



Welcome

Ohio Oil & Gas Energy Education Program



COTC Energy Summit
March 22, 2012

About OOGEEP

- The Ohio Oil and Gas Energy Education Program is a non-profit education program funded by Ohio's oil and gas producers and royalty owners through a voluntary assessment on the production of all crude and natural gas produced in Ohio.
- **No Taxpayer Dollars!**
- We do not own, drill, operate or have a working interest in any oil and gas wells.

Basic Oil and Gas 101

What is Petroleum?

Petroleum is an organic substance derived from the remains of prehistoric plants and animals. It is a mixture of hydrocarbons or molecules containing hydrogen and carbon.

It exists sometimes as a liquid (**crude oil**) and sometimes as a vapor (**natural gas**).





Chimney



Library of Congress
#95502356

Through the mid 1860's, whale oil was the burning fuel of choice.



GRAND BALL GIVEN BY THE WHALES IN HONOR OF THE DISCOVERY OF THE OIL WELLS IN PENNSYLVANIA.

Vanity Fair, April 20, 1861

— A NATURAL REMEDY — FEELING GOOD, LOOKING GOOD



Shortly after the discovery of crude oil as an energy source, entrepreneurs recognized that crude oil could also be sold for medicinal purposes including rheumatism, sprains, bruises, burns, diarrhea, and other ailments. The crude oil based "cure-alls" were soon sold to the public as petroleum or "rock oil" – a natural remedy. Soon, crude oil


began to play a more important role in people's lives.

Robert Chesebrough (Chesebrough-Ponds) learned that he could turn the waxy crude oil substance, or paraffin, that clogged the crude oil wells, into Vaseline Petroleum Jelly. Chesebrough marketed Vaseline for leather treatment, balm for chapped hands and as a lubricant.



Miss Mabel Williams invented a new cosmetic "Lash-Brow-Line" by heating petroleum jelly over an open flame to create a black residue. The product was later renamed mascara, and her new company Maybelline went on to redefine the cosmetics industry.

