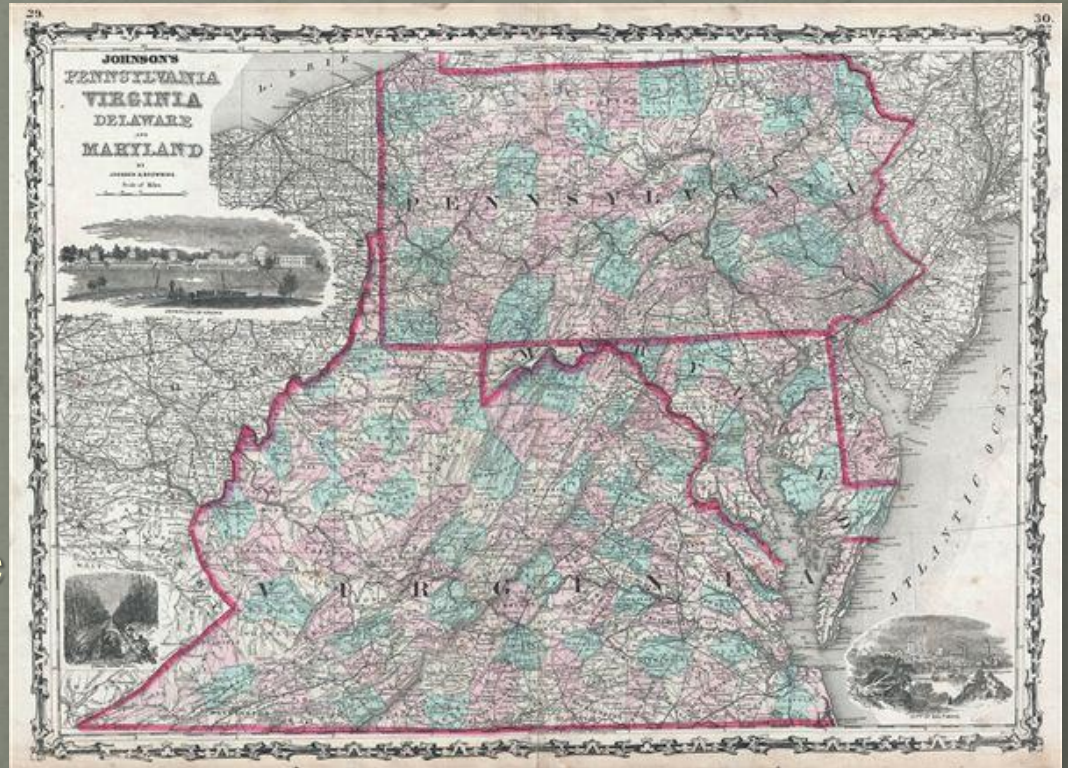


From Western Virginia to the Forks of the Ohio:

*Following the trail that gave the world an
energy industry*

Bill Flanagan,
Allegheny Conference
on Community
Development

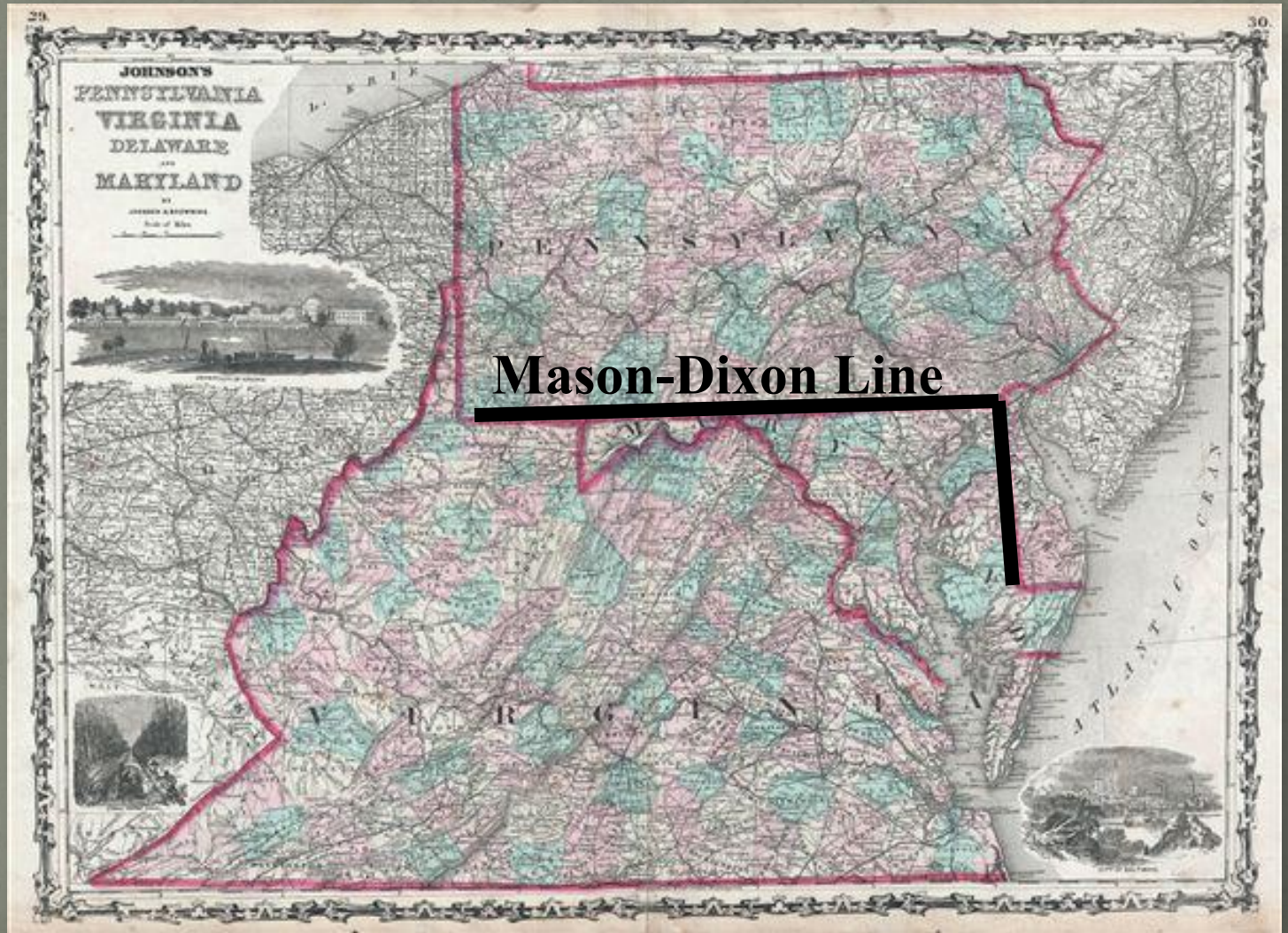


1700s: Our Story Begins

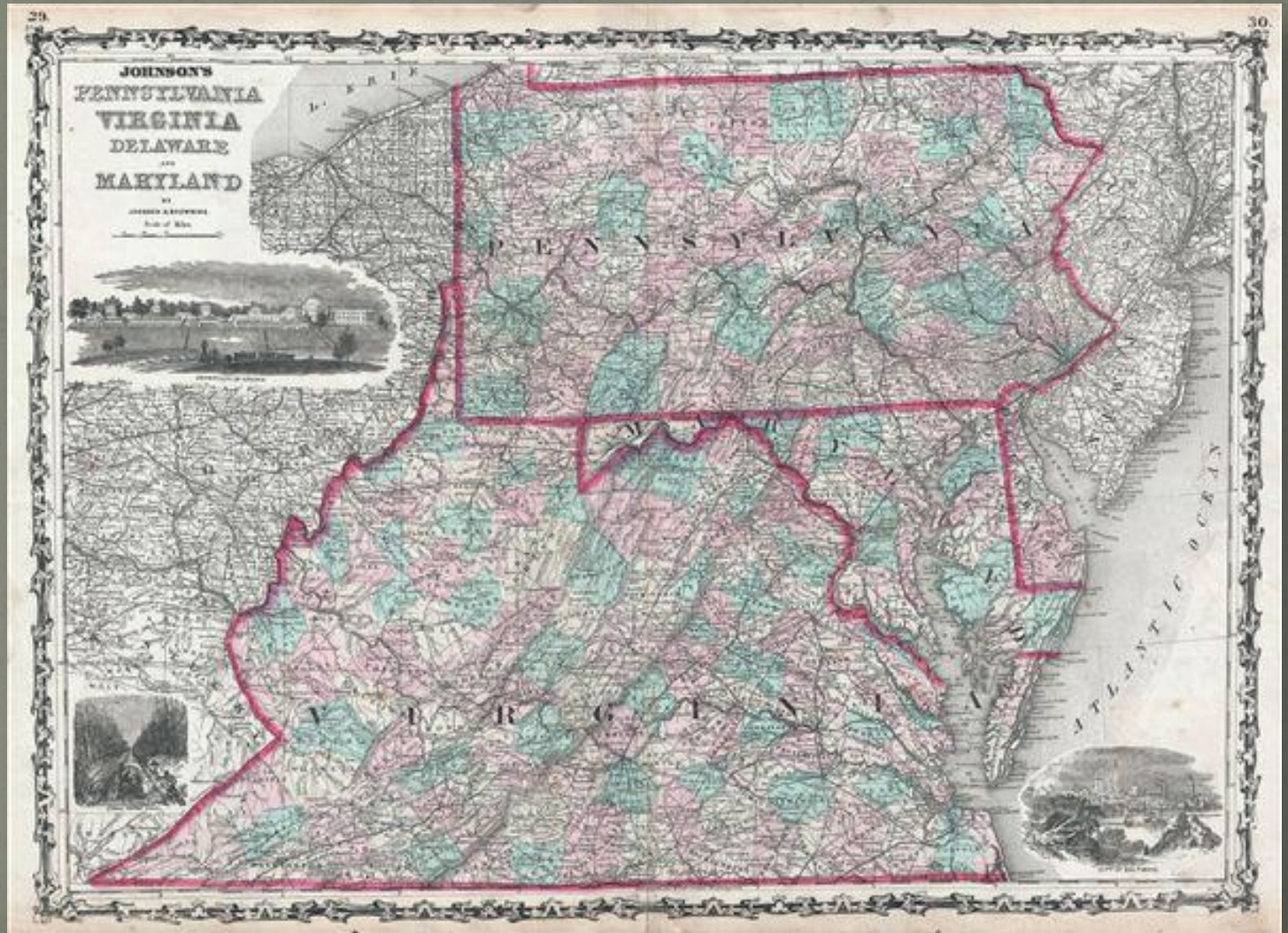
- The “Forks of the Ohio”
- A strategic location brings the world to war



