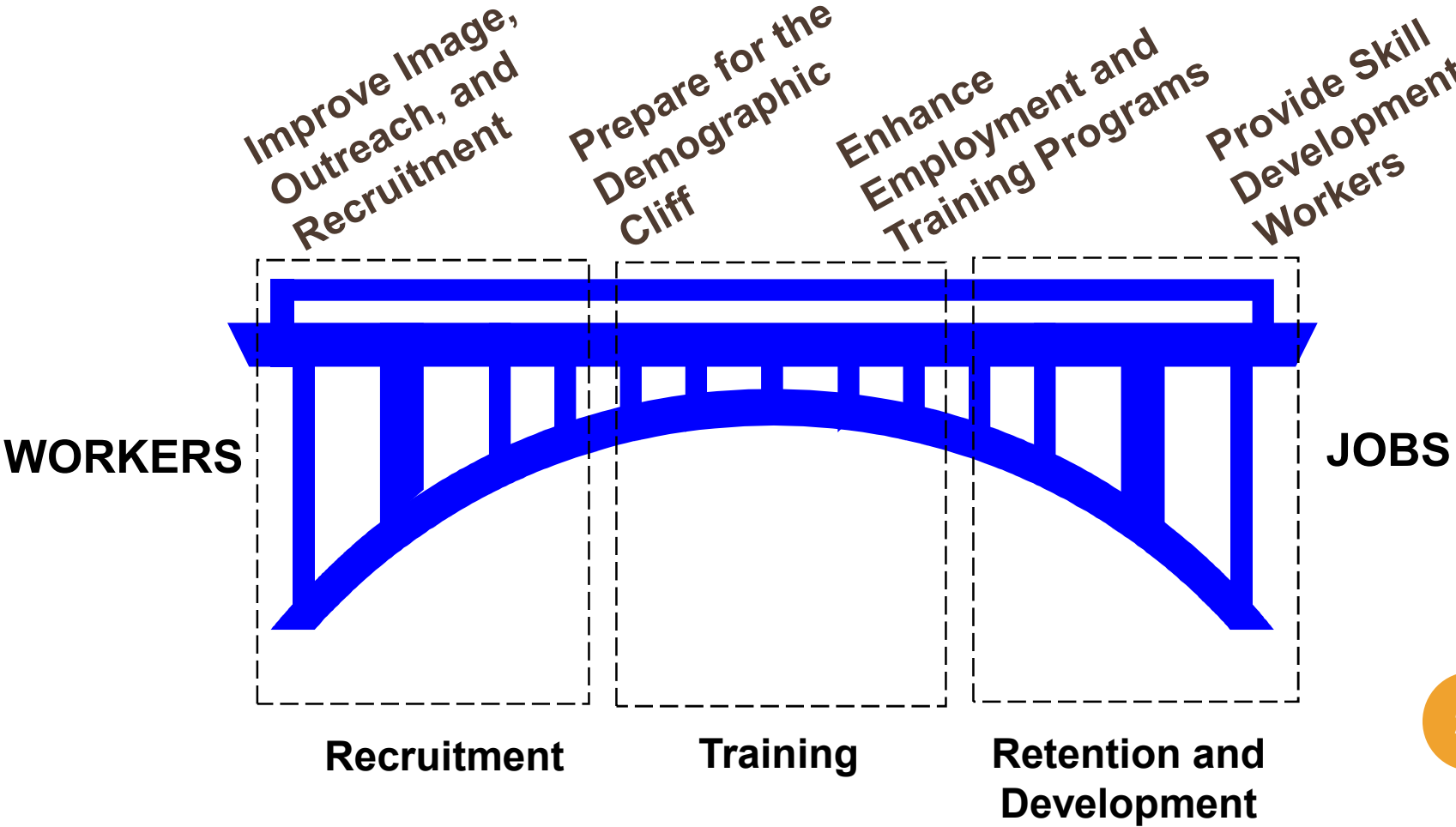
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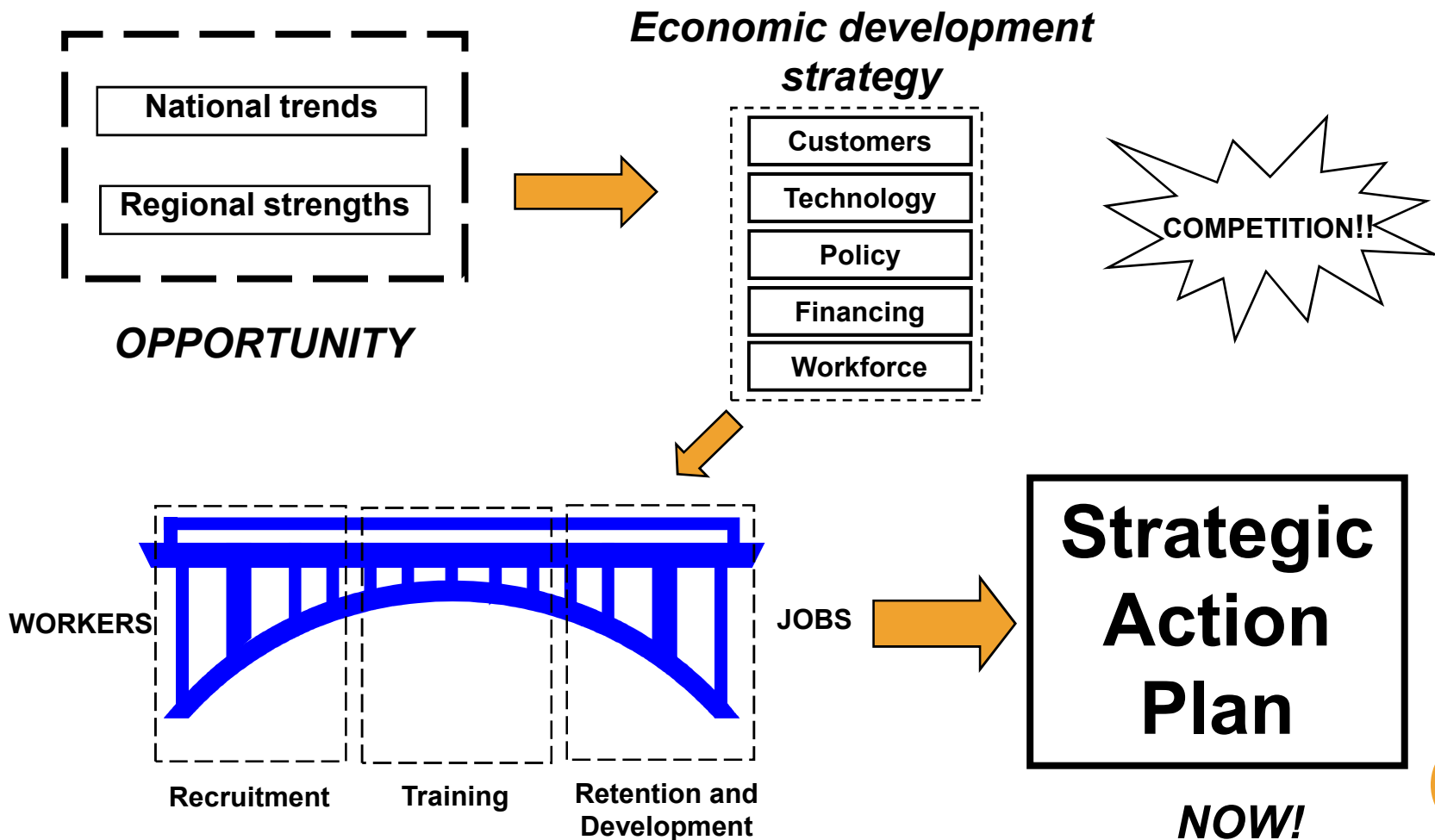


# WORKSHOPS ADDRESS CHALLENGE AREAS



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# THE TIME FOR US TO CAPTURE THE OPPORTUNITY IS NOW



# HELP WANTED

An individual skilled in electronics.  
**Coal miner or solar panel tech?**

Manufacturing technician.  
**Nuclear generator parts or solar panels?**

A chem tech to do quality assurance.  
**Natural gas operation or biofuels plant?**



An individual to work outdoors on electrical equipment at heights in confined spaces.  
**Linesman or a wind turbine tech?**

An individual skilled in plumbing and pipefitting.  
**Power generation or energy efficiency?**

An individual with drilling experience.  
**Oil rig or carbon sequestration?**

# OUR GOALS FOR TODAY

- Listen carefully to the challenges that are put forward
- Bring your ideas as to how to meet these challenges into the workshops
- Create an action plan
- Drive its implementation