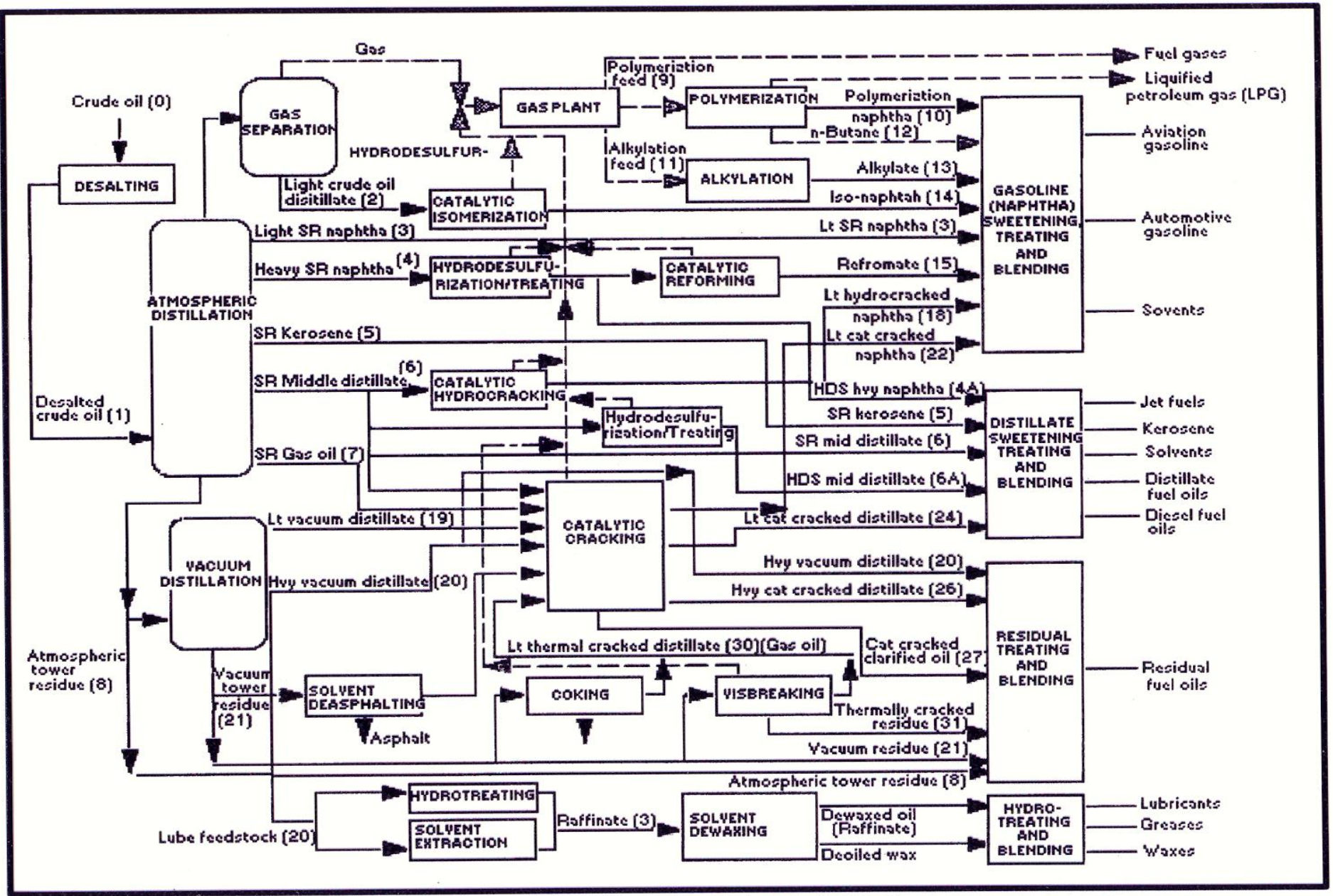
**KIER'S GENUINE
PETROLEUM!**



OR ROCK OIL!
A NATURAL REMEDY,
Proved from a Well 400 feet deep, and possessing wonderful Curative Powers, in diseases of the
CHEST, WIND-PIPE AND LUNGS;
ALSO, FOR THE CURE OF
DIARRHŒA, CHOLERA, PILES.
Rheumatism, Gout, Asthma, Bronchitis, Scrofula or King's Evil;
BURNS AND SCALDS,
Neuralgia, Tetter, Ring-worm, Obstinate Eruptions of the Skin, Itches and Pimples on the Face;
PILES, HEADACHE, CHRONIC SORE EYES, KRYSHIPELAS,
Pain in the Throat and Stomach, and all that class of diseases in which ALTERNATIVE OR PURIFY-
ING MEDICINES are indicated.
Put up by **S. M. KIER, CANAL BASIN, Pittsburgh.**
FOR SALE HERE!



