MARCELLUS SHALE COALITION®

INDUSTRY…AT A GLANCE

October 2024

DRILLING ACTIVITY IN PA

MARCELLUS SHALE COALITION®

Pennsylvania:
A World-Class Player in Shale Gas Production

- 2nd largest natural gas producer in U.S.
- Over 11,500 producing wells
- 7.53 Trillion Cubic Feet (2023)
- 18% of total U.S. natural gas production
- 36 of 67 counties with at least 1 producing well

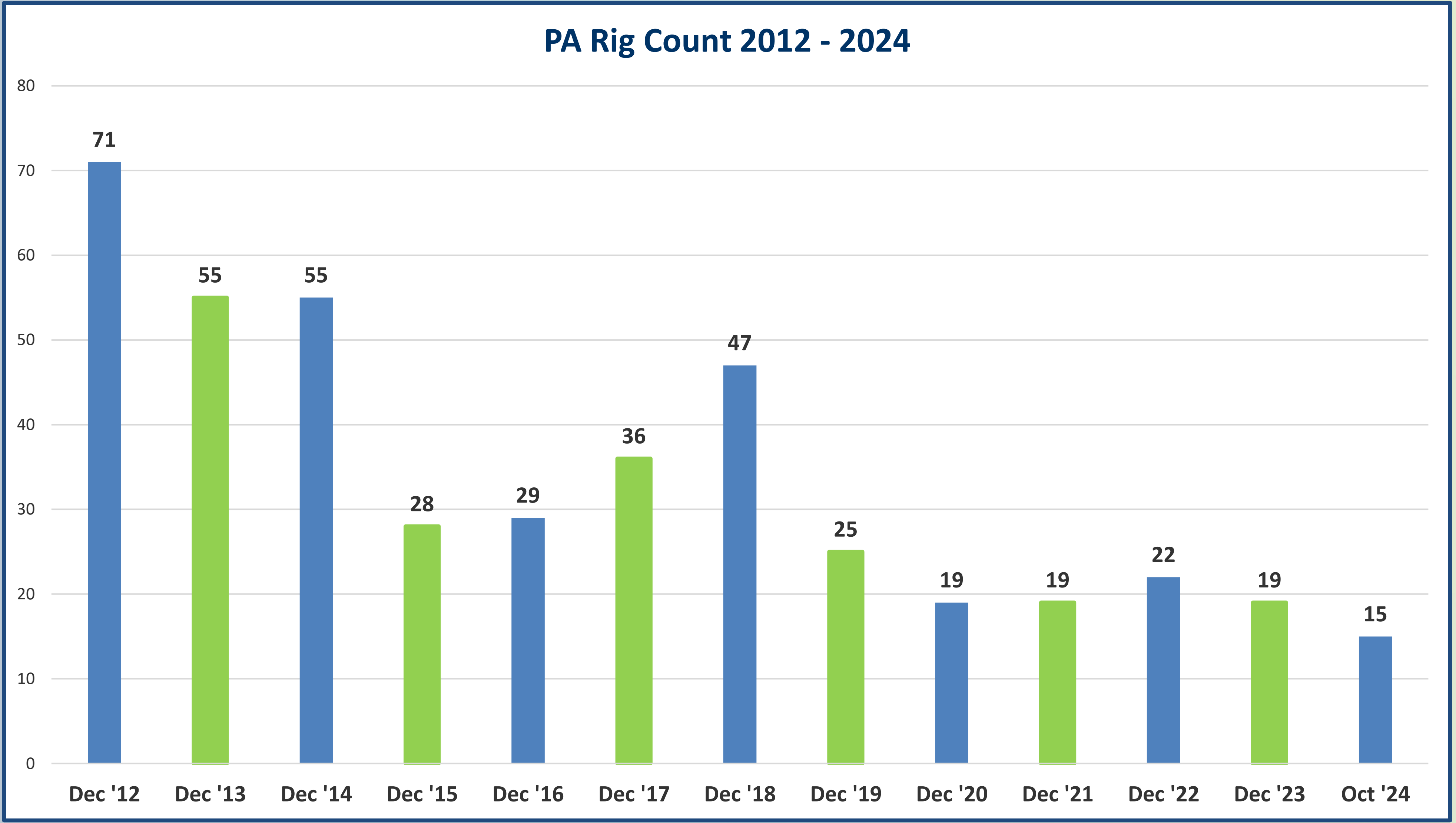
Drilling Activity in PA

- 13,168 unconventional wells*
- 11,591 unconventional wells producing natural gas
- 3,927 unconventional well pads
- 20.2+ billion cubic feet/day
  - 7.53 trillion+ cubic feet/year
  - 32% of total U.S. shale gas production