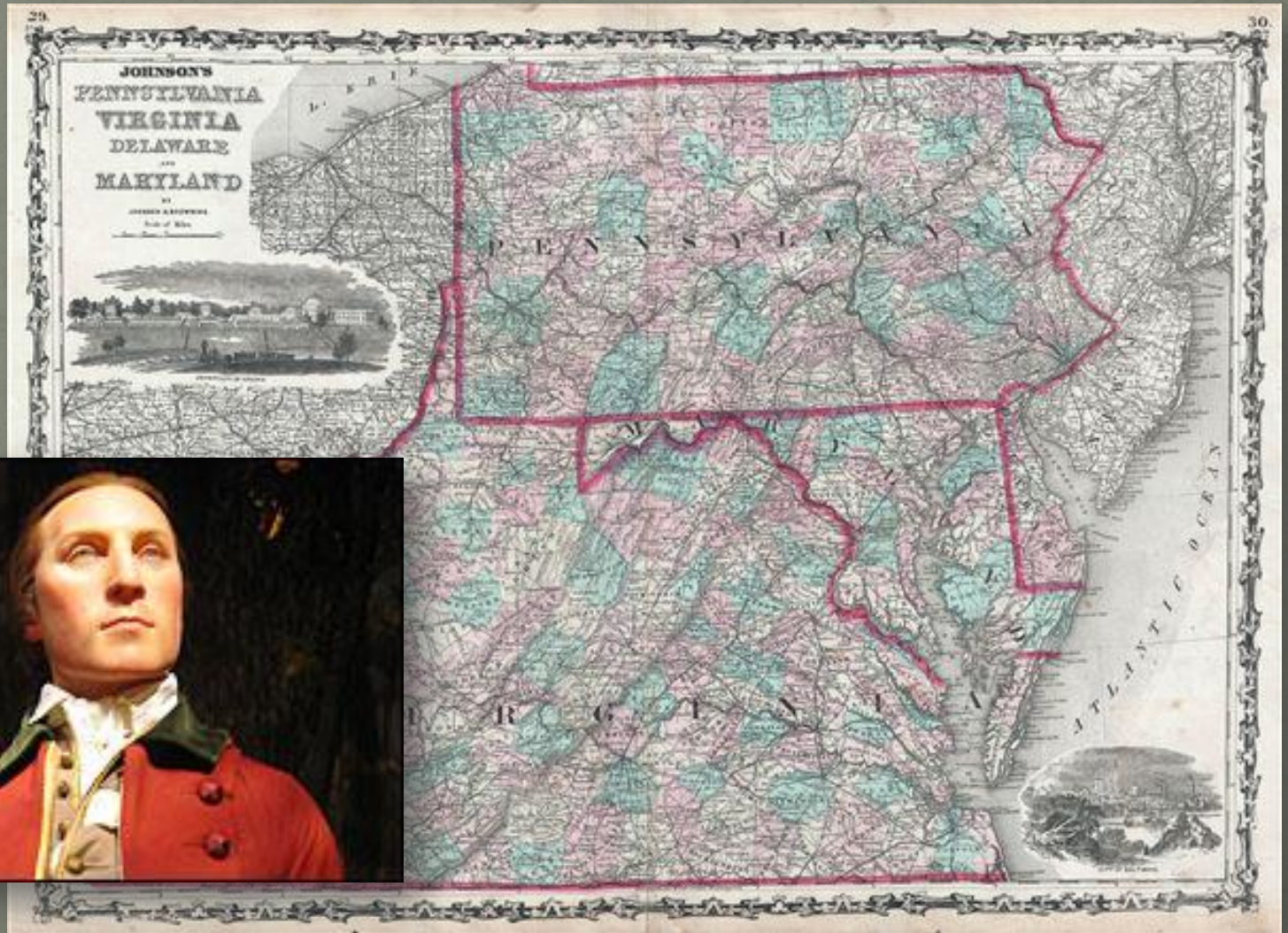
The Potential of the Potomac



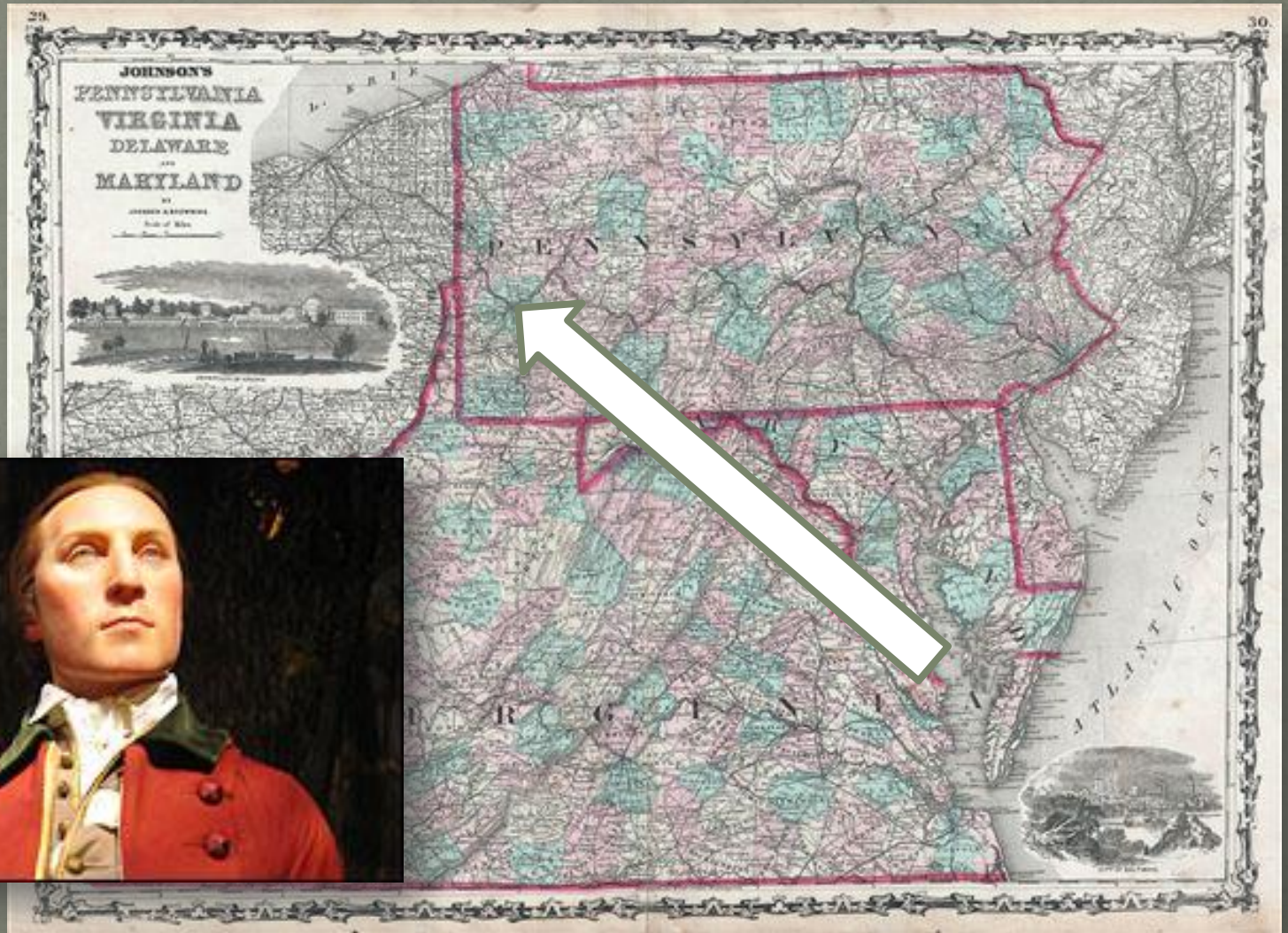
The Potential of the Potomac



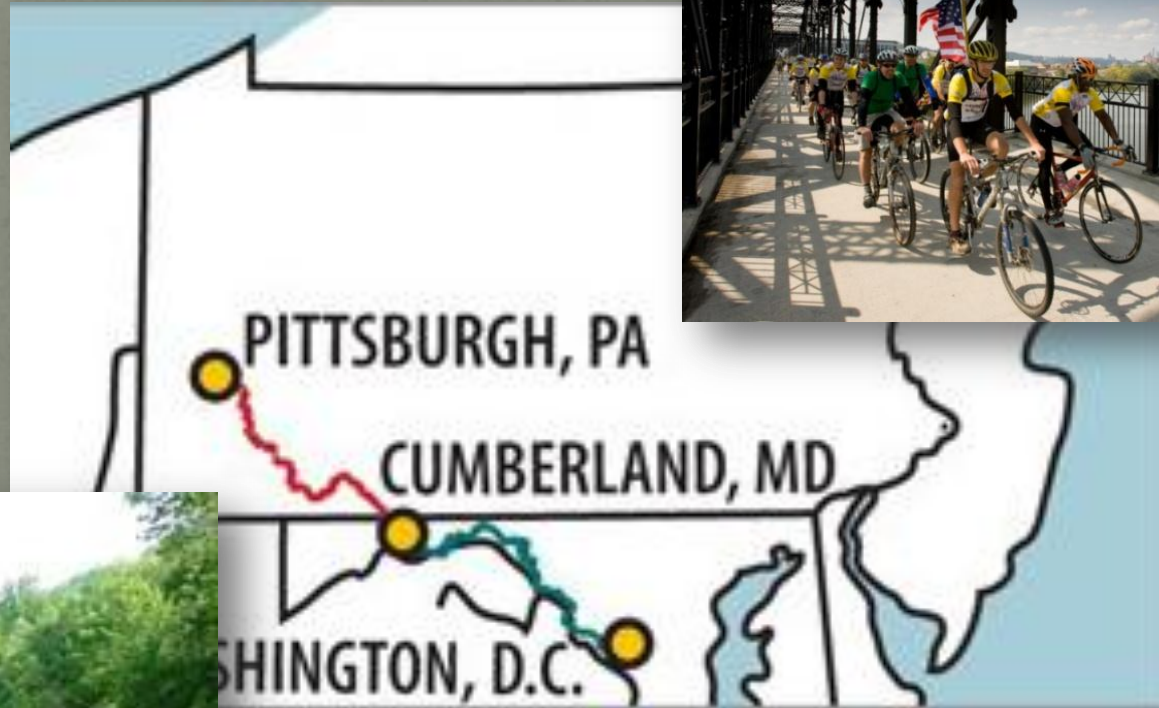
The Potential of the Potomac



The Potential of the Potomac



The Potential of the Potomac



Virginia's Vision

- 1748: First commercial coal mining in United States near Richmond



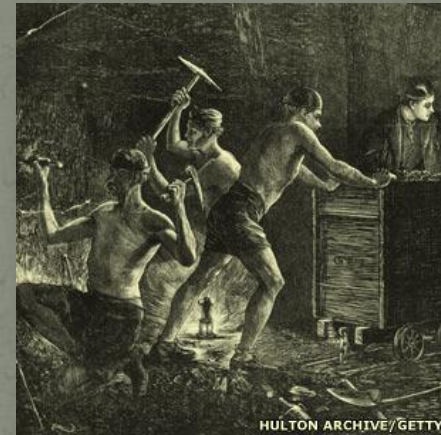
Virginia's Vision

- 1748: First commercial coal mining in United States near Richmond
- 1775: George Washington buys portion of the “Burning Springs” of Kanawha River



Virginia's Vision

- 1748: First commercial coal mining in United States near Richmond
- 1775: George Washington buys portion of the “Burning Springs” of Kanawha River
- 1840s: First commercial use of natural gas in United States to produce salt



Elemental Ingredients

- It was ALWAYS about fire and water! (Coal and the rivers)



Elemental Ingredients

- It was ALWAYS about fire and water! (Coal and the rivers)



We've been mining the Pittsburgh coal seam since 1760.

Crucible of American Expansion

- From rivers to rails, the “Gateway to the West”
- Half of U.S. iron and one third of glass production by Civil War
- The Silicon Valley of the 19th-Century, a magnet for entrepreneurs and venture capitalists



1850s: A Whale of a Problem!



Energy Entrepreneurs

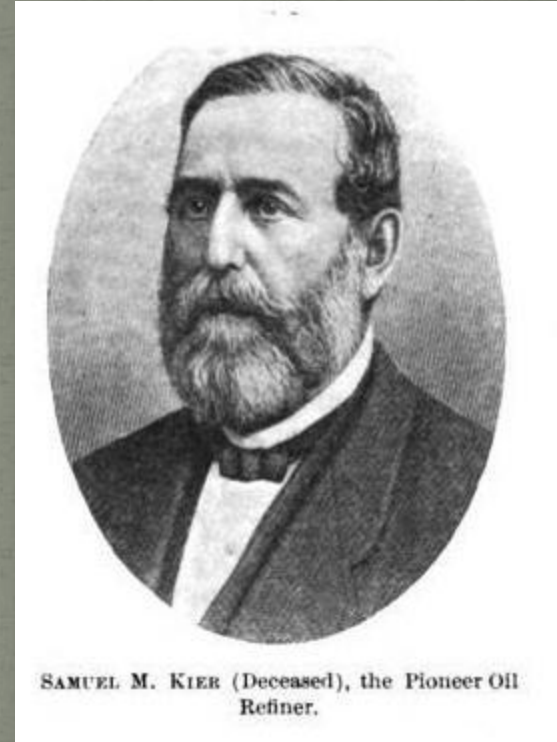


SAMUEL M. KIER (Deceased), the Pioneer Oil Refiner.



Energy Entrepreneurs

- The world was running out of whales
- Samuel Martin Kier set out to refine petroleum in 1853
- The first oil refinery at the corner of 7th & Grant in Downtown Pittsburgh



Energy Entrepreneurs

- Edwin Drake heard about the success of the new refining process
- He set out to drill for oil in Titusville
- Drake struck oil in 1859





PIPER, ROAD, CALIF.