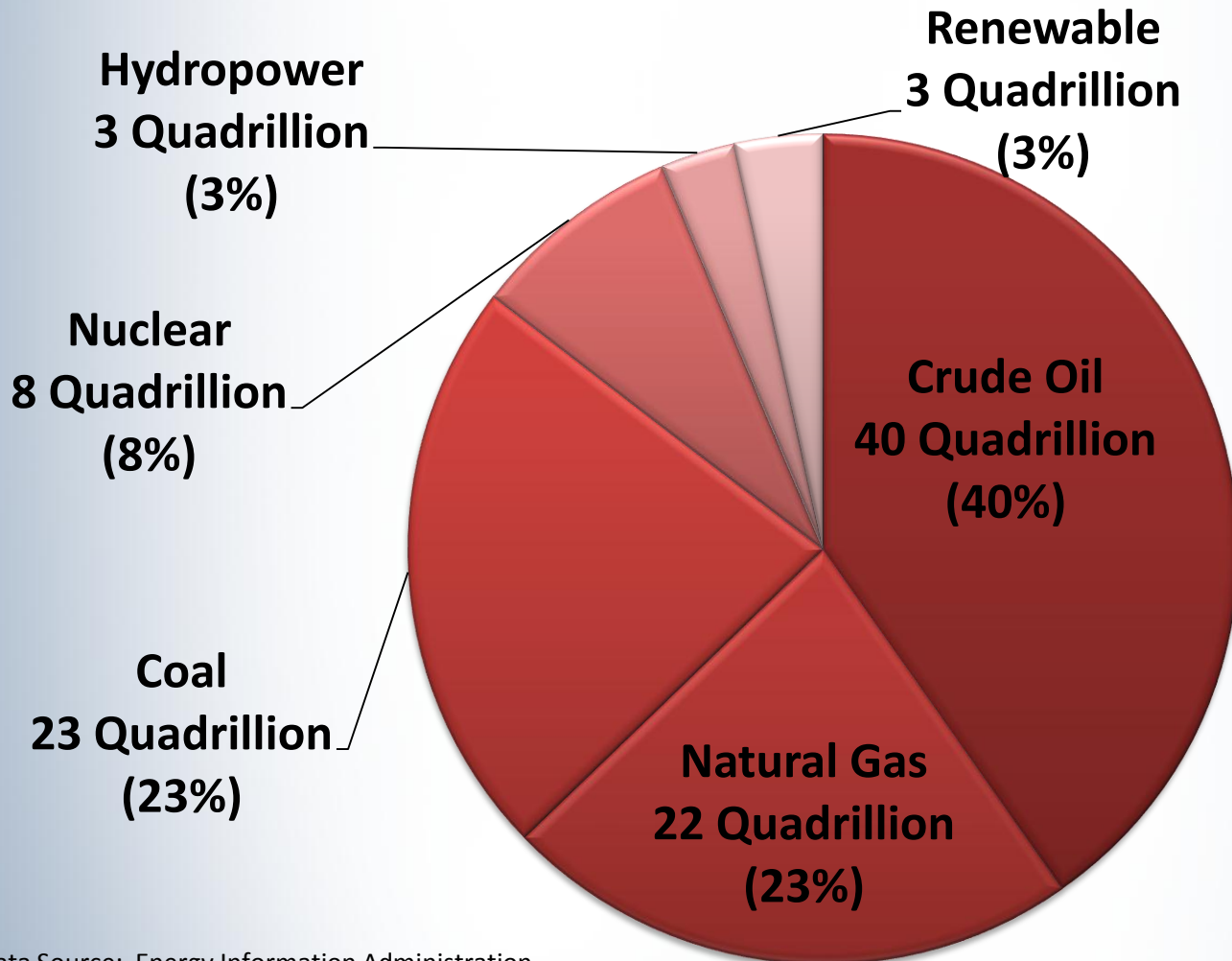
Refinery Crude Oil Process Today OOGEEP



Current Refined Products

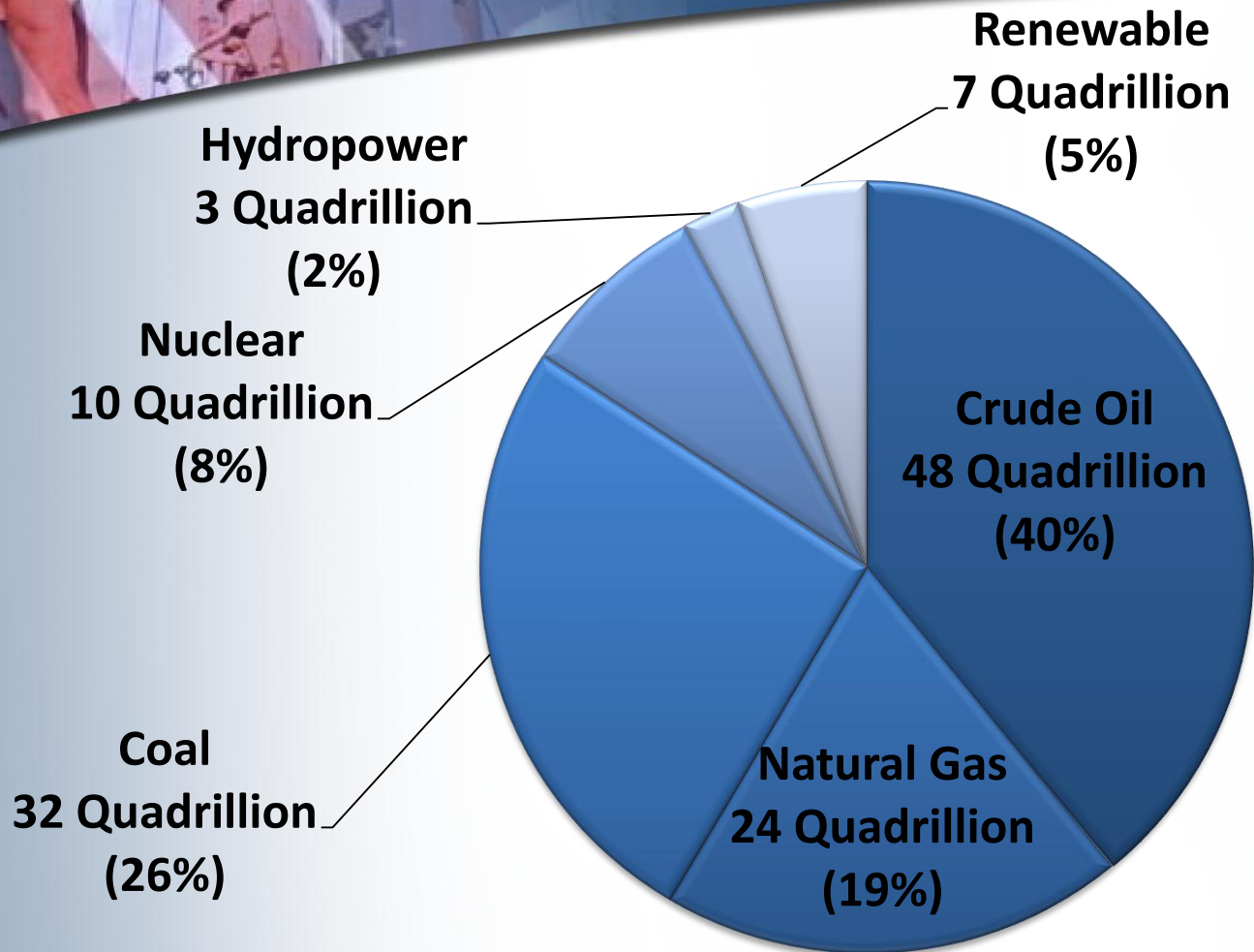


Current Energy Demands



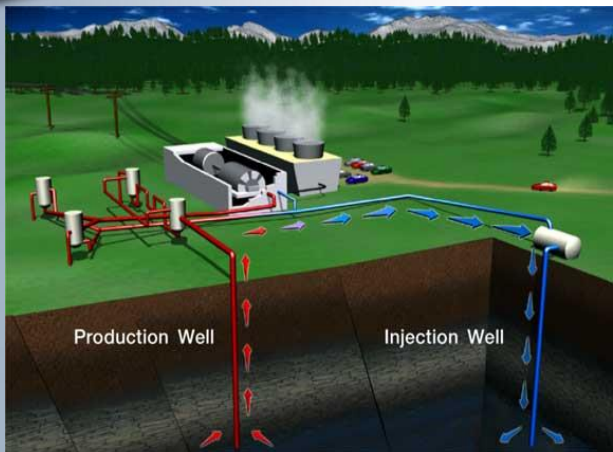
**2009 Worldwide
Energy
Consumption
100 Quadrillion BTU**

Future Energy Demands



**2030 Worldwide Energy Consumption
Estimated at 124 Quadrillion BTUs
Quantity/ Percentage by Energy Source**

If we *TRULY* want to be less dependent on foreign energy, then every community that **CONSUMES** energy should **PRODUCE** energy!!



