

# **Southern Ohio Diversification Initiative**



#### **PETROLEUM REFINERY**

Capacity: 500,000 Barrels/Day Estimated Cost: \$15 billion

**Employment per IMPLAN Analysis:** 

Туре	Construction	Operation
Direct	10,000	1,600
Indirect	1,355	5,500
Induced	2,114	2,978
Total	13,469	10,078

<b>Economic Indicator</b>	Construction (Typically 5-7 years)	<b>Operations</b> (Indefinite years with upgrades)
Total Annual Average Jobs	13,469	10,078
Total Value Paid to Workers	\$509,230,412	\$687,966,335
Gross Regional Product	\$746,289,747	\$1,110,653,201
Direct Industry Product	\$1,466,489,020	\$14,221,254,720



#### **PETROLEUM REFINERIES IN REGION**

#### **Distance of Petroleum Refineries From Portsmouth Facility**





#### **Refinery Facts**

- Ohio has the seventh-largest crude oil-refining capacity in the US.
- Petroleum refineries produce liquids the petrochemical industry uses to make a variety of chemicals and plastics.
- Ohio is part of the Midwest Petroleum Administration for Defense District (PADD 2).

### PETROLEUM PRODUCTS MADE FROM A BARREL OF CRUDE OIL



A 42 gallon (US) barrel of crude oil yield about 45 gallons of petroleum products because of refinery processing gain, which is due to changes in the overall density of the refined products relative to that of the crude oil.

In the US, 19 million barrels of crude oil is refined each day. 10.1 million barrels of crude oil is imported.

#### NATURAL GAS (NG) SUPPLY AT PORTS

NG supplier: Purchased from Sage Energy and conveyed by Pike Natural Gas PORTS NG pipeline: 8 inch diameter underground line at 100 PSI, capacity 19,762 cfm? PORTS to main NG line: 110,890 Ft or ~21 miles.

NG right-away info: width, max diameter pipe, lines sizes between PORTS and main line?

## NATURAL GAS (NG) REQUIREMENTS FOR REFERENCED PETROLEUM REFINERY

44,097 cfm of natural gas is required by referenced Refinery, assuming the following parameters.

• 19 million barrels of crude refined per day in USA, in 2016

•881,611 million cubic feet (cf) of natural gas consumed per year by USA refineries, in 2016

Natural Gas (cf) per barrel of crude oil = 127 cf/barrel

Natural Gas (cfd) required by reference refinery = (127 cf /barrel) (500,000 barrels/day) = 63,500,000 cfd or 44,097 cfm

#### **PIPELINES IN OHIO**



### **BENEFITS OF INLAND PETROLEUM REFINERY IN OHIO**

- · Reduced vulnerability to natural or man-made events
- Proximity to market
- Proximity to Utica and Marcellus shale oil and gas
  Natural gas availability for producing hydrogen
- Proximity to coal reserves for future coal-to-liquids conversion



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Our Mission for the Southern Ohio Diversification Initiative (SODI) is to improve the quality of life for Jackson, Pike, Ross, and Scioto Counties through economic diversification, development of underutilized land and facilities on the Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant Site, and continued support of local industry.

Rover Pipeline, www.roverpipelinefacts.com

Energy Information Agency (EIA), www.eia.gov

National Pipeline Mapping System (NPMS), www.npms.phmsa.dot.gov

List of power stations in Ohio, Wikipedia, https://en.wikipedia.org/wiki/List of oil refineries#Ohio

Pipeline and Hazardous Materials Safety Administration (PHMSA), www.phmsa.dot.gov

Ohio Pipeline Awareness, http://oh.pipeline-awareness.com

References: