JobsOhio ACEC Presentation

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JobsOhio

JobsOhio's History

A privatized economic development organization

2011

Ohio Government Leaders
Authorize Private
Structure for JobsOhio

2013

Ohio Liquor Enterprise
Acquired (for 25 Years)
to Fund JobsOhio

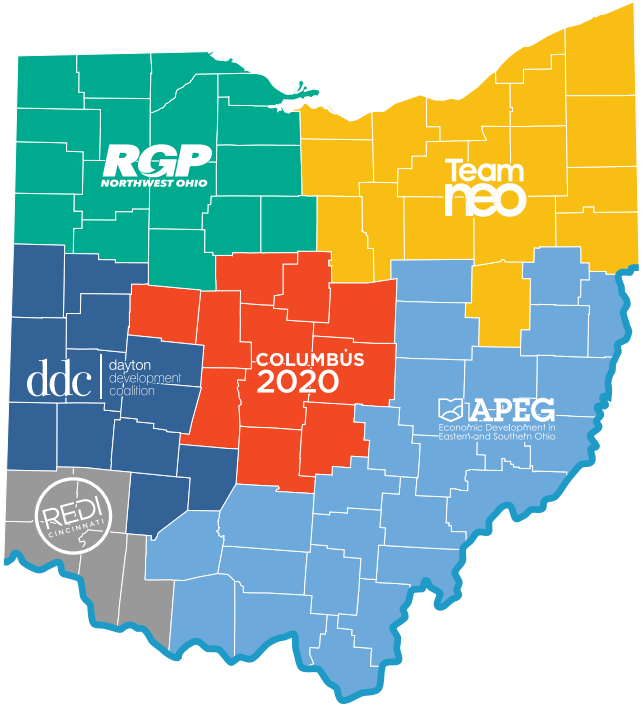
JobsOhio Funding Model

JobsOhio's unique funding provides stability and consistency to economic development in Ohio. This gives us a position over competitor states whose financials are driven by economic performance and budget cycles.

JobsOhio has a unique, dedicated funding stream:

- A funding stream dedicated through 2038 via a franchise on the statewide spiritous liquor business allows for long-term strategic planning.
- JobsOhio utilizes those funds to fulfill a public purpose of creating jobs and improving the economic well-being for Ohio's citizens.
- This provides Ohio a competitive advantage without being subject to fluctuating budgets.

JobsOhio's Partnership Model



Key Stakeholders

- Local and regional economic development teams and communities
- Local, state and federal officials and government entities
- Infrastructure partners including electric, natural gas, fiber, sewer and water

Financial Incentives

JobsOhio offers performance-based incentives to assist companies that are locating or expanding their operations.

JobsOhio Programs

- Economic Development Grant
- Growth Fund
- Research and Development Center Grant
- Revitalization Program
- Workforce Grant

State of Ohio Programs

- Job Creation Tax Credit
- Data Center Tax Abatement
- Loan and Bond Funds
- 629 Road Work Grant

JobsOhio Industries and Cross Sector Strategies

Ohio is one of the few states that has all 5 "Game Changers" identified by McKinsey Global Institute: Shale Energy, Big Data Analytics, Advanced Manufacturing, Infrastructure, and Talent

Cross Sector Strategies:

1. Internet of Things
2. Fintech
3. Health Tech
4. Carbon Fiber
5. Smart Mobility

Sectors of Focus:

1. Advanced Manufacturing
2. Aerospace & Aviation
3. Automotive
4. Healthcare
5. Technology
6. Energy & Chemicals
7. Financial Services
8. Food & Agribusiness
9. Logistics & Distribution

Ohio
Energy &
Chemicals
JobsOhio

Continue Building on Ohio's Global Energy & Chemical Lead Position

Sector Trends

1. **Upstream**
   - Massive investment & growth in natural gas and natural gas liquids extraction
   - Operating efficiency focus in low price environment, M&A activity
2. **Midstream**
   - >$12B in processing investments to process, fractionate, & transport natural gas and natural gas liquids
   - Getting massive quantities of natural gas and natural gas liquids (butane, ethane, propane, and condensate) to market
   - Over 40 pipelines complete or under development in region
3. **Downstream**
   - Power Generation – new, highly efficient natural gas power plants; corporate-led interest in renewables including utility grade wind farms
   - Ethane to Ethylene, HDPE – Utica wet gas leading to significant regional ethane feed-stocks
   - Butane, Propane, Natural Gas – Significant cost advantaged regional butane, propane, and natural gas feed-stocks
   - Chemicals, Adhesives, Coatings, Polymers, Plastics – Build on Ohio's #1 position in polymer output, polyolefin demand, plastics output

Strategic Initiatives

1. **Upstream**
   - Senior-level strategic engagement
   - Connect industry with large end-users
   - Connect industry with appropriate regulatory entities
   - Drilling investment tracking
2. **Midstream**
   - Senior-level strategic engagement
   - Expand and attract demand for feedstock
   - Maximize synergies and pipeline offtake points
   - Proactive site development around new infrastructure
3. **Downstream**
   - Power – facilitate with stakeholders, cross-sector involvement with high-tech industry
   - Ethane – support PTT Global Chemical to construct world scale ethane steam cracker
   - Attract large scale alkylation facility, methanol plants, and NGL storage to Ohio
   - Chemicals – Leverage shale advantage & vibrant chemical market infrastructure, specialty chemicals targeted attraction
   - Identify real estate that can be utilized by new opportunities

Key Achievements

Key Sector Achievements

1. Tracked $74 Billion of private capital investment since 2011 directly related to Shale Development
2. Attracting More Downstream Projects connected to Shale Development
3. Utilized JobsOhio's flexible funding to bring natural gas to constrained areas (Sofidel/Circleville and Ashtabula)
4. Landed major interstate gas pipelines, opening up the availability of cheap gas to more parts of Ohio
5. Secured 4 new gas-fired power plants, now in operation & 1 under construction
6. 10-year low electric prices, world's cheapest natural gas prices, while reducing Ohio's Co2 emissions by 38%
7. Nearing the final decision on PTTGCA/Daelim's ethane cracker

Interfacing with State Agencies

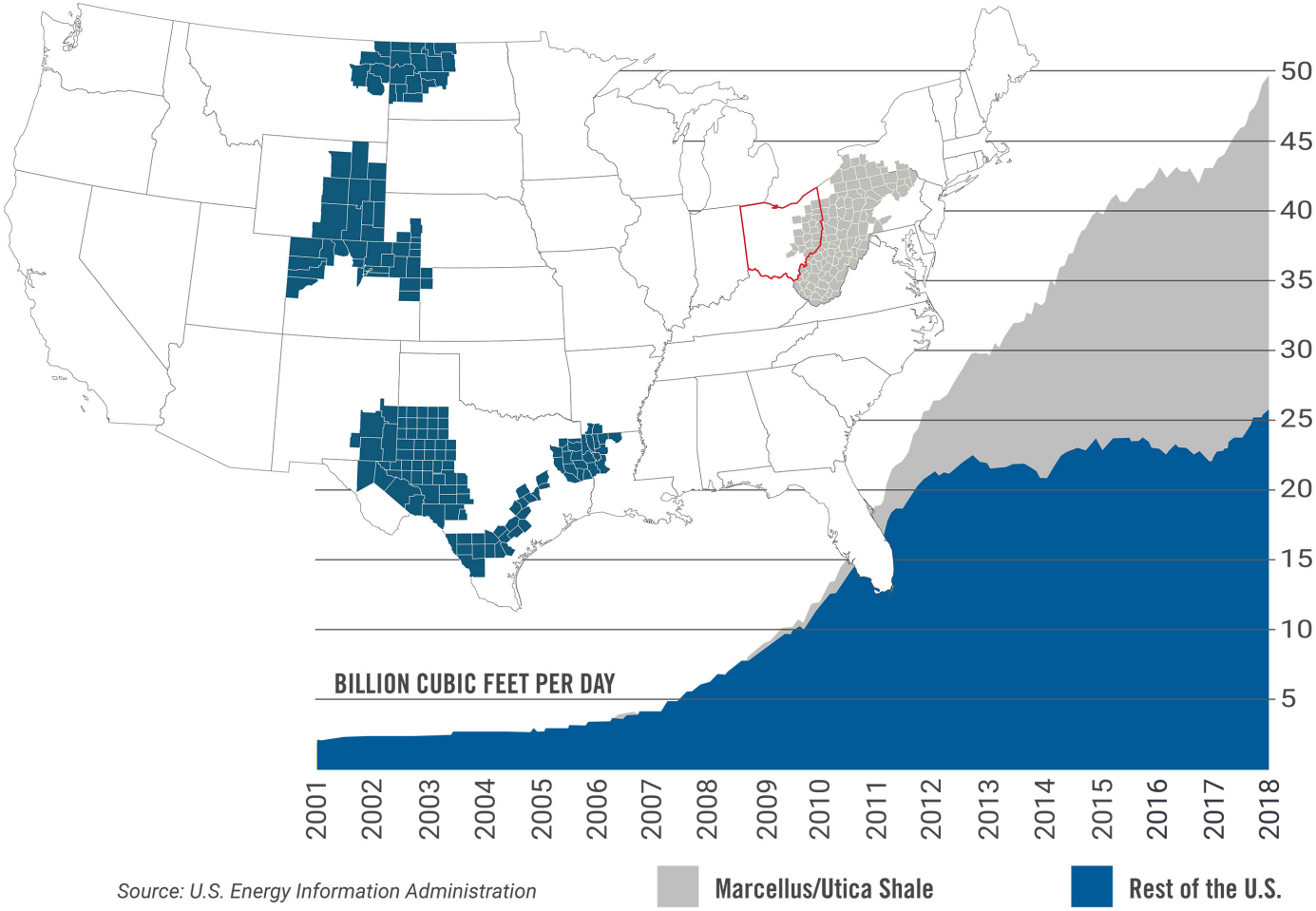
1. OEPA - coordination on nearly every project
2. ODOT - critical due to complex nature of projects/sites
3. ORDC - critical as most chemical projects have a rail component
4. ODNR - critical for upstream & downstream permitting
5. Tax - very helpful due to complex nature of plants
6. PUCO - critical due to utilities being such an important component of projects

Monthly Dry Shale Production

Shale Development:
Foundation in Place,
Long-Term Future

- **Region represents 85% of shale gas growth in U.S. since 2011**
- **Over 3,000 wells permitted**
- **Over 2,500 wells drilled**
- **Over 2,100 wells in production**
- **Significant liquids markets developed**
- **Over $18 billion of midstream investment committed and $74 billion across entire value chain**

Updated as of 4/1/19
Source: Ohio Dept. Of Natural Resources



Source: U.S. Energy Information Administration

Pre-2011 Energy and Chemical Presence in Ohio

Attraction Opportunity in Ohio

Raw Fossil Fuels

Complex Chemicals

Upstream Extractors

Chesapeake Energy

Gas Pipelines

Rockies Express Pipeline LLC

Columbia Pipeline Group

Dominion

Liquids Pipelines

Marathon

Fractionators/Processors

Liquids Storage

Ammonia Plants

PotashCorp

Power Generators

Refineries

Marathon

PBF Energy

bp

Husky Energy

Ethane Steam Crackers

On-purpose Propylene Plants

Alkylation Plants

Methanol Plants

Industrial Chemicals, Coatings and Polymers Companies / JobsOhio Wins

Lubrizol

Sherwin Williams

DuPont

PolyOne

Omnova Solutions

Saint-Gobain

PPG

AmSty

Mitsui Chemicals

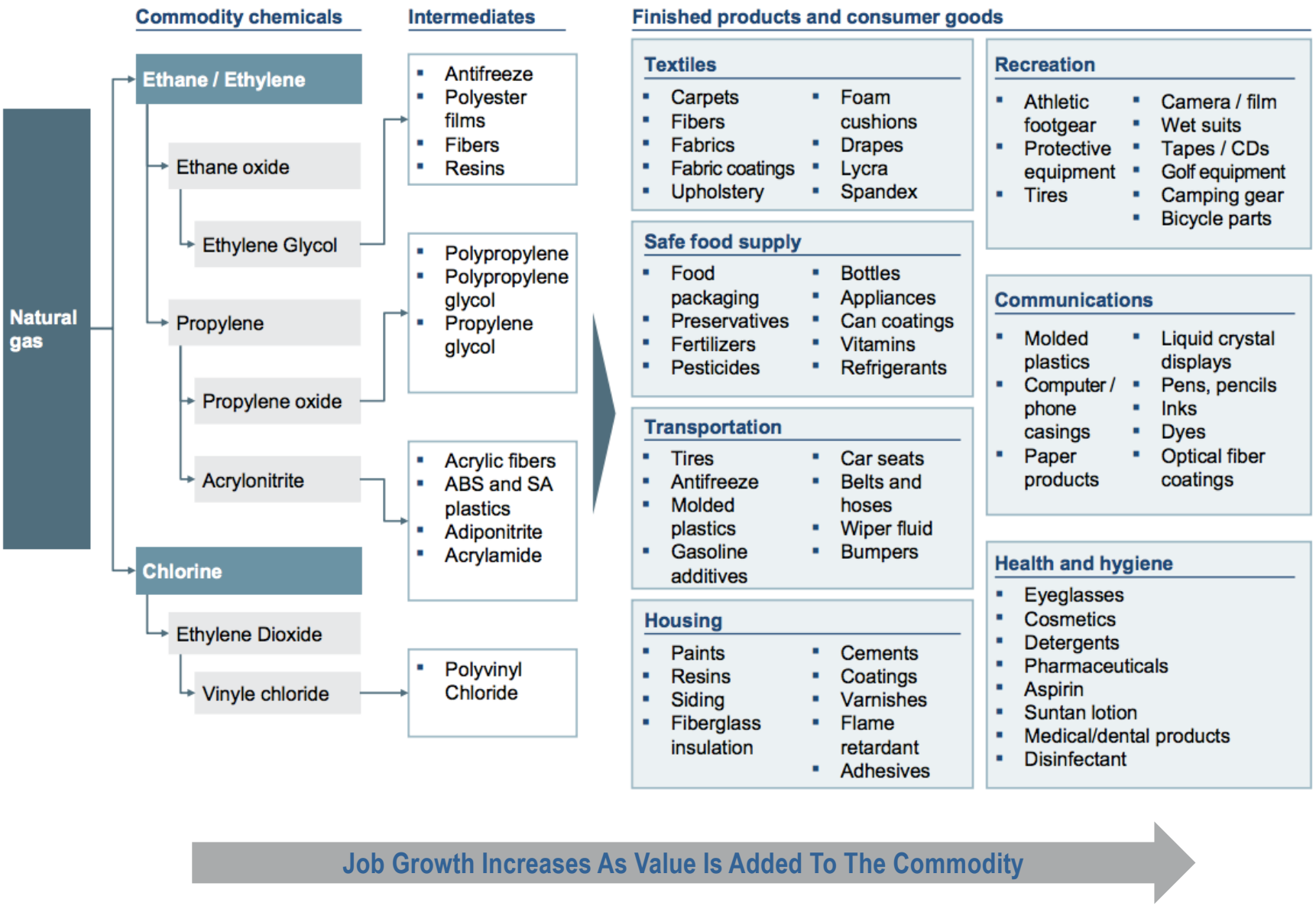
Kraton (Giving Innovators Their Edge)

Solvay

***Not Exhaustive*

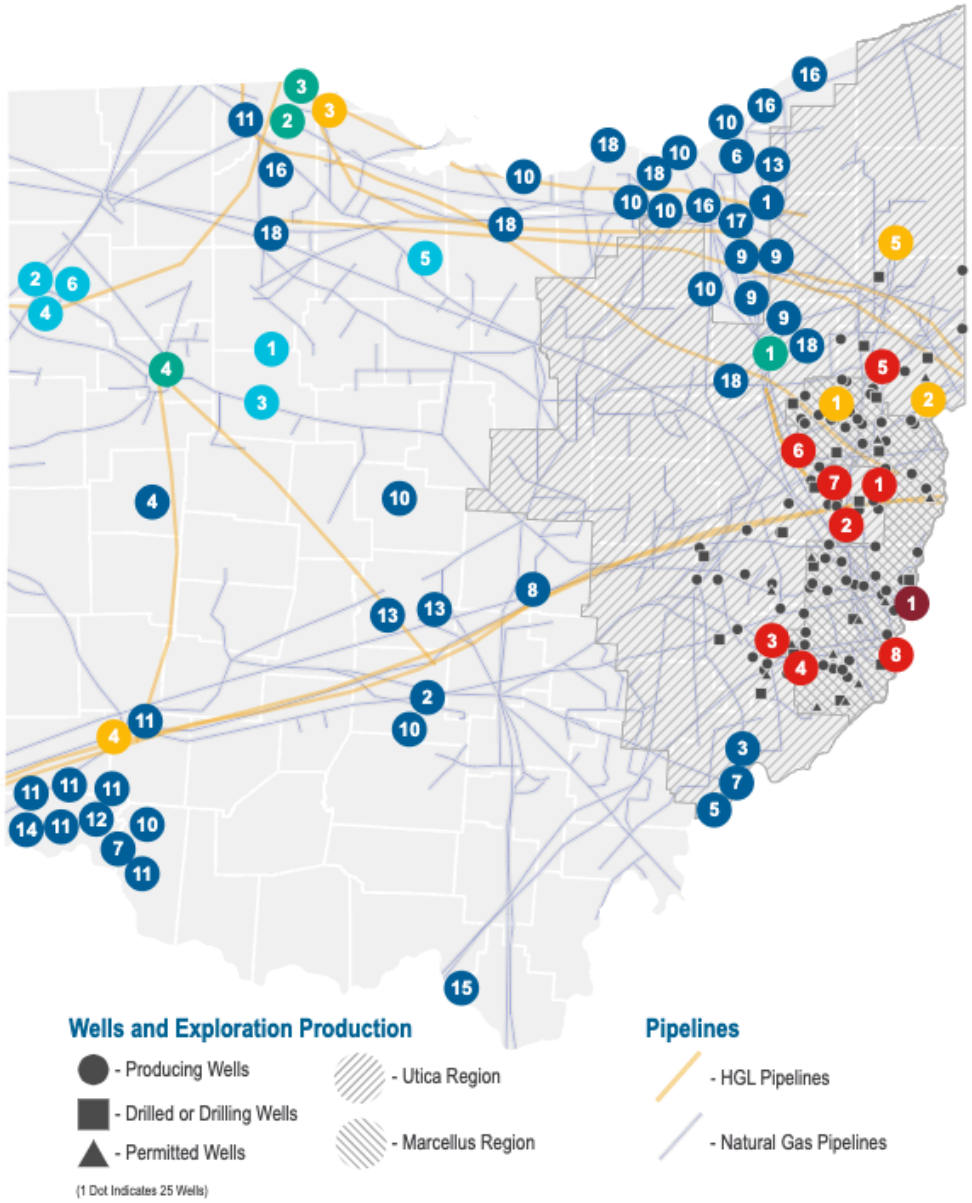
Initiatives Focused on Remaining Gaps in Value Chain

NGL Value Chain & Job Creation Multiplier



Robust Energy/Chemical Environment

Every part of the energy value chain is represented in Ohio. This means companies that choose Ohio gain the advantages that come with having an accessible, affordable and sustainable source of natural gas and NGLs.



Fractionators and Processors
1 - MarkWest Hopedale
2 - MarkWest Cadiz
3 - MarkWest Seneca
4 - Berne Cryogenic Processing Plant
5 - Momentum UEO Kensington
6 - Momentum UEO Leesville
7 - Momentum UEO Scio
8 - BRM Natrium

Chemical Companies
1 - Saint Gobain
2 - DuPont
3 - AmSty
4 - Mitsui Chemicals
5 - Kraton Polymers
6 - Omnova
7 - Solvay
8 - Covestro
9 - LyondellBasell
10 - PPG
11 - Sun Chemical
12 - Emery Oleochemicals
13 - Sherwin Williams
14 - St. Bernard Soap Co.
15 - Altivia
16 - Lubrizol
17 - Gojo Industries
18 - Polyone

Refineries
1 - Marathon
2 - PBF Energy
3 - BP Energy
4 - Husky Energy

Gas Powerplants
1 - Advanced Power Carrollton
2 - Advanced Power Wellsville
3 - Oregon Clean Energy
4 - NTE Energy
5 - Lordstown Energy Center

Ethane Steam Cracker
1 - PTT Global (Planned)

Renewable Energy
1 - EDP
2 - Amazon Web Services Central 1
3 - Amazon Web Services Central 2
4 - Iberdrola Renewables
5 - Seneca Wind
6 - Starwood Energy

Note: This is not an exhaustive list

Supporting Sustainability

Wind Projects

Pending Projects

1. **Timber Road IV** 37 Turbines, 125.1 MW
2. **Republic** 50 Turbines, 200 MW
3. **Seneca** 77 Turbines, 200 MW
4. **Icebreaker** 6 Turbines, 20.7 MW

Approved Projects

1. **Scioto Ridge** 105 Turbines, 231 MW
2. **Buckeye I** 54 Turbines, 135 MW
3. **Buckeye II** 56 Turbines, 140 MW
4. **Black Fork** 91 Turbines, 200 MW
5. **Greenwich** 25 Turbines, 60 MW

Projects Under Construction

1. **Hardin** 200 Turbines, 300 MW

Operational Projects

1. **Timber Road I** 18 Turbines, 37.8 MW
2. **Timber Road II** 55 Turbines, 99 MW
3. **Timber Road III** 30 Turbines, 63 MW
4. **Northwest Ohio** 42 Turbines, 100 MW
5. **Blue Creek** 152 Turbines, 304 MW
6. **Hog Creek I and II** 30 Turbines, 66 MW

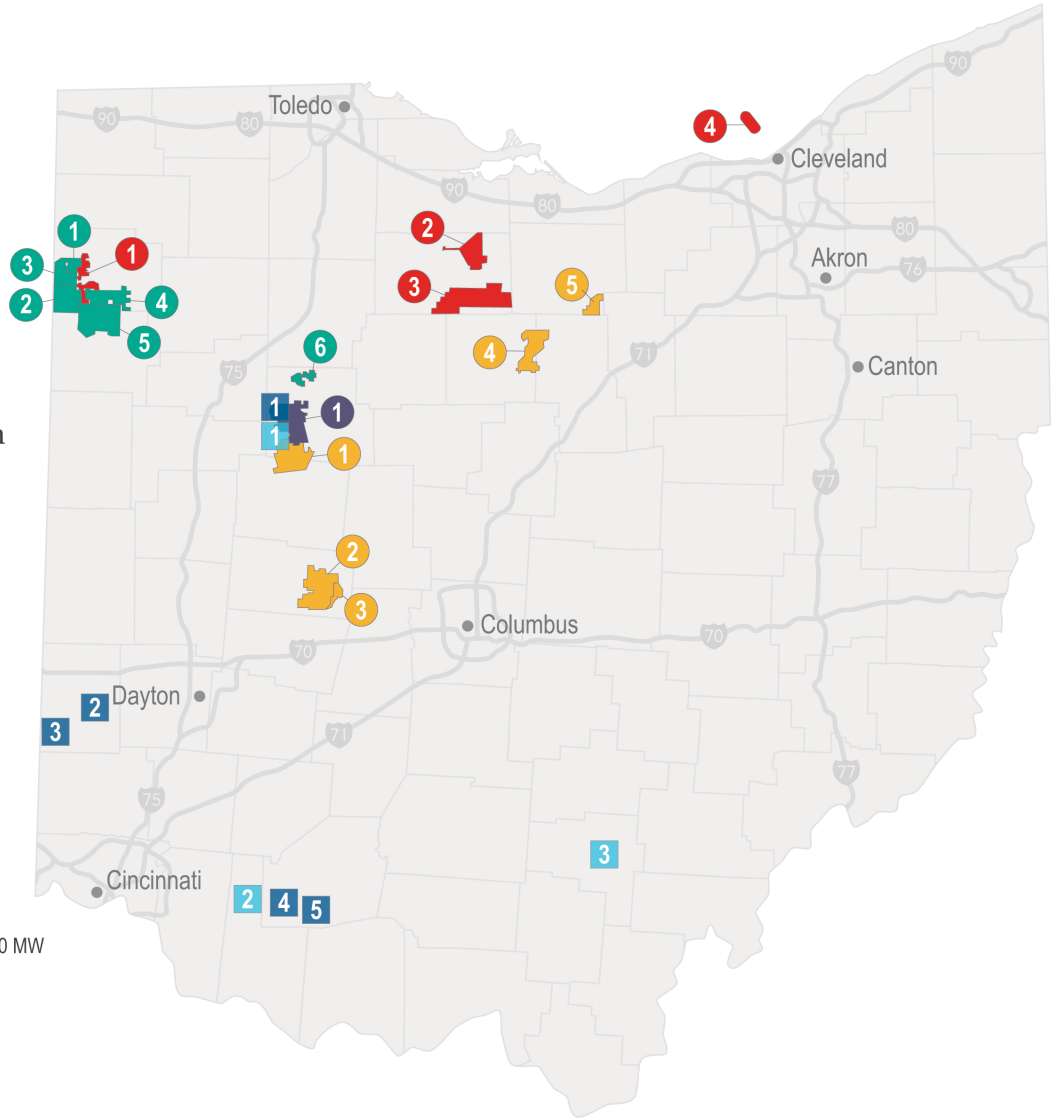
Solar Projects

Pending Projects

1. **Hardin Solar Energy Facility II** 170 MW
2. **Alamo Solar Facility** 69.9 MW
3. **Angelina Solar Facility** 80 MW
4. **Hecate Energy Highland Solar Farm** 300 MW
5. **Willowbrook Solar I** 150 MW

Approved Projects

1. **Hardin Solar Energy Facility** 150 MW
2. **Hillcrest Solar Farm** 125 MW
3. **Vinton Solar Energy Facility** 125 MW



Investments in renewable energy make Ohio a flexible energy provider. In addition to new utility-scale renewable projects, Ohio businesses are increasingly managing their energy costs and supply through onsite renewable generation and battery storage.

Ethane Cracker Case Study

ptt GLOBAL CHEMICAL

DAELIM

JobsOhio

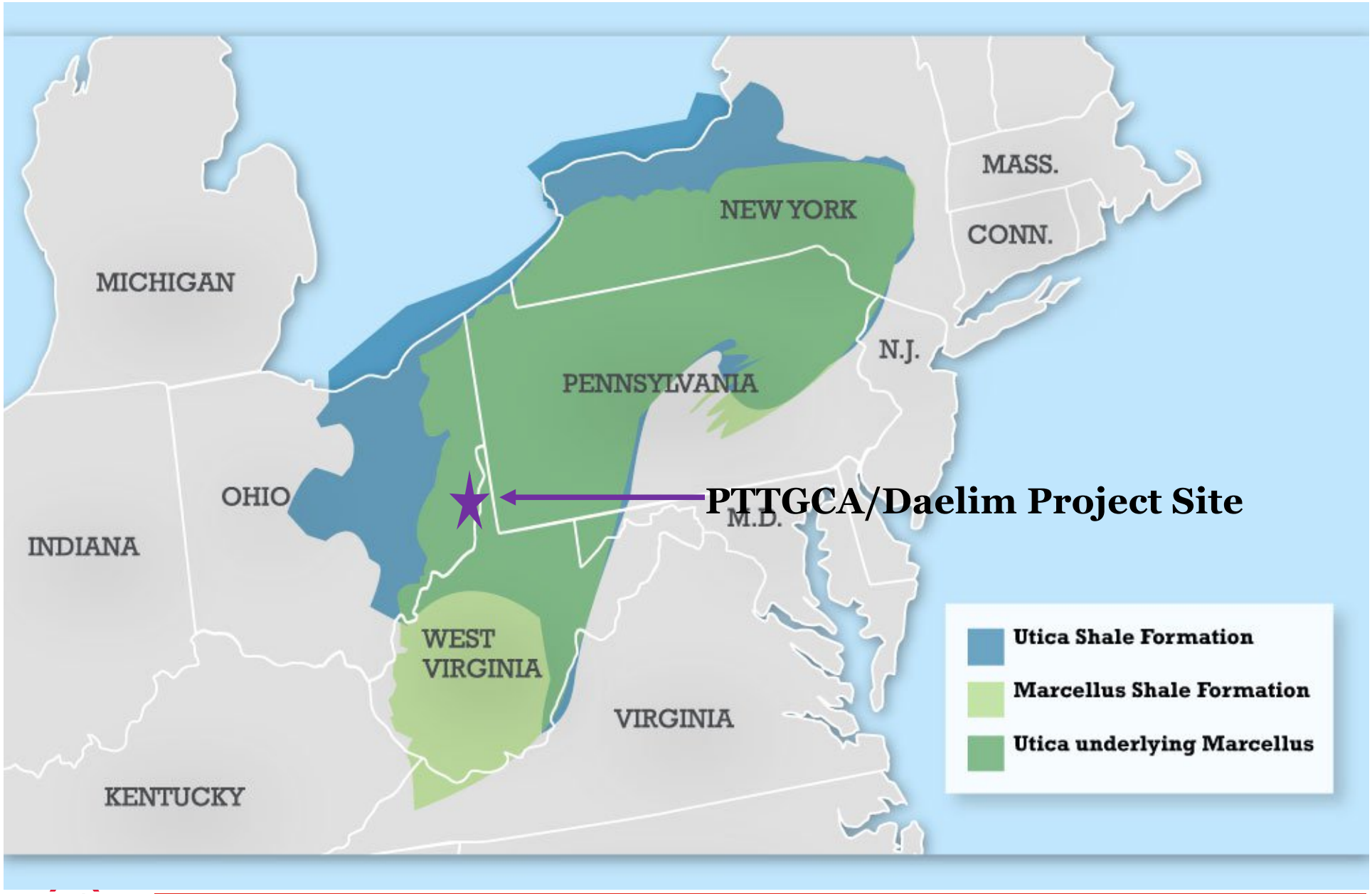
PTTGCA/Daelim Project Overview

- PTTGCA/Daelim own a nearly 500-acre site on the Ohio River in Belmont County, Ohio
- The companies are considering building an ethane cracker petrochemical complex on the site
- Marcellus and Utica Shale development in western Pennsylvania, West Virginia, and Ohio has resulted in significant natural gas and natural gas liquids (NGL) production over the past 10 years
- Production is prolific, resulting in some of the lowest cost gas and NGL's in the world
- One of the primary NGL's that is being produced in mass quantities is ethane, the major building block for polyethylene, which is the foundation for making plastics that go in to nearly every product used today

PTTGCA/Daelim Project Overview

- 70% of the North American polyethylene production market is in the Midwest US
- There is a dual advantage of locating an ethane cracker in Ohio – direct access to the cost advantaged ethane feedstock and direct access to the market
- The potential ethane cracker complex would consume approximately 100,000 barrels of locally sourced ethane per day and would produce 1.5 million metric tons of high-density polyethylene per year
- The closest crackers are in Ontario, Canada, but most of the largest assets are in northern Alberta and in the US Gulf Coast
- Shell Chemical is constructing a similar facility in Monaca, PA, about 30 miles northwest of Pittsburgh

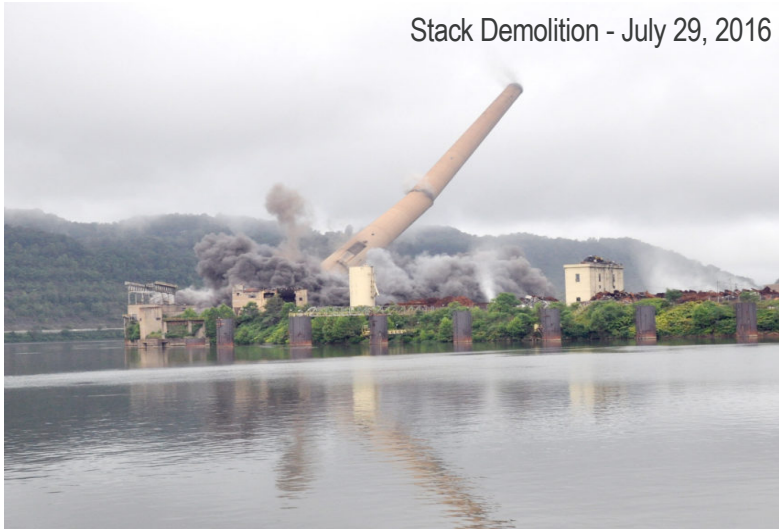
Project Site Location in Relation to Shale

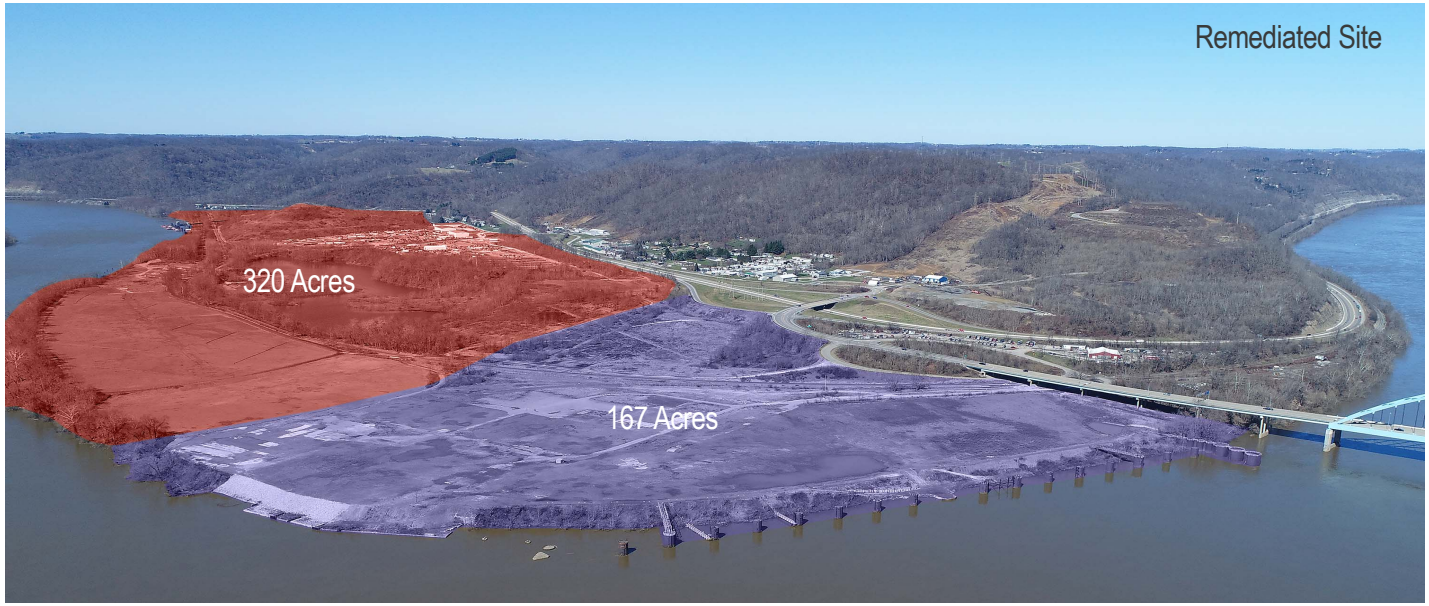


Project Site Information

- 480+ acre (200 hectare) site along the Ohio River in Belmont County, Ohio
- The site is located in direct proximity of the major Utica and Marcellus Shale plays, providing direct access to the world's cheapest natural gas and abundant, cheap ethane gas
- Major rail network operated by Norfolk Southern rail serves the site and operational barge docks are in place on the Ohio River
- The site is located along State Route 7, a 4-lane highway
- Robust 765kv and 345kv electricity infrastructure will serve the site with quadruple redundancy
- Shell Chemical is currently constructing a cracker of the same size as the PTTGCA/Daelim project approximately 70 miles away in Monaca, PA

PTTGCA/Daelim Site





JobsOhio's Project Assistance

- Much work has been done to help the project move forward including:
  - Power plant demolition and environmental remediation complete
  - Developed relationships with local citizens and elected officials to support the project
  - Partnered with skilled trades to ensure that the construction workforce is available for the project
  - Working to create a workforce development/talent acquisition training program

- JobsOhio worked with Norfolk Southern Railroad and the Ohio Rail Development Commission within ODOT to secure $16 million grant funds for rail upgrades needed for the project.

- All permits have been issued, including the air permit, which was issued on December 21, 2018

- If the project moves forward, final site work and construction can begin immediately

To date, JobsOhio has spent nearly $19 million on site preparation, demolition, and land acquisition costs