2011 Ohio Highlights

(report released by ODNR March 15, 2011)

Total Number of Wells Drilled:

274,000

Total Number of Active Wells:

64,000

Total Number of Wells Drilled in 2011:

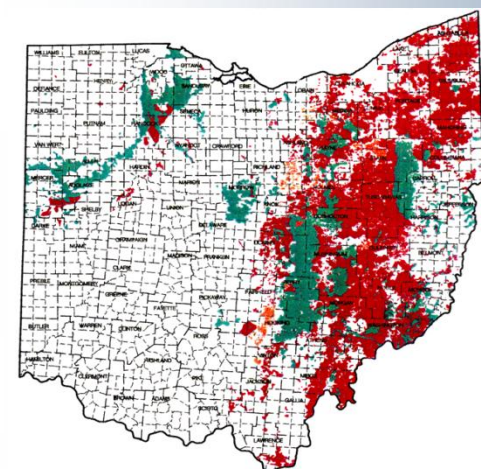
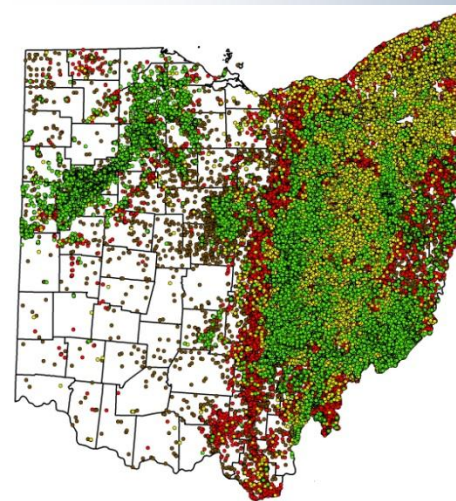
460

Total Number of Wells Drilled 30 years ago:

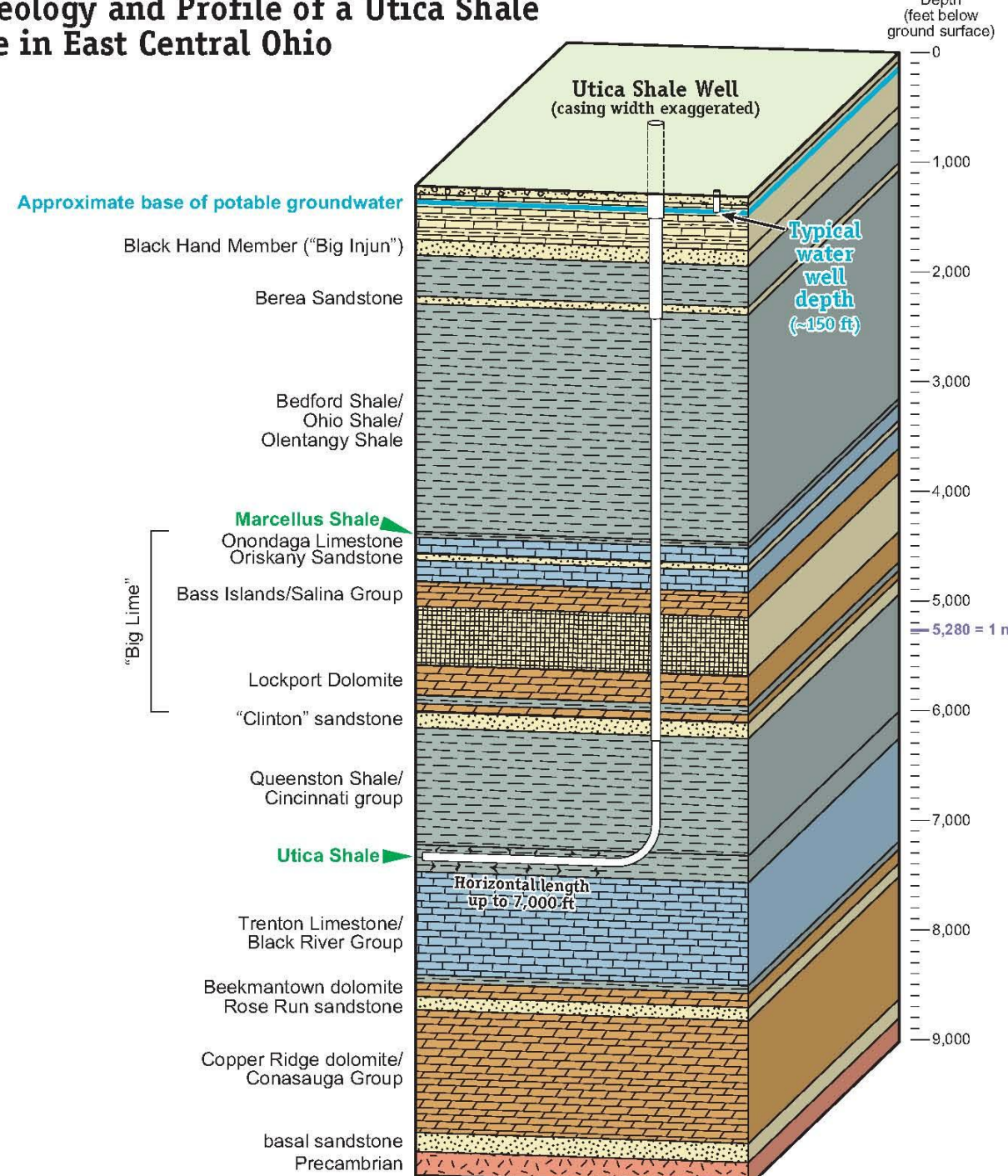
6,085

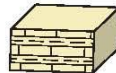

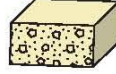
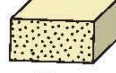




Annual Production in 2011:

- 73 billion cubic feet of natural gas
- 4.9 million barrels of crude oil



Generalized Geology and Profile of a Utica Shale Well Prototype in East Central Ohio

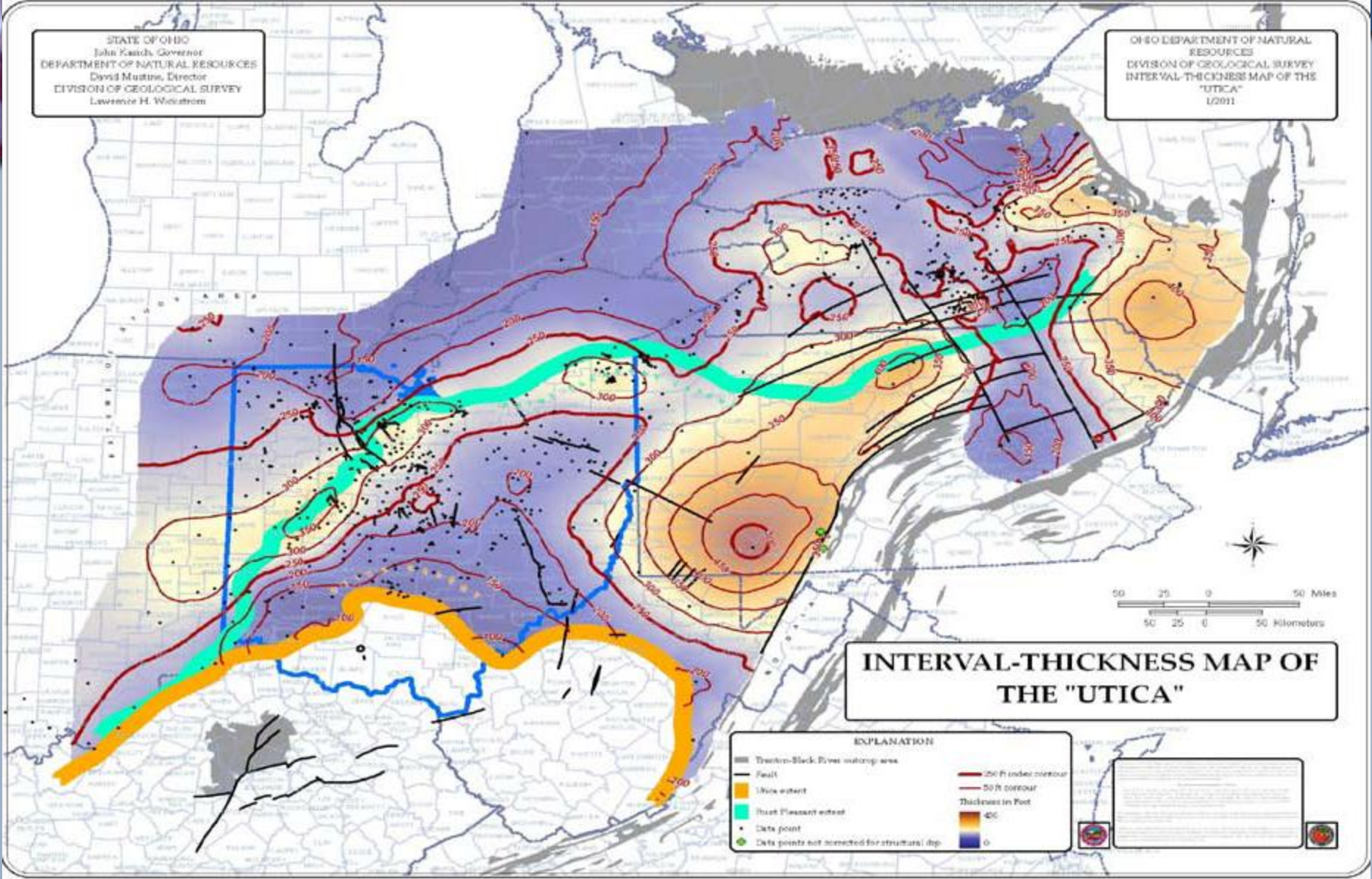


-  Interbedded sandstone, siltstone, shale, coal, and limestone
-  Interbedded salt, anhydrite, dolomite, and shale
-  Sand and Gravel
-  Sandstone
-  Shale
-  Limestone
-  Dolomite
-  Precambrian



STATE OF OHIO
John Kasich, Governor
DEPARTMENT OF NATURAL RESOURCES
David Mustina, Director
DIVISION OF GEOLOGICAL SURVEY
Lawrence H. Weitzman

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGICAL SURVEY
INTERVAL-THICKNESS MAP OF THE
"UTICA"
1/2011



INTERVAL-THICKNESS MAP OF THE "UTICA"

EXPLANATION

Western-Block Five outcrop area	250 ft contour
Fault	50 ft contour
Utica extent	Thickness in Feet
West Pleasant extent	0
Data point	
Data points not corrected for structural dip	