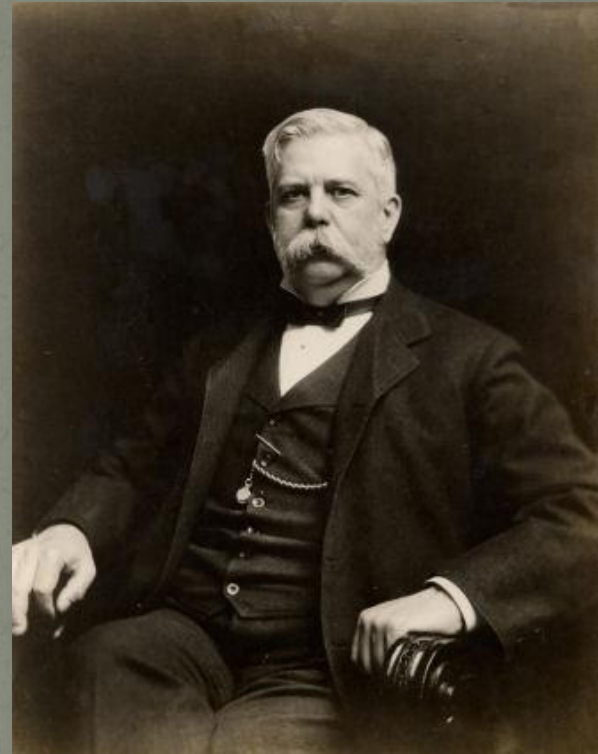




PIPER, ROAD, CALIF.

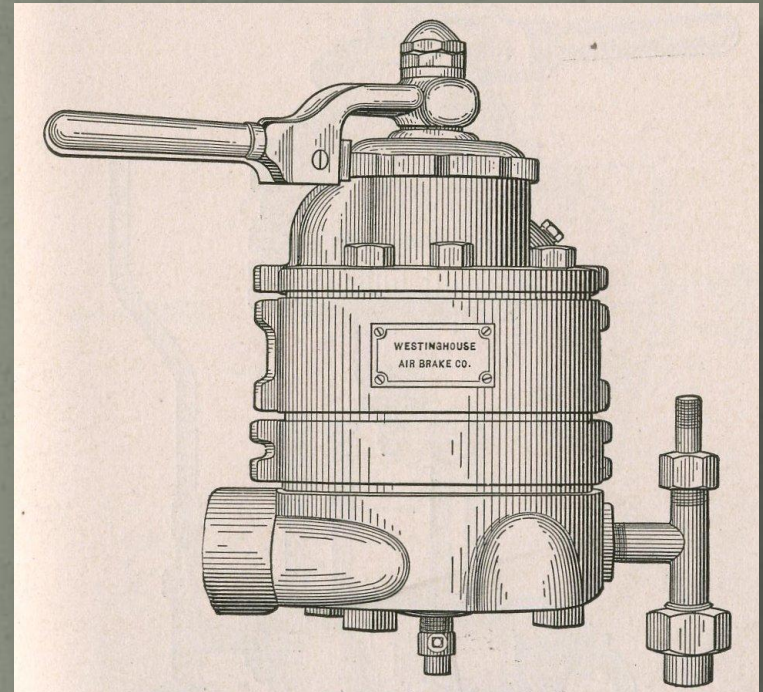
A Great American Inventor

- From the Air Brake to Energy – George Westinghouse profoundly shaped the world we live in.
- During his life Westinghouse receives 361 patents and forms 60 companies.



Air Brake to Energy

- Westinghouse air brake invented in 1869
- Westinghouse Air Brake Company organized to manufacture.
- *Air brake technology still in use today*



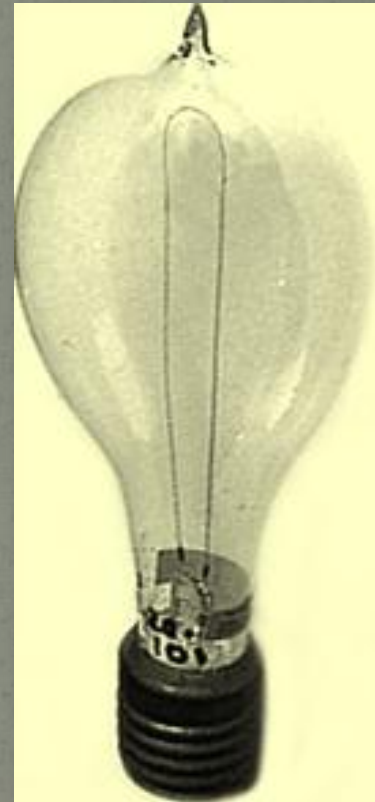
Air Brake to Energy

- Westinghouse drills for gas in his backyard in Homewood
- Westinghouse develops technology to safely transport natural gas
- Equitable Gas Company formed



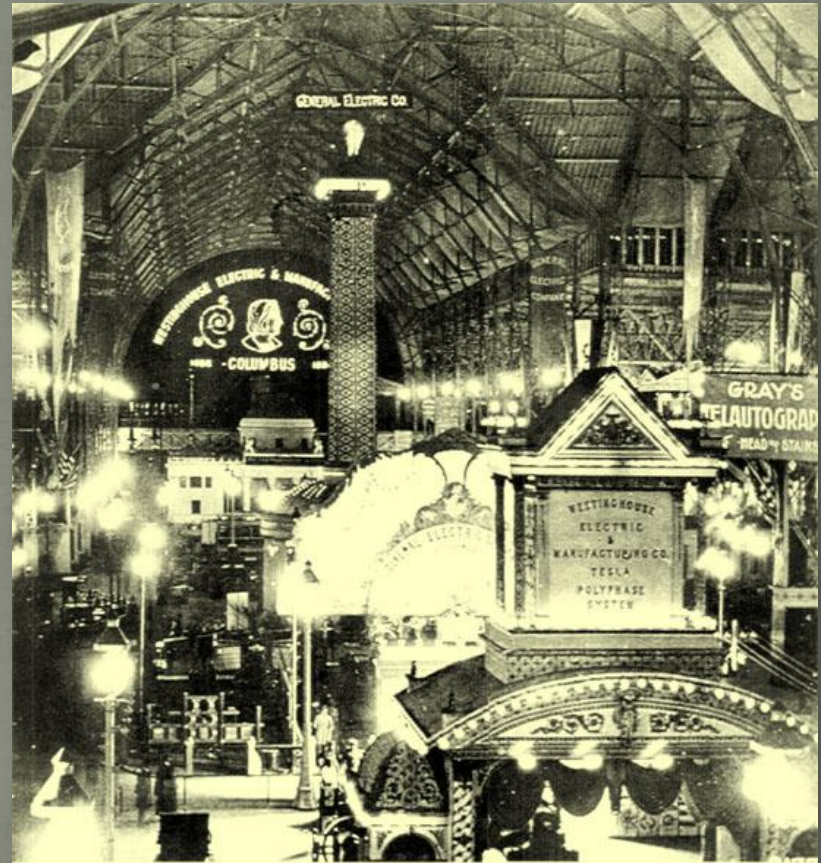
Air Brake to Energy

- Edison perfects the light bulb
- Westinghouse applies what he learned about natural gas to alternating current
- Westinghouse and Tesla develop and commercialize dynamos, transformers and motors

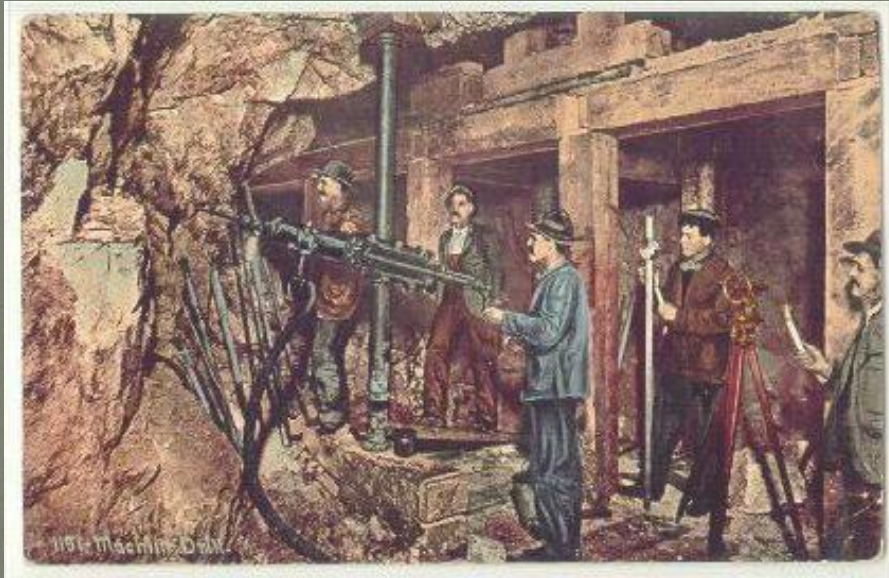


Then the Lights Went On

- Columbian Exposition of 1893
- First all-electric world's fair
- Westinghouse wins the “Current Wars”



Coal: An Essential Industry



Coal: An Essential Industry





Shaping the Modern World

- 1914: Home appliances



Shaping the Modern World

- 1914: Home appliances
- 1920: Radio



Shaping the Modern World

- 1914: Home appliances
- 1920: Radio
- 1937: First industrial atom smasher



Arsenal of Democracy (1940s)

- Pittsburgh's finest hour
- Pittsburgh produces more steel than Germany and Japan combined!



A Postwar Mess

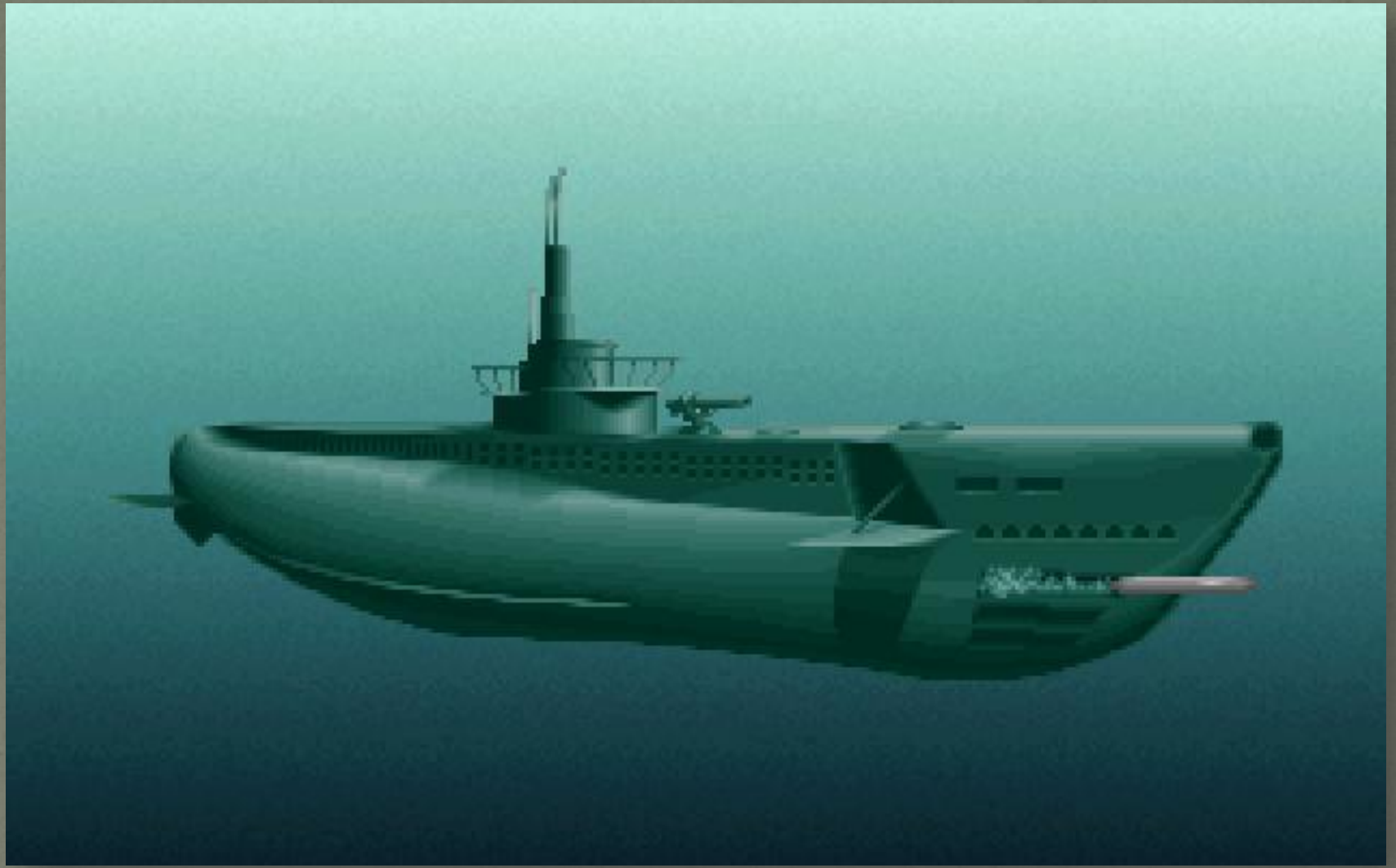
- Pittsburgh had paid a price for industrial success



A Postwar Renaissance

- Pittsburgh had paid a price for industrial success
- Community leaders clean up smoky skies and redevelop the urban core







Washington

Oregon

California

Alaska

Montana

Arizona

New Mexico

North Dakota

South Dakota

Texas

Minnesota

Iowa

Louisiana

Wisconsin

Arkansas

Mississippi

Michigan

Kentucky

Alabama

Ohio

Tennessee

Georgia

New Hampshire

Vermont

Massachusetts

Maine

New York

Virginia

North Carolina

South Carolina

Florida

Rhode Island

Connecticut

New Jersey

Delaware

Maryland

Washington, D.C.