Drilling rig in Potter County, PA

* June 2024 (most recent data available)

Drilling Activity in PA



Drilling Activity in PA

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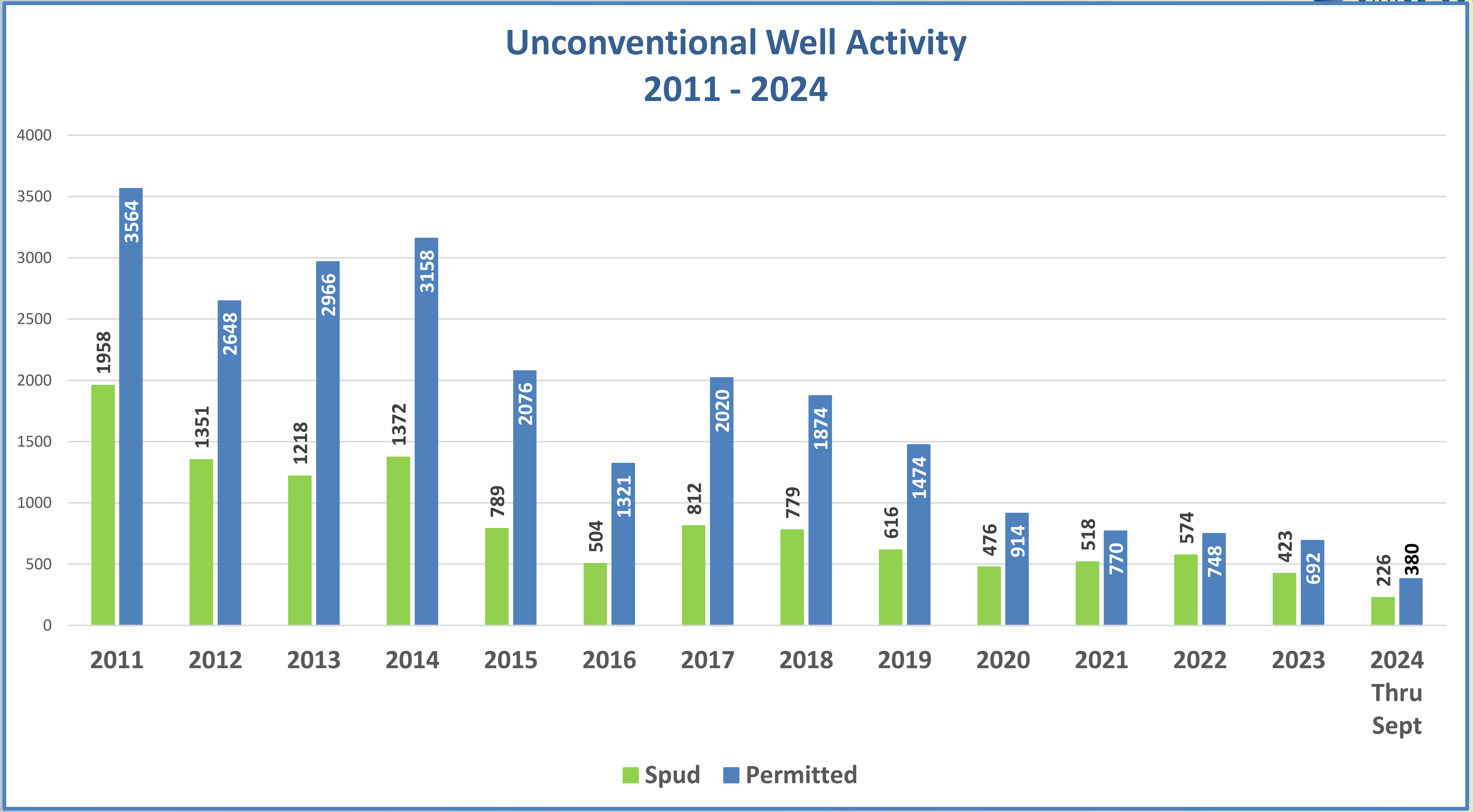
Keep in Mind…