UTICA FORMATION

Ohio Natural Gas and Crude Oil Industry Economic Impact Study

- **Update to the 2008 Economic Impact Study**
 - **Ohio's Natural Gas and Crude Oil Exploration and Production Industry**
January 2008
- **Conducted by Kleinhenz & Associates**
 - **Release Date: September 20, 2011**

Data Source:

- **Surveys, Interviews, Data Received Under Confidential Agreements from various sectors of the Ohio Oil and Gas Industry**
- **Project Committee**
- **Critiqued by Educational Institutions including Marietta College, The Ohio State University, Zane State College and Central Ohio Technical College (COTC)**

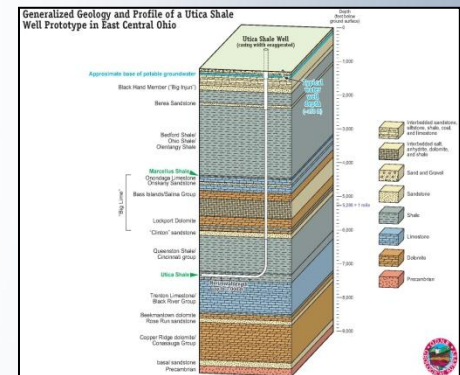
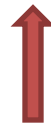
Projected Economic Impact Utica Shale

REINVESTMENT OF REVENUES—PAGE 16, TABLE 2 OF STUDY

Ohio’s natural gas and crude oil industry’s could reinvest approximately \$246 million on new exploration and development in 2011, and is estimated to ramp up to \$14 billion by 2015. Over the next five years, oil and gas producers are projected to reinvest over \$34 billion in exploration and development, midstream, royalty and lease expenditures.

Table 2: Utica Well Growth and Expenditures in Ohio, 2011 – 2015

Wells	2011	2012	2013	2014	2015	5 Year Total
Drilled	27	161	785	1,386	1,644	4,003
Completed	20	123	608	1,171	1,501	3,423
Dry hole Expenditure	\$99	\$565	\$2,651	\$4,561	\$4,909	\$12,785
Completion Expenditure	\$147	\$877	\$4,160	\$7,820	\$9,104	\$22,108
Total Expenditures (\$million)	\$246	\$1,442	\$6,811	\$12,381	\$14,013	\$34,893



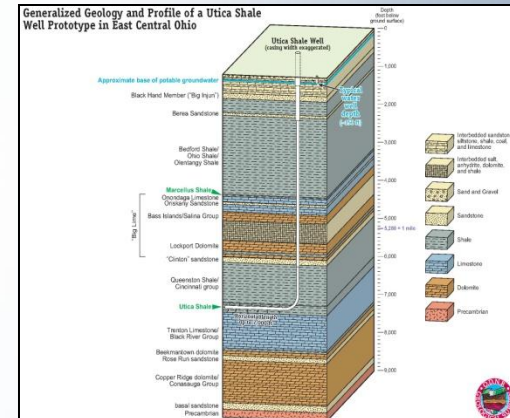
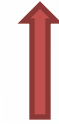
Projected Economic Impact Utica Shale

GROSS STATE PRODUCT—PAGE 23, TABLE 13 OF STUDY

Ohio’s natural gas and crude oil industry, via its expenditures, could generate approximately \$12.3 billion to the gross state product and have a statewide output or sales of \$23 billion.

Table 13: Combined Economic Impacts of Spending on Utica Gas Formation
 (From Well Exploration and Development, Midstream, Royalty, and Lease Expenditures)

Measure	2011	2012	2013	2014	2015
Employment	4,614	22,297	102,924	178,088	204,520
Gross Regional Product (2010\$)	\$229,770,873	\$1,140,187,970	\$5,434,884,446	\$10,037,403,159	\$12,348,656,034
Wages by Place of Work	\$185,120,071	\$987,630,736	\$4,941,863,716	\$9,454,936,109	\$12,044,578,347
Output (2010\$)	\$406,841,643	\$2,099,356,549	\$10,062,360,372	\$18,522,521,565	\$22,701,928,946



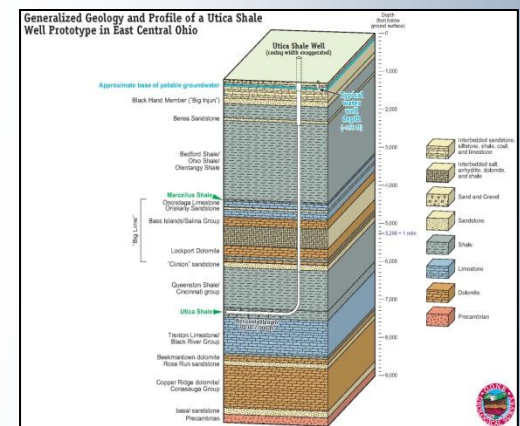
Projected Economic Impact Utica Shale

ROYALTIES—PAGE 19, TABLE 6 OF STUDY

Ohio’s natural gas and crude oil operators (producers) could distribute more than \$1.6 billion in royalty payments to local landowners, schools, businesses and communities based on an estimate of 2,837 new Utica wells drilled and completed (in production) between 2011 and 2015. This could exceed the total amount of royalties paid for all geological formations between 2000 and 2010.

Table 6: Estimated Royalty Payments, All Ohio Utica Wells 2011 -2015

Year	Wells Drilled	Wells in Production	Gross Gas Production	Royalty Payment
2011	27	0	0	\$0
2012	161	20	17,053,411	\$13,813,263
2013	785	143	116,357,749	\$94,249,776
2014	1386	751	591,406,043	\$479,038,895
2015	1644	1,923	1,269,345,132	\$1,028,169,557
Sum	4003	2,837	1,994,162,335	\$1,615,271,491



Projected Economic Impact Utica Shale

Tax Revenues—Table 19, Page 26 of Study

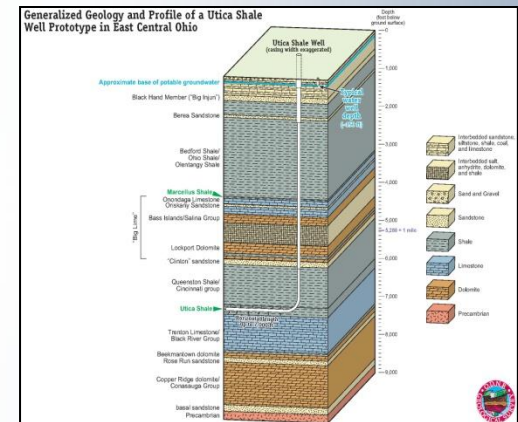
Table 19: Summary of Tax Payments, Ohio Utica Wells 2011 – 2015

Year	Severance Taxes	Commercial Activity Tax	Ad Valorem Tax	Federal Income Tax	State and Local Income Taxes	Total
2011	\$0	\$0	\$0	\$0	\$0	\$0
2012	\$434,862	\$239,430	\$1,072,262	\$1,878,604	\$469,651	\$4,094,809
2013	\$2,967,123	\$1,633,663	\$7,316,193	\$12,817,970	\$3,204,492	\$27,939,440
2014	\$15,080,854	\$8,303,341	\$37,185,668	\$65,149,290	\$16,287,322	\$142,006,475
2015	\$32,368,301	\$17,821,606	\$79,812,249	\$139,831,060	\$34,957,765	\$304,790,980
Sum	\$50,851,140	\$27,998,039	\$125,386,371	\$219,676,923	\$54,919,231	\$478,831,704



Special note:

In Table 19, the tax revenues are based on current annual production. Actual collection time may vary.



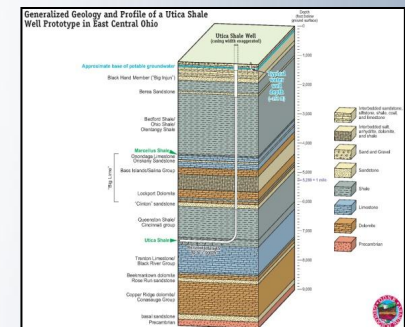
Projected Economic Impact Utica Shale

JOBS AND PERSONAL INCOME—PAGE 23, TABLE 13

Between 2011 and 2015, Ohio's natural gas and crude oil industry will help create and support more than 204,520 jobs due to the leasing, royalties, exploration, drilling, production and pipeline construction activities for the Utica Shale within Ohio. The industry wages is projected to grow to more than \$12 billion in annual salaries and personal income to Ohioans by 2015.

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Output (2010\$)	\$406,841,643	\$2,099,356,549	\$10,062,360,372	\$18,522,521,565	\$22,701,928,946



Workforce Development

Ohio's Natural Gas and Crude Oil Industry

Entry Level Jobs

OHIO'S NATURAL GAS AND CRUDE OIL INDUSTRY



Job Title	Job Description	Typical Education	Typical Job Location
Records Coordinator	Assists with maintenance of lease records in a central file room.	High School Diploma/ GED	Office
Roustabout	Performs a variety of relatively unskilled tasks relating to E&P (Exploration and Production) activities, including grounds maintenance, painting, clearing vegetation, etc.	High School Diploma/ GED	Field
Supervisor - Workover Rigs (Tool Pusher)	Supervisors are the lead person of a 3-5 person workover rig crew that performs services on crude oil and natural gas wells. Plans and coordinates job procedures with customers, vendors and other contractors.	High School Diploma/ GED	Field
Truck Drivers	Truck Drivers provide a wide range of services from moving heavy equipment, drilling rigs, service rigs, support equipment, and supplies. Truck types can include straight, tractor trailers, tanker, and vacuum trucks.	High School Diploma/ GED CDL A Some jobs will require additional driver endorsements.	Field
Welders	Provides a large variety of services from production equipment fabrication & repair to pipeline welding and construction.	Associate's/ Technical Degree Experience varies from 2 -5 years minimum.	Field

Careers in Ohio

Ohio Oil and Gas Energy Education Program

Teacher Workshops



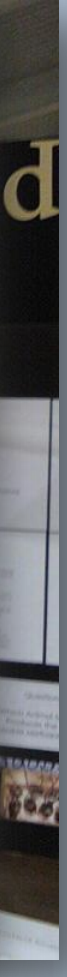
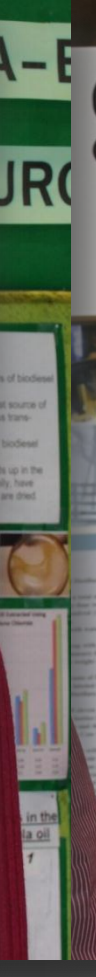
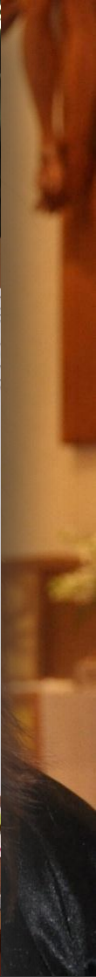
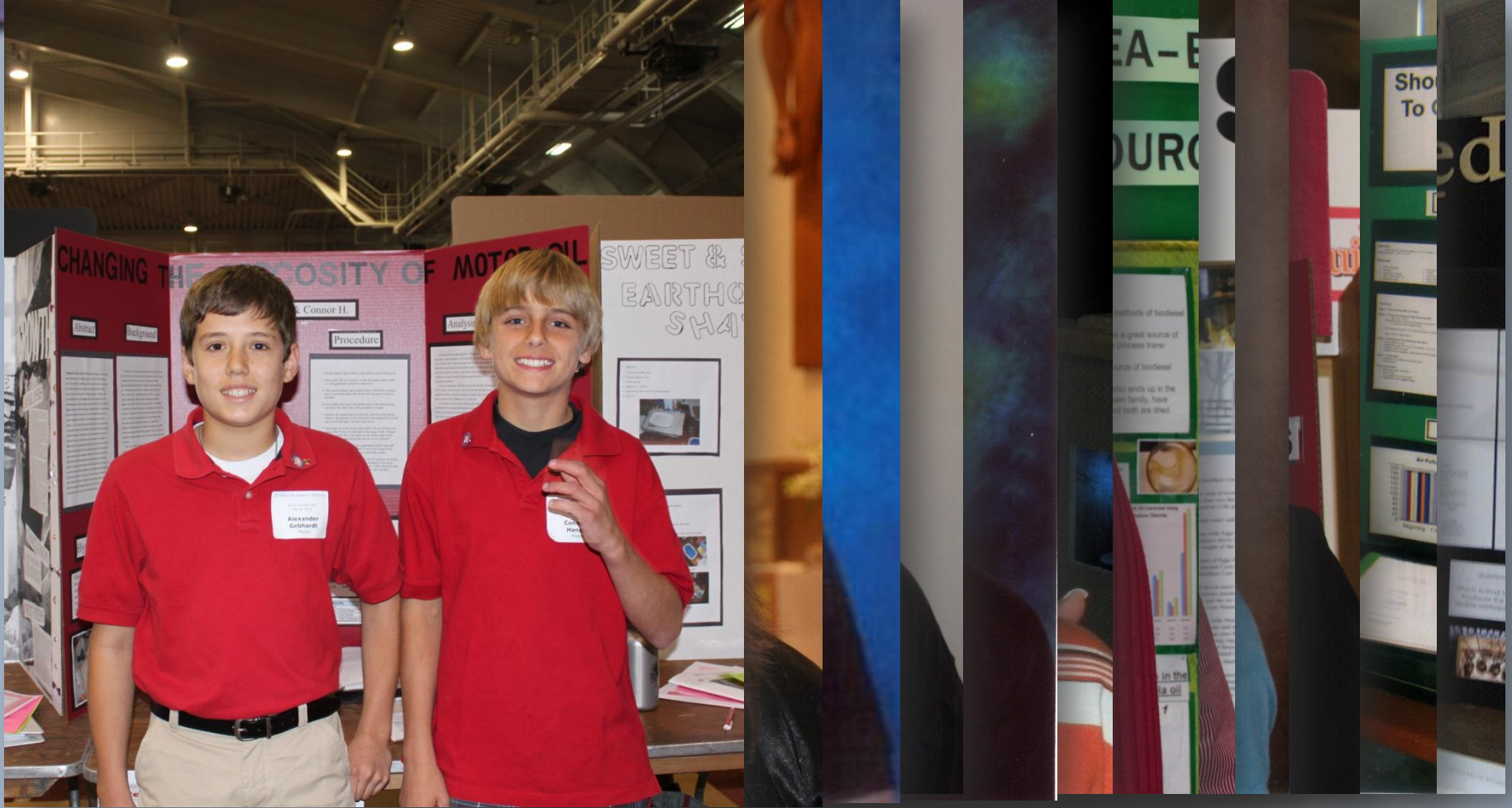
Oil & Gas
Energy Education
**Science Teacher
Workshop**

OOGEEP
Ohio Oil & Gas Energy
Education Program

Ohio Oil & Gas Energy Education Program
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Phone: 740.587.0410 • www.oogeep.org

The poster features a collage of images related to science and energy: a scientist in a lab coat, a person at a computer, a person in a hard hat, and a person in a life preserver. The background is a mix of red and blue tones.

Science Fair



Scholarship



Workforce and Industry Training **DOGEEP**



Fire Training



What Does This All Mean?

- **Great Geological Gift**
- **150+ History of Exploration, Drilling and Production**
- **Smaller Environmental Impact**
- **Economic Opportunities in Ohio**
- **Long Term Job Opportunities**



OHIO OIL & GAS ENERGY EDUCATION PROGRAM



Thank You!

Ohio Oil & Gas Energy Education Program



[To Learn More:](#)

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