West Virginia

Hawaii

0 200

0 100 mi
0 100 km

0 200 300 mi
0 100 200 km

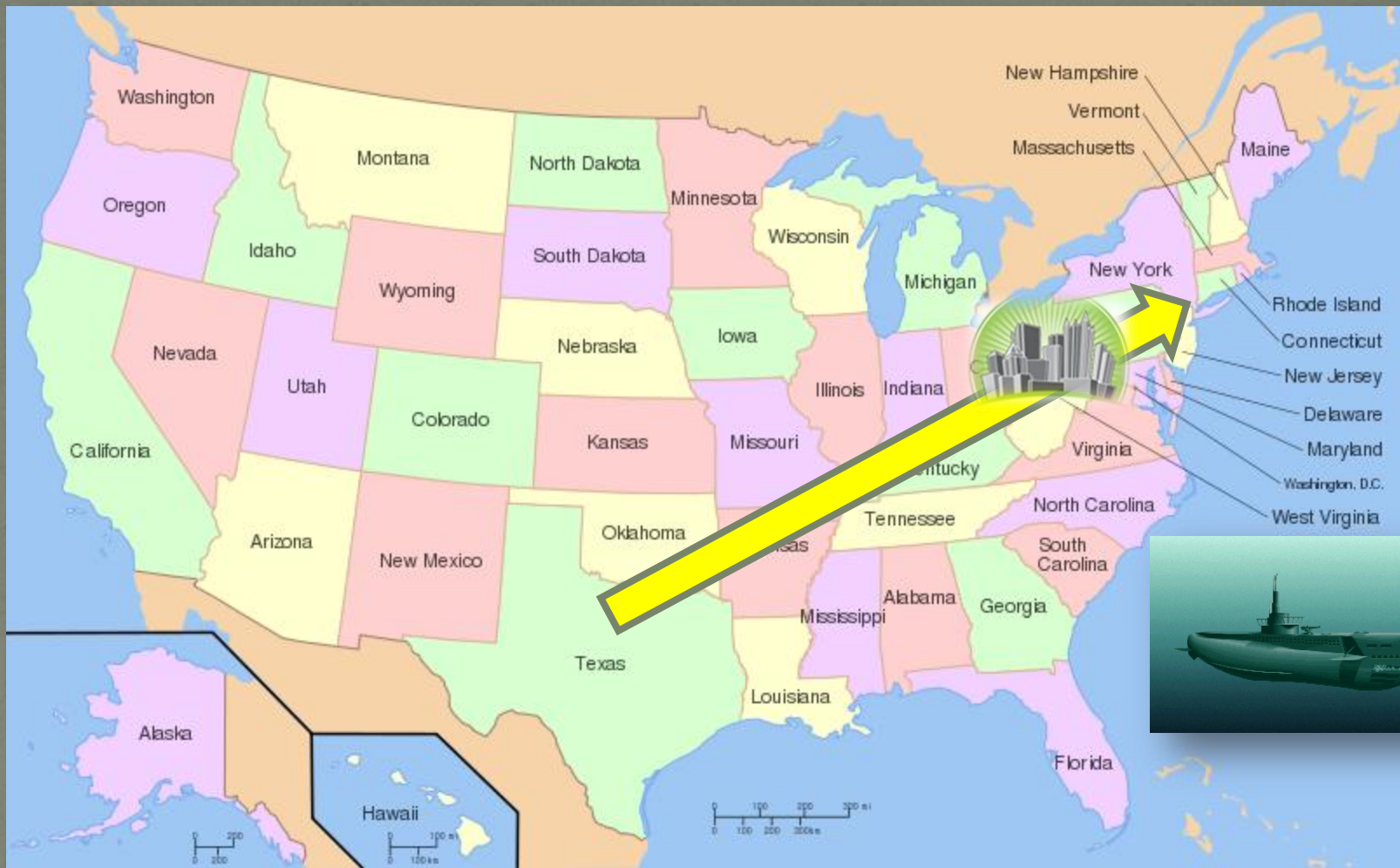






- New Hampshire
- Vermont
- Massachusetts
- Maine
- Rhode Island
- Connecticut
- New Jersey
- Delaware
- Maryland
- Washington, D.C.
- West Virginia





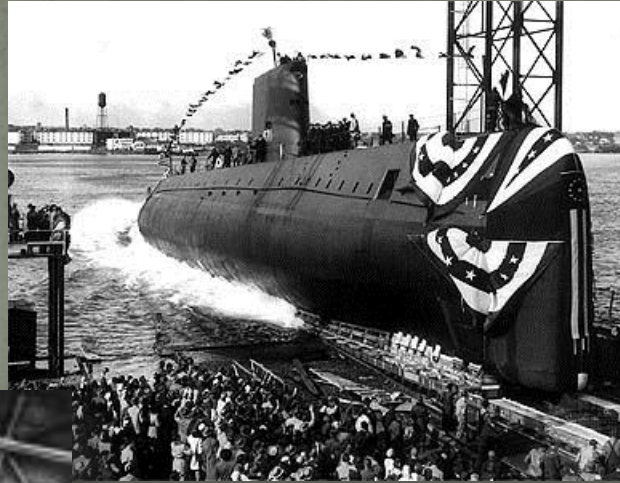
- New Hampshire
- Vermont
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- Maine
- New York
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- Connecticut
- New Jersey
- Delaware
- Maryland
- Washington, D.C.
- West Virginia



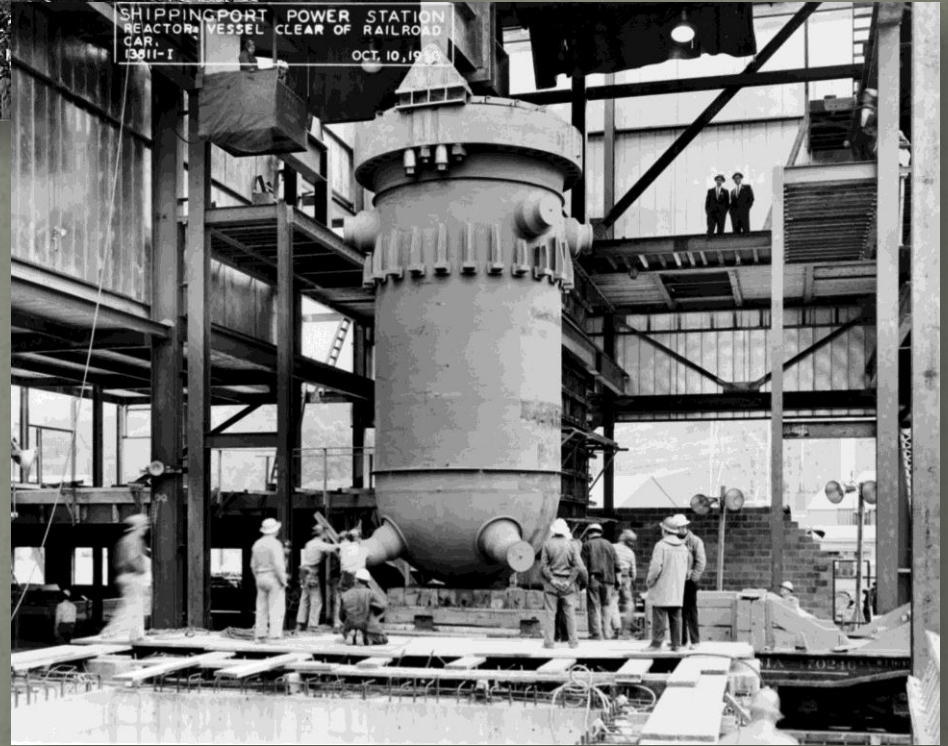
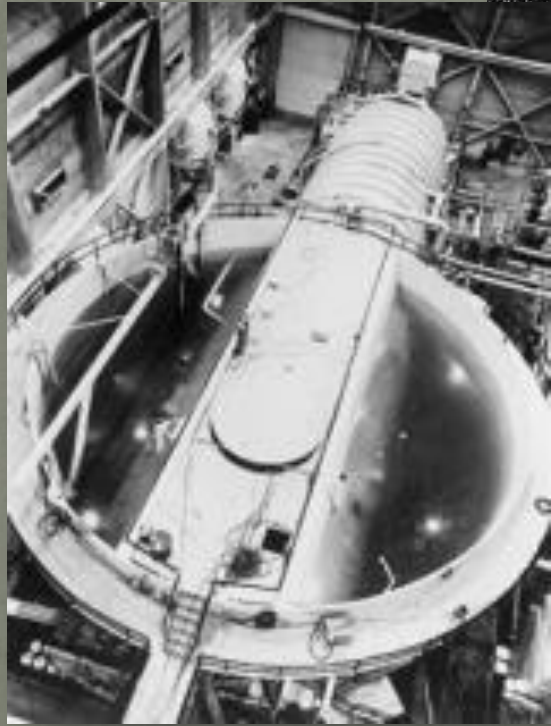


January 21, 1954











Center of American Energy

- 1700+ employers
- 60,000 direct, energy jobs
- \$25 billion in economic activity
- More than \$1 billion annually in energy-related R&D
- Energy-related activity is driving economic expansion and job creation



**YOU ARE
HERE**

**THE NEW CENTER
OF AMERICAN ENERGY.**

From environmental responsibility, green building technology and natural resources to renewables, research & innovation, and energy transmission & distribution, we're answering America's 21st century energy challenges today.

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EP THAT'S ENERGY TO THE
POWER OF PITTSBURGH.

A "Greater" Pittsburgh Region

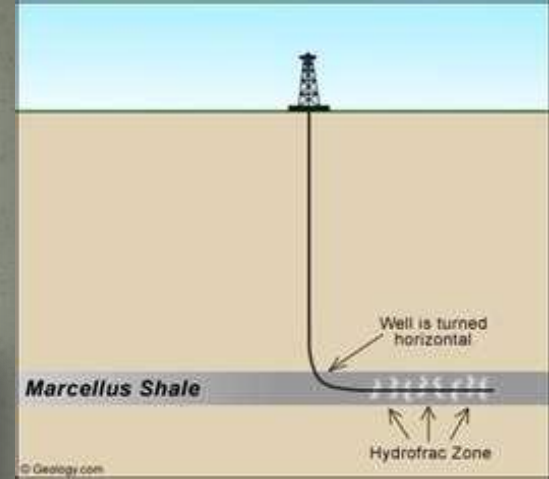


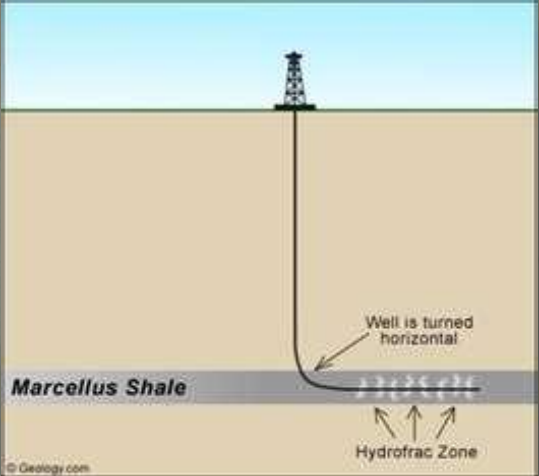
“Father of the Marcellus”

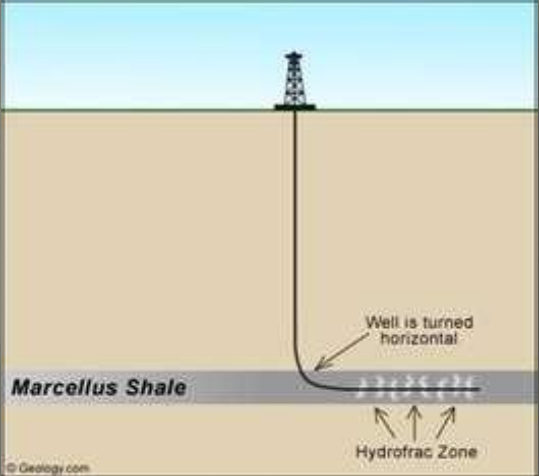


William Zagorski

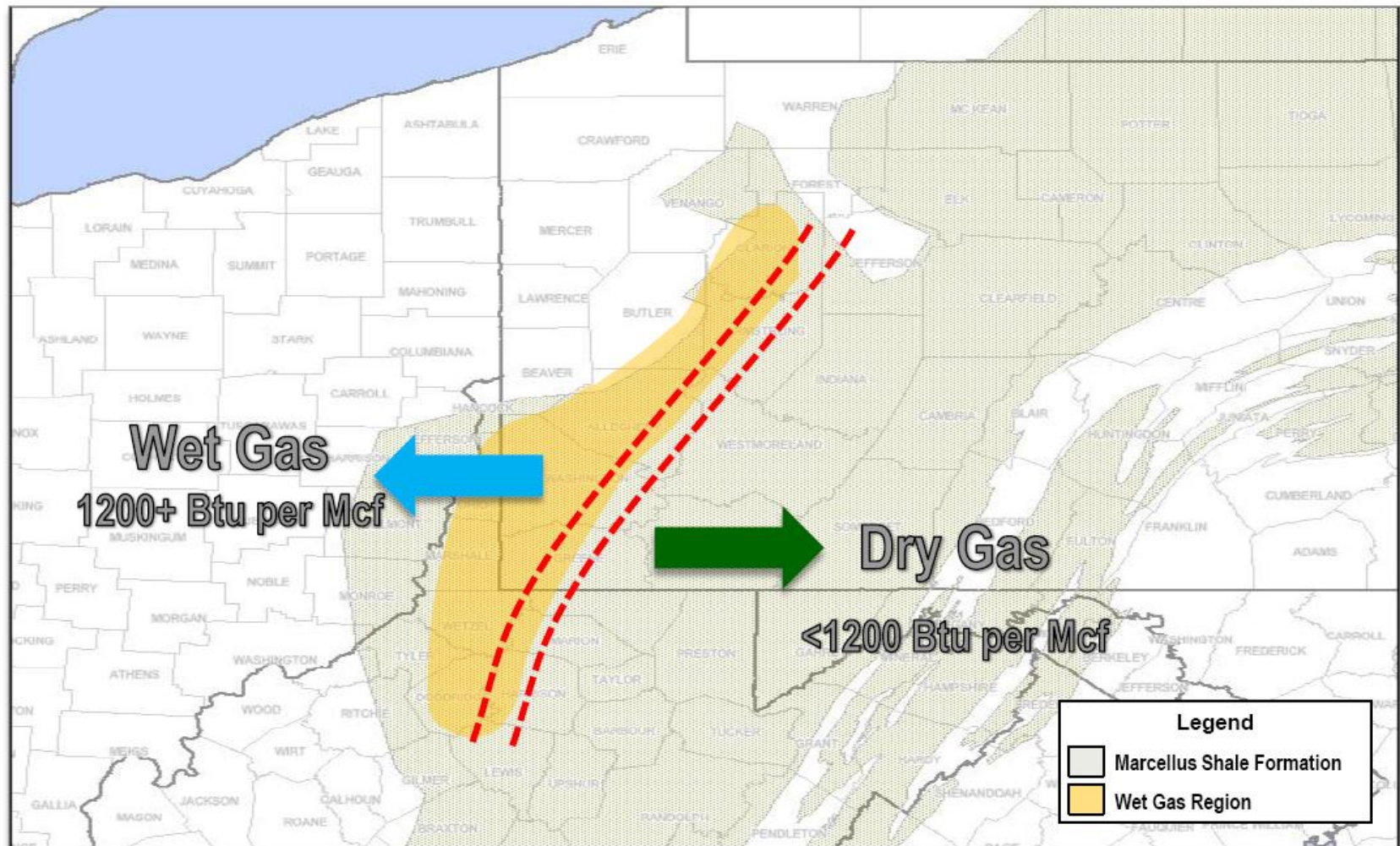








A “Wet” Gas Region



Sources: Equitable Resources, MarkWest, Atlas Energy, Range Resources, and Caiman Energy.



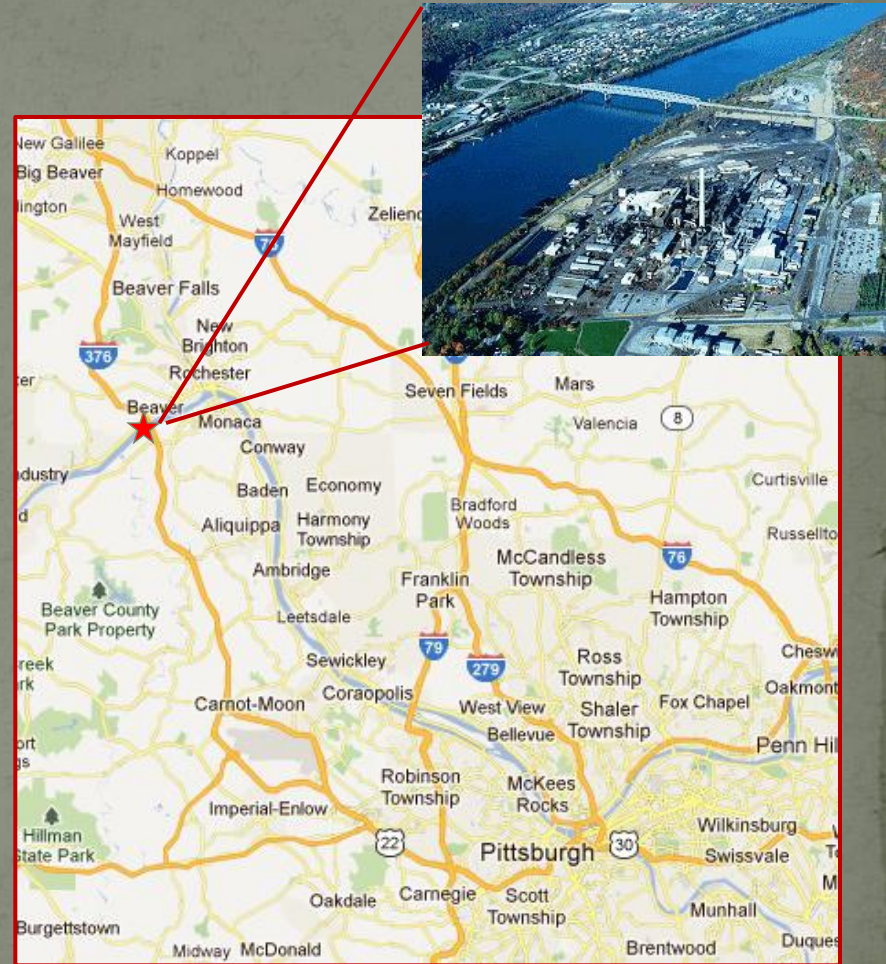
Proposed Petrochemical Project

Status

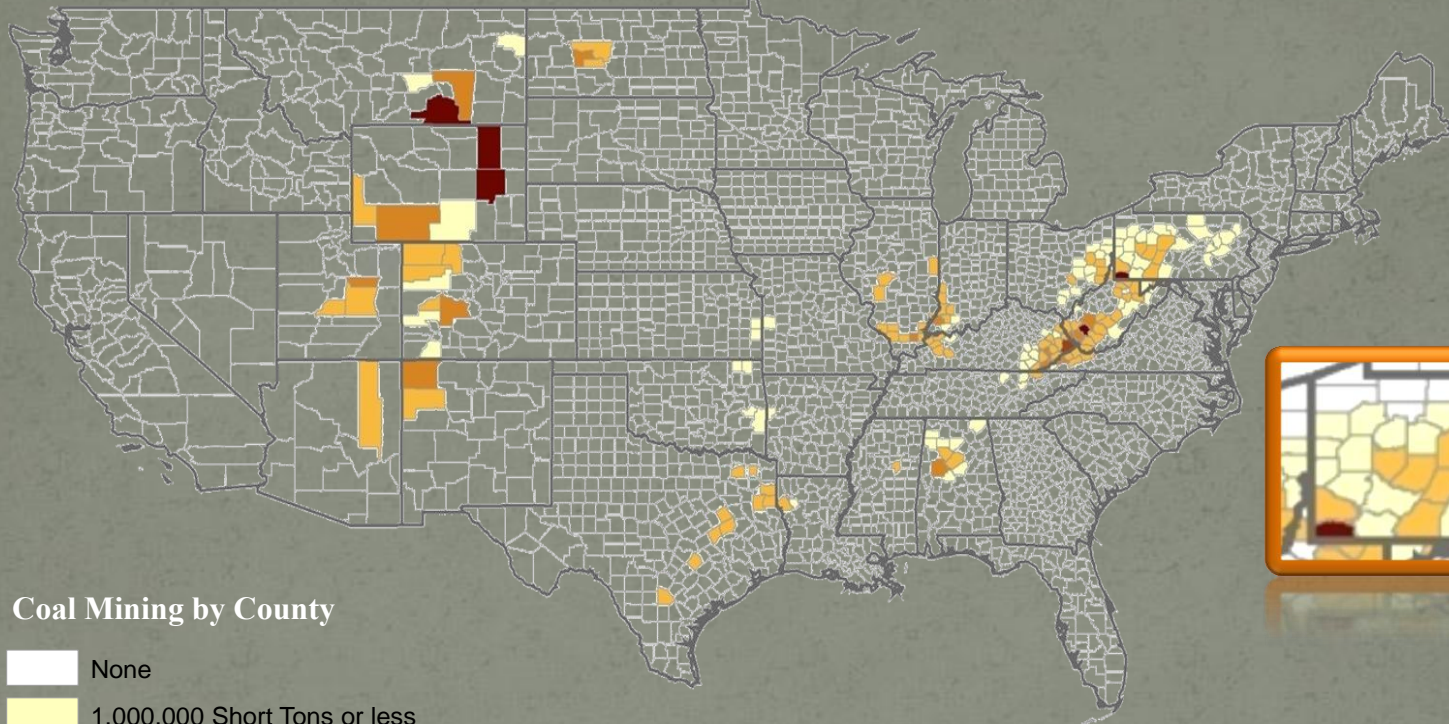
- Land option for Beaver County site
- Further evaluation underway:
 - Environmental analysis
 - Engineering design studies
 - Evaluation of ethane supply
 - Economic viability



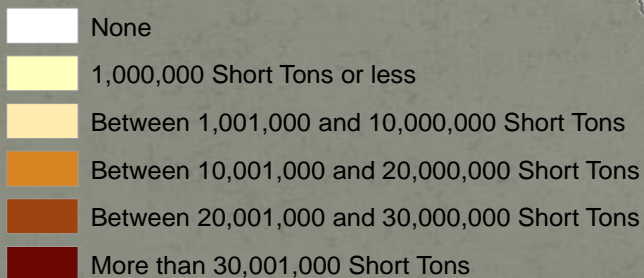
Shell's Singapore Cracker



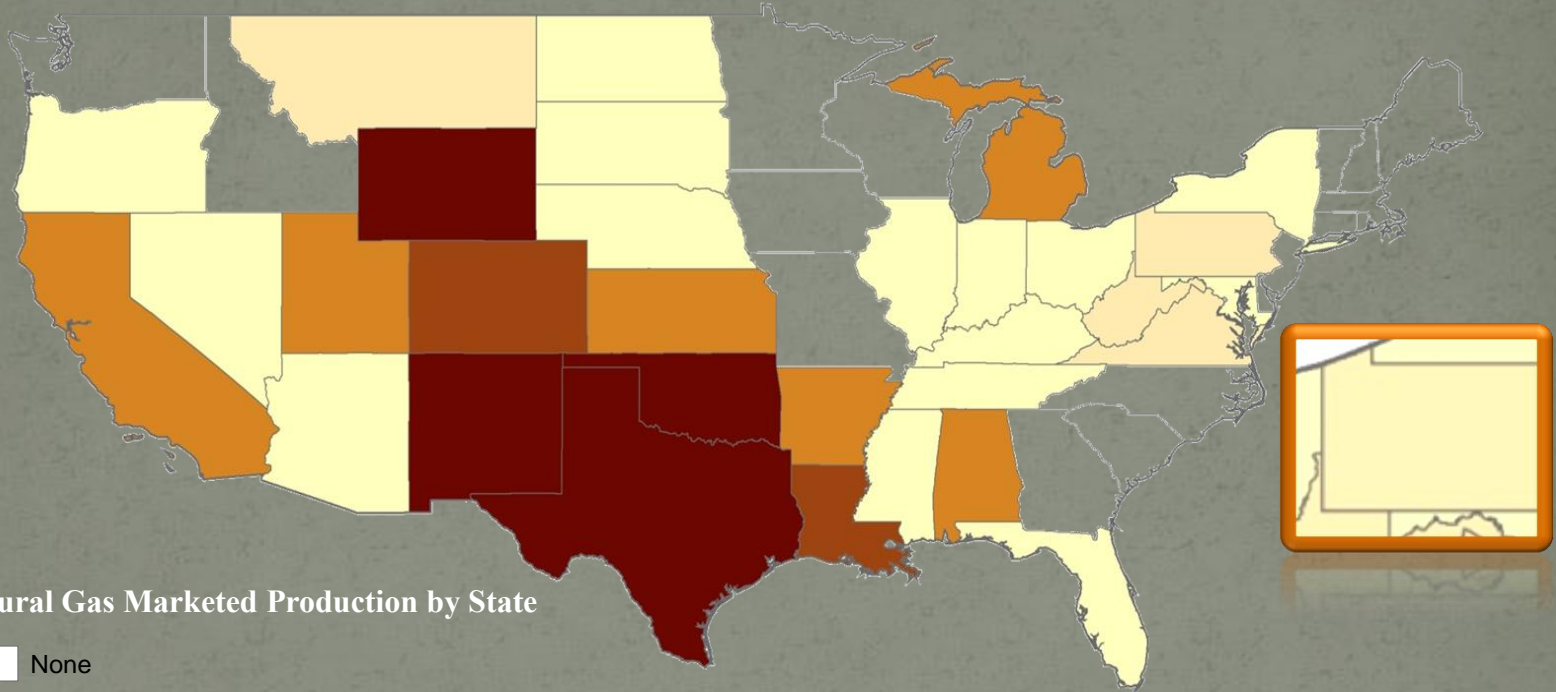
Energy on the Map – Coal



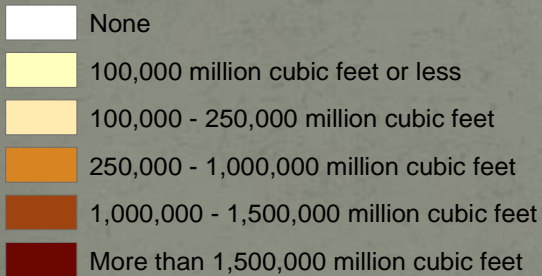
Coal Mining by County



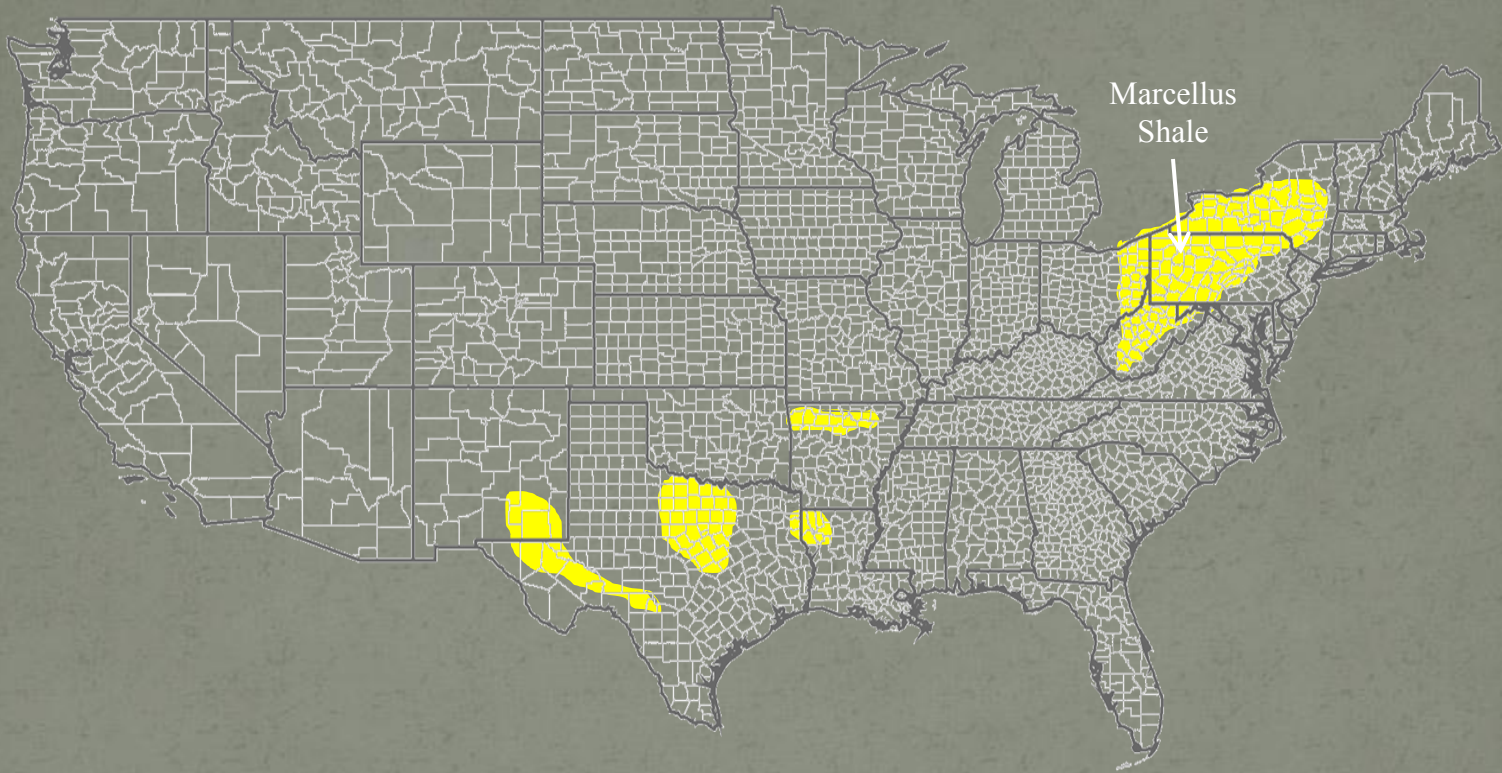
Energy on the Map – Natural Gas



Natural Gas Marketed Production by State



Energy on the Map – Natural Gas

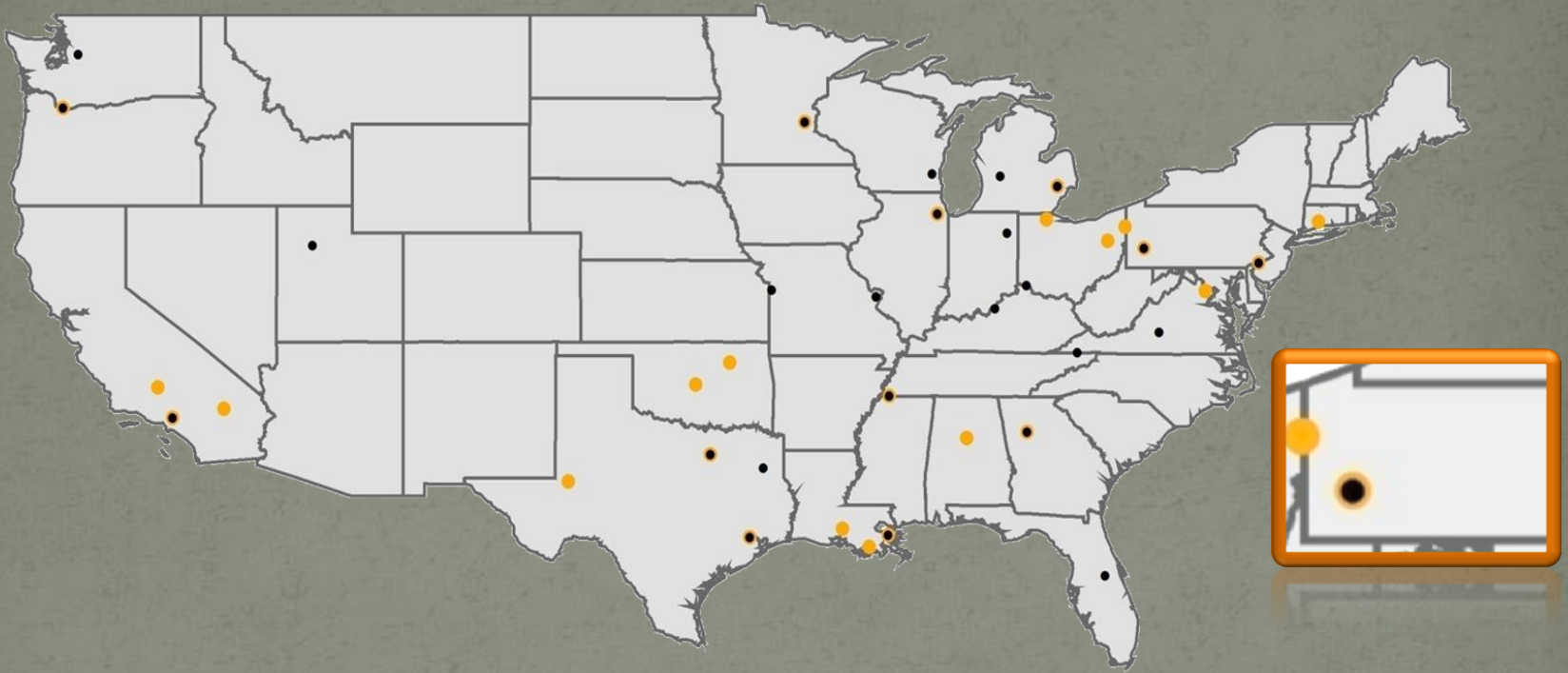


Top 25 in Energy Jobs – Coal



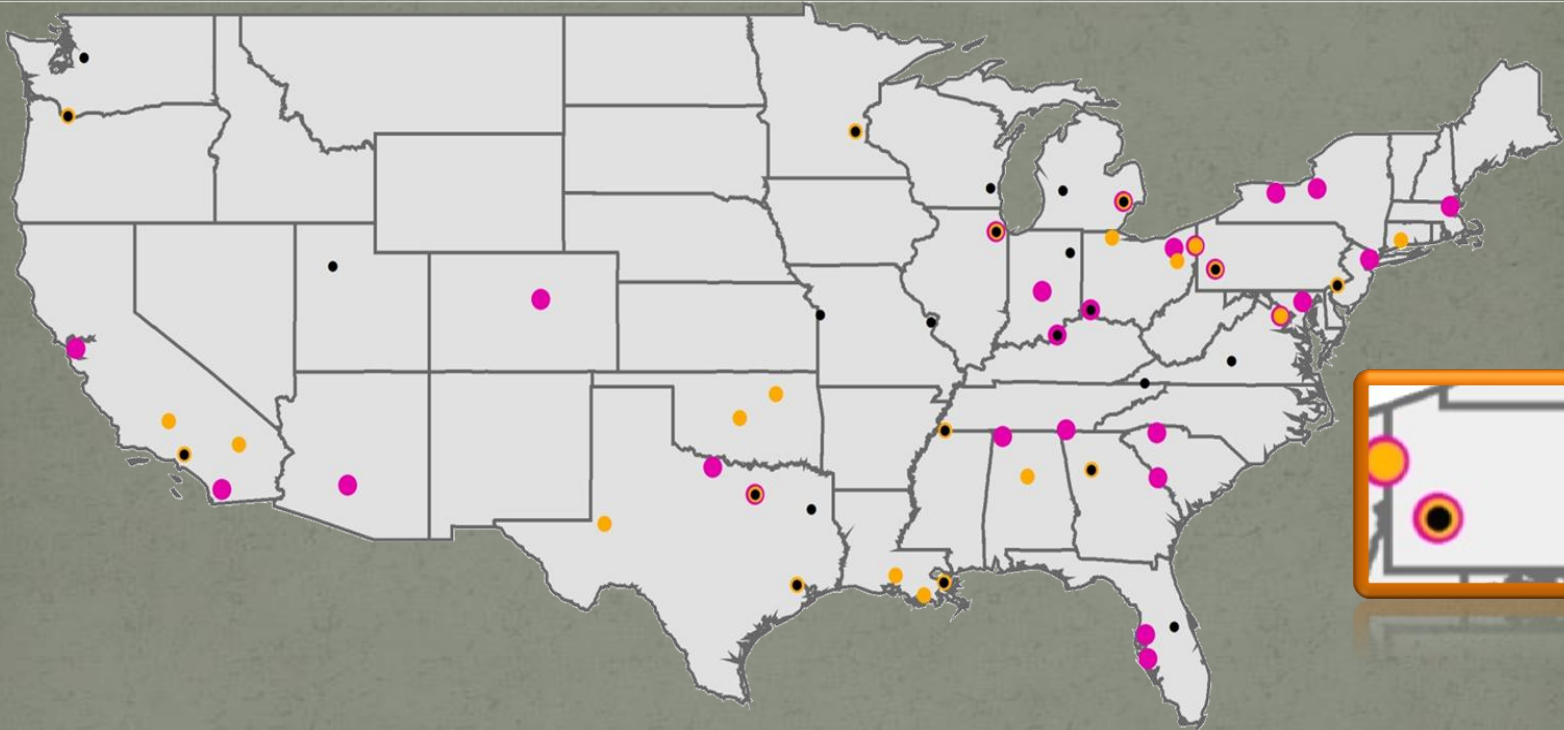
- Coal

Top 25 in Energy Jobs – Natural Gas



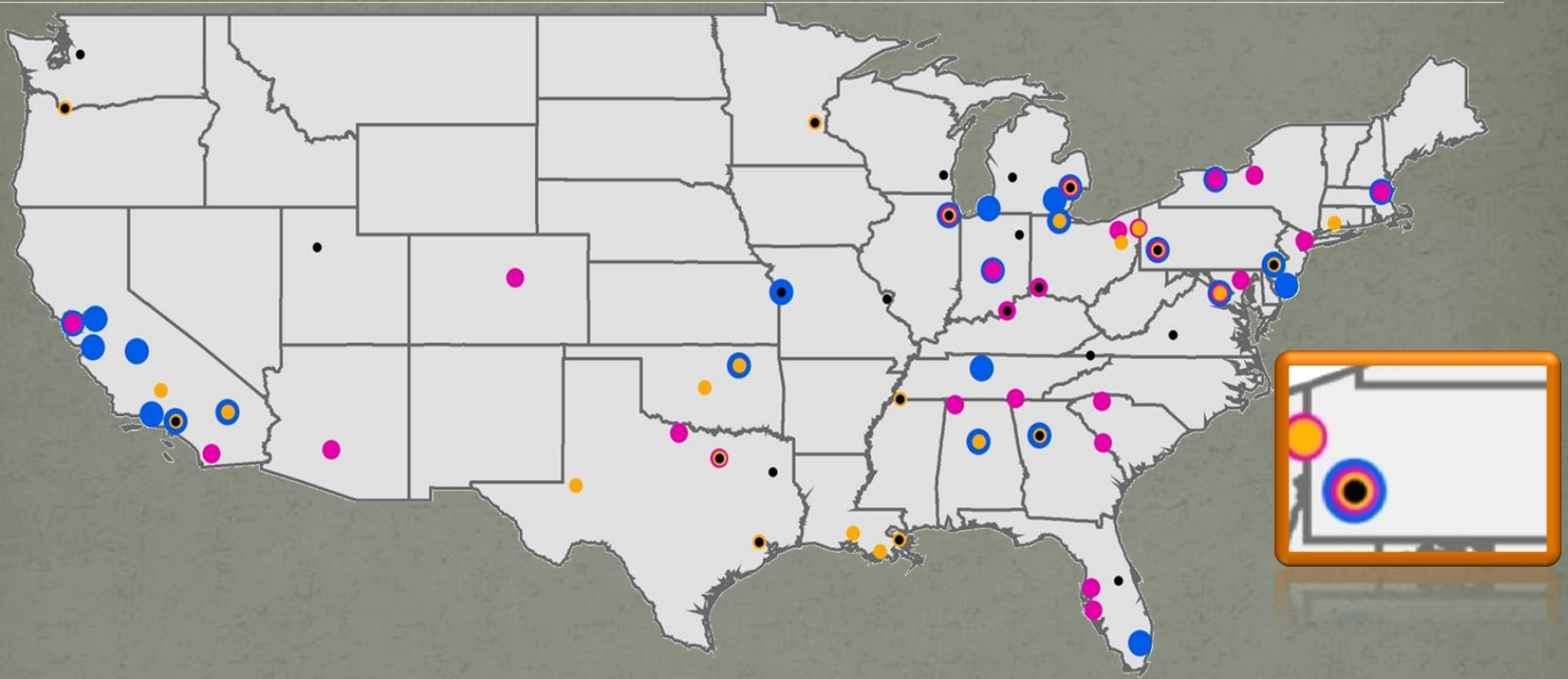
• Coal
• Natural Gas

Top 25 in Energy Jobs – Nuclear



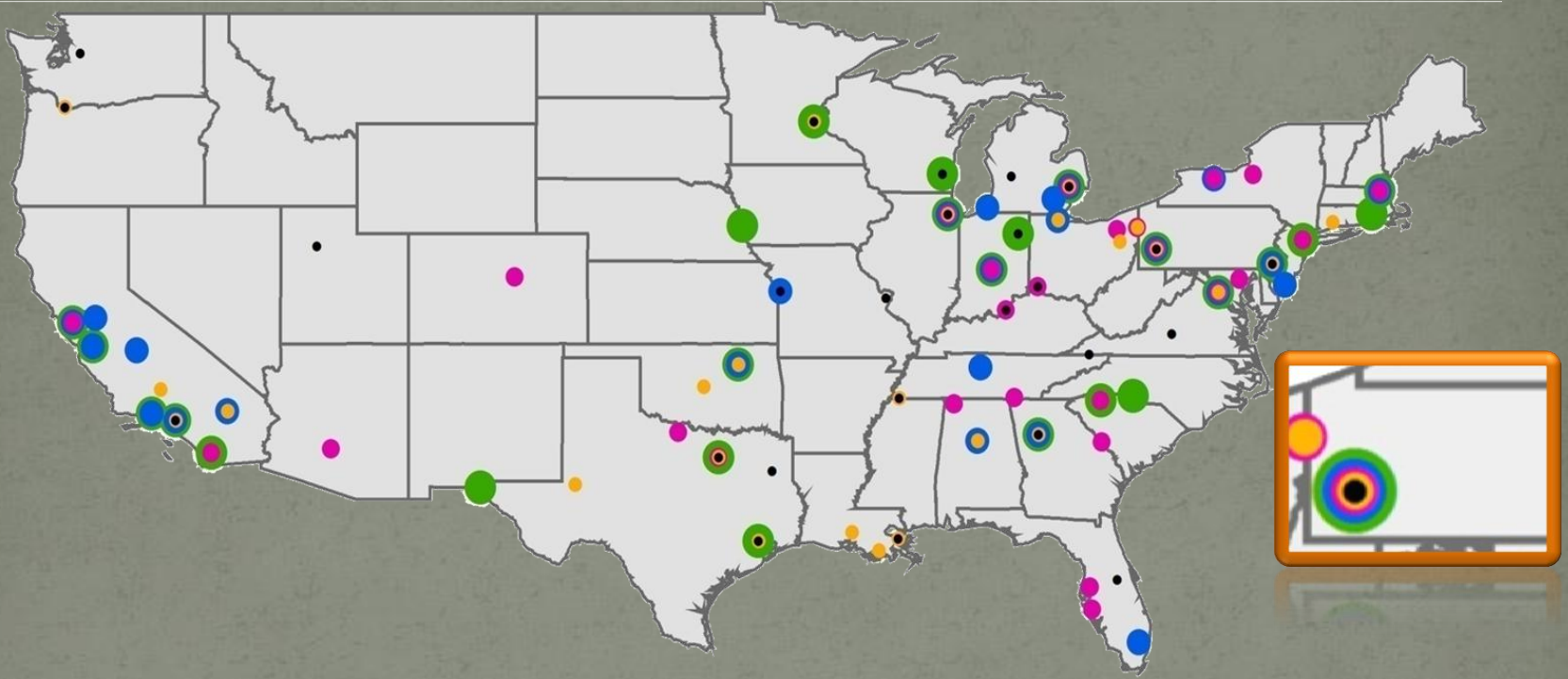
- Coal
- Natural Gas
- Nuclear

Top 25 in Energy Jobs – Solar



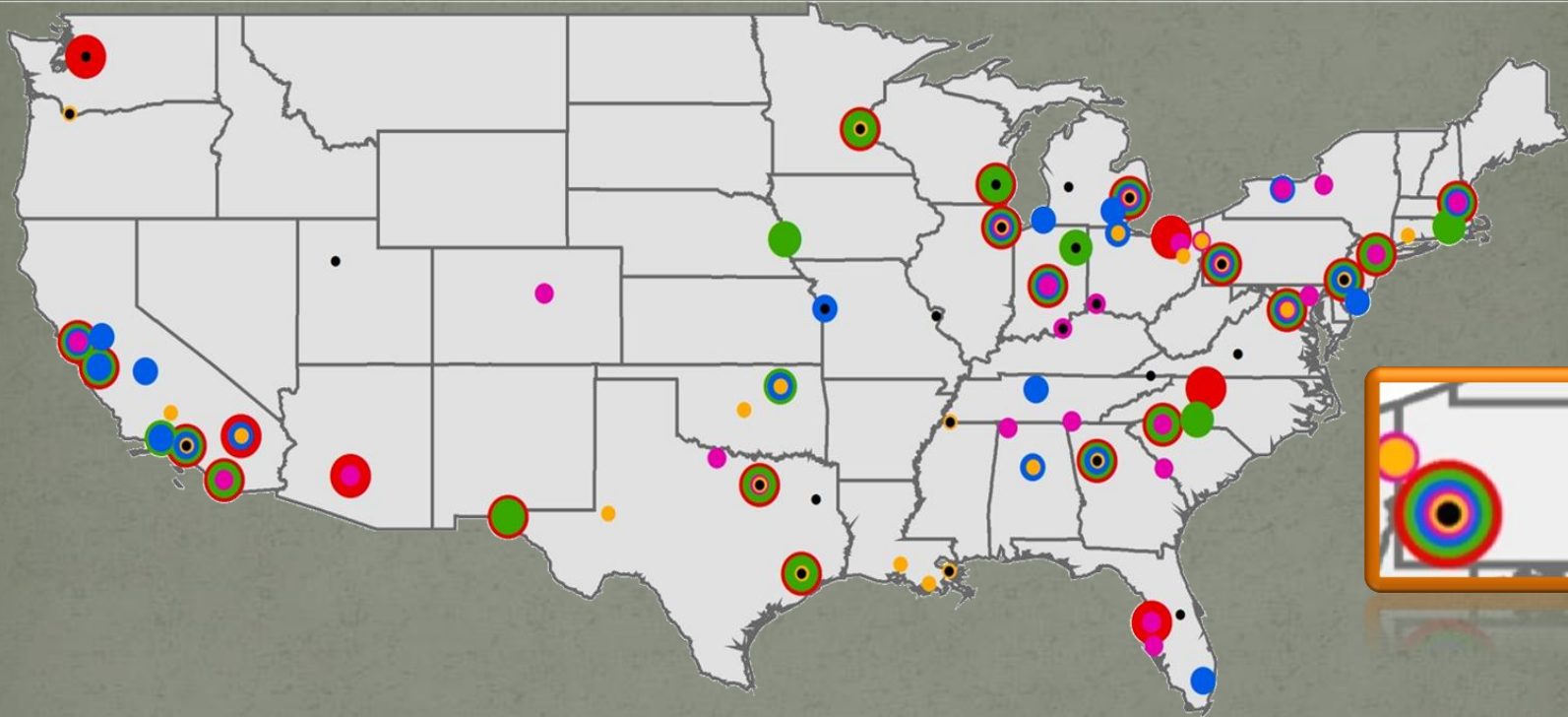
- Coal
- Natural Gas
- Nuclear
- Solar

Top 25 in Energy Jobs – Wind



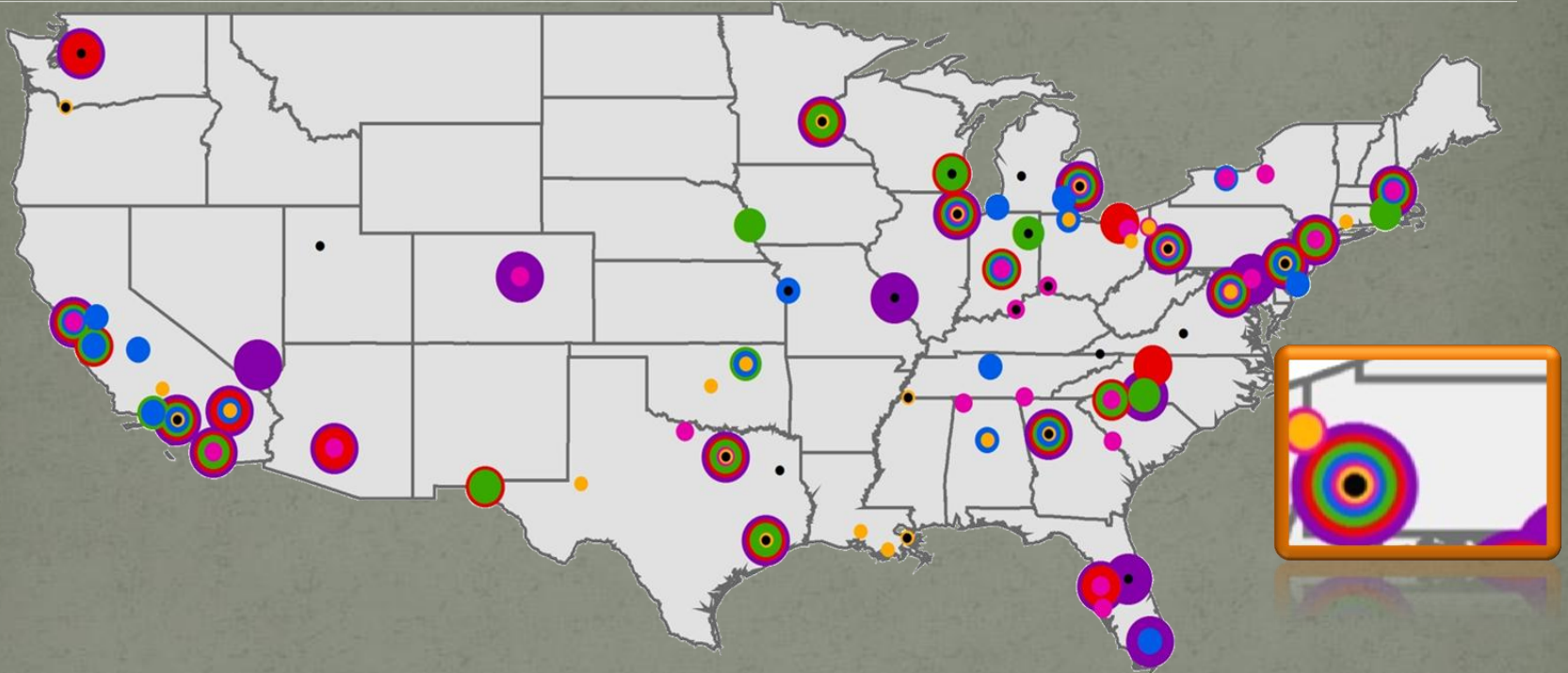
- Coal
- Natural Gas
- Nuclear
- Solar
- Wind

Top 25 in Energy Jobs – Grid



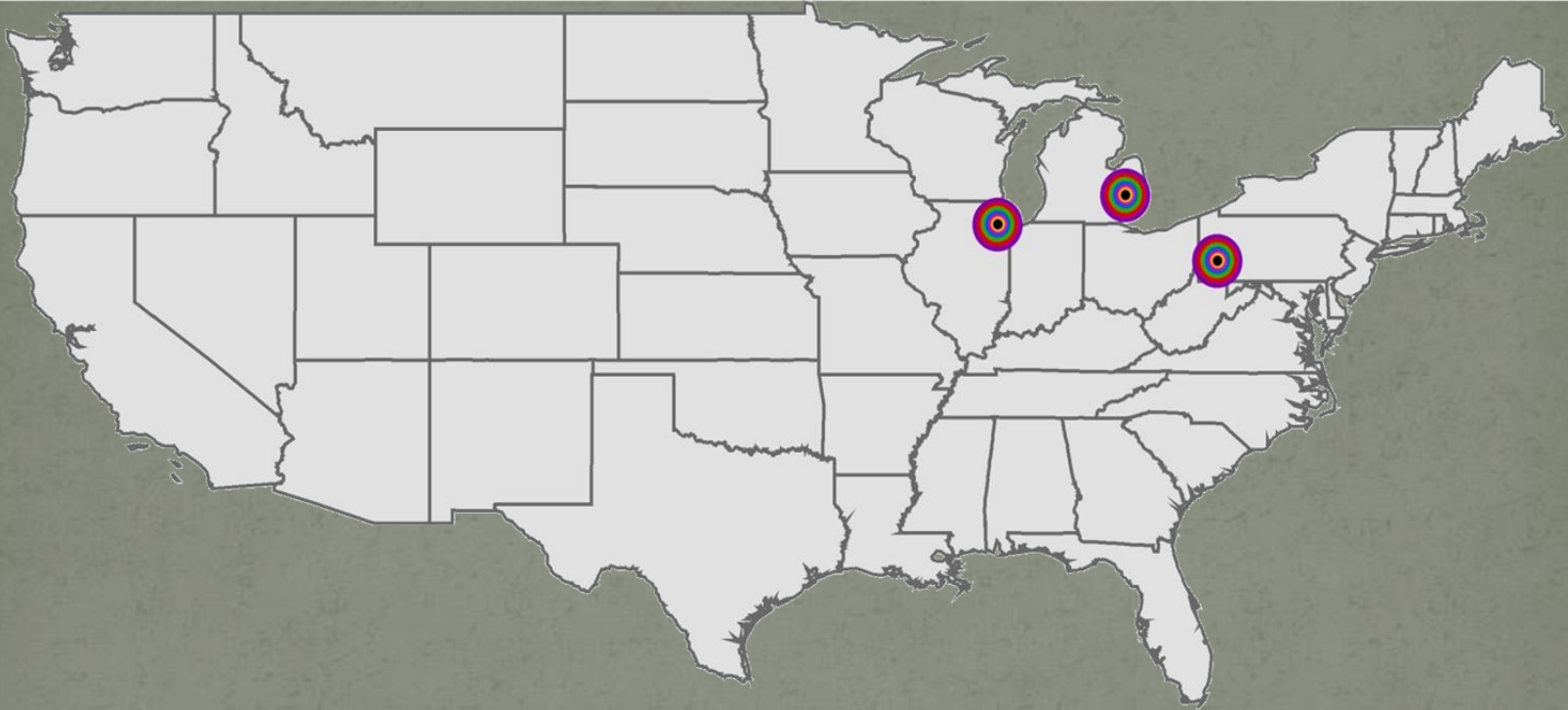
- Coal
- Natural Gas
- Nuclear
- Solar
- Wind
- Transmission & Distribution

Top 25 in Energy Jobs – Green Bldg.



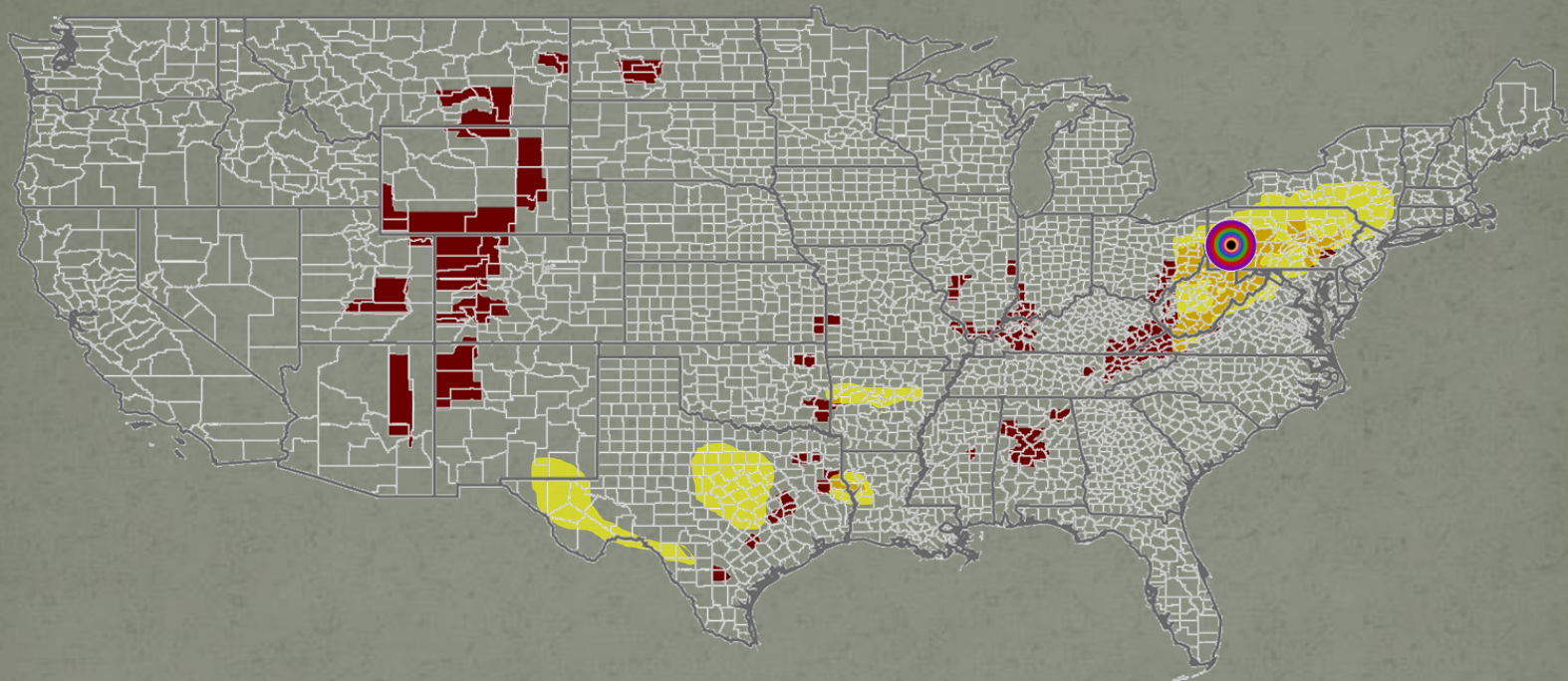
- Coal
- Natural Gas
- Nuclear
- Solar
- Wind
- Transmission & Distribution
- Intelligent Building

Tops Across Seven Sectors



- Coal
- + Natural Gas
- + Nuclear
- + Solar
- + Wind
- + Transmission & Distribution
- + Intelligent Building

Energy Jobs and Natural Resources



- Coal
 - + Natural Gas
 - + Nuclear
 - + Solar
 - + Wind
 - + Transmission & Distribution
 - + Intelligent Building
- Coal extraction
- Shale gas field

Leadership in Seven Sectors



Opportunity

- *Our region can provide the solutions:*
 - Energy Independence
 - Resurgence of manufacturing
 - Addressing the skills challenge



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