- Rig count not the same metric as 6-8 years ago:
  - Longer laterals
  - More efficient drilling
  - More frac stage completions

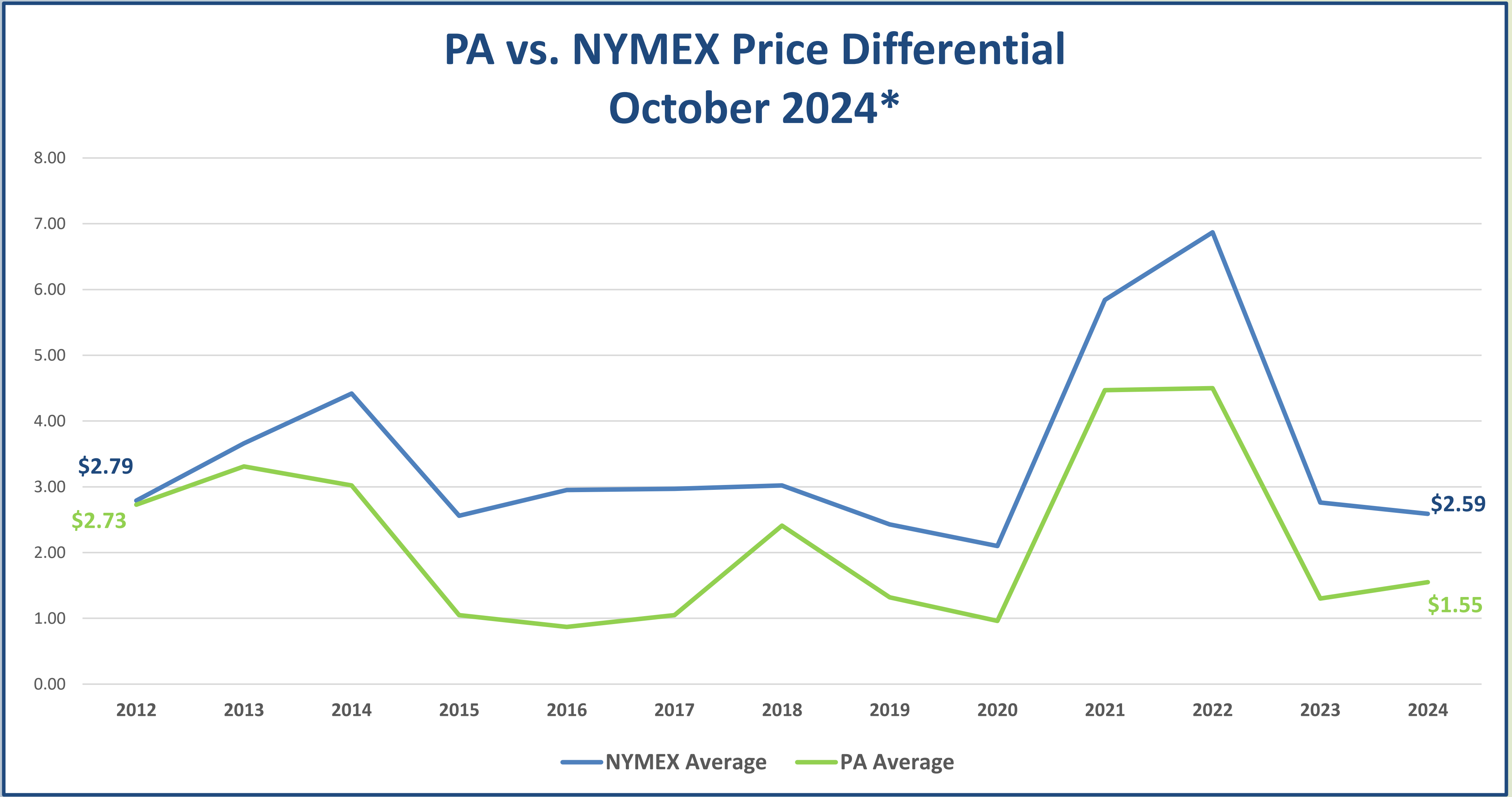
- But still *an* indicator:
  - Oil v Gas
  - Wet v Dry
  - Basin v Basin

Drilling Activity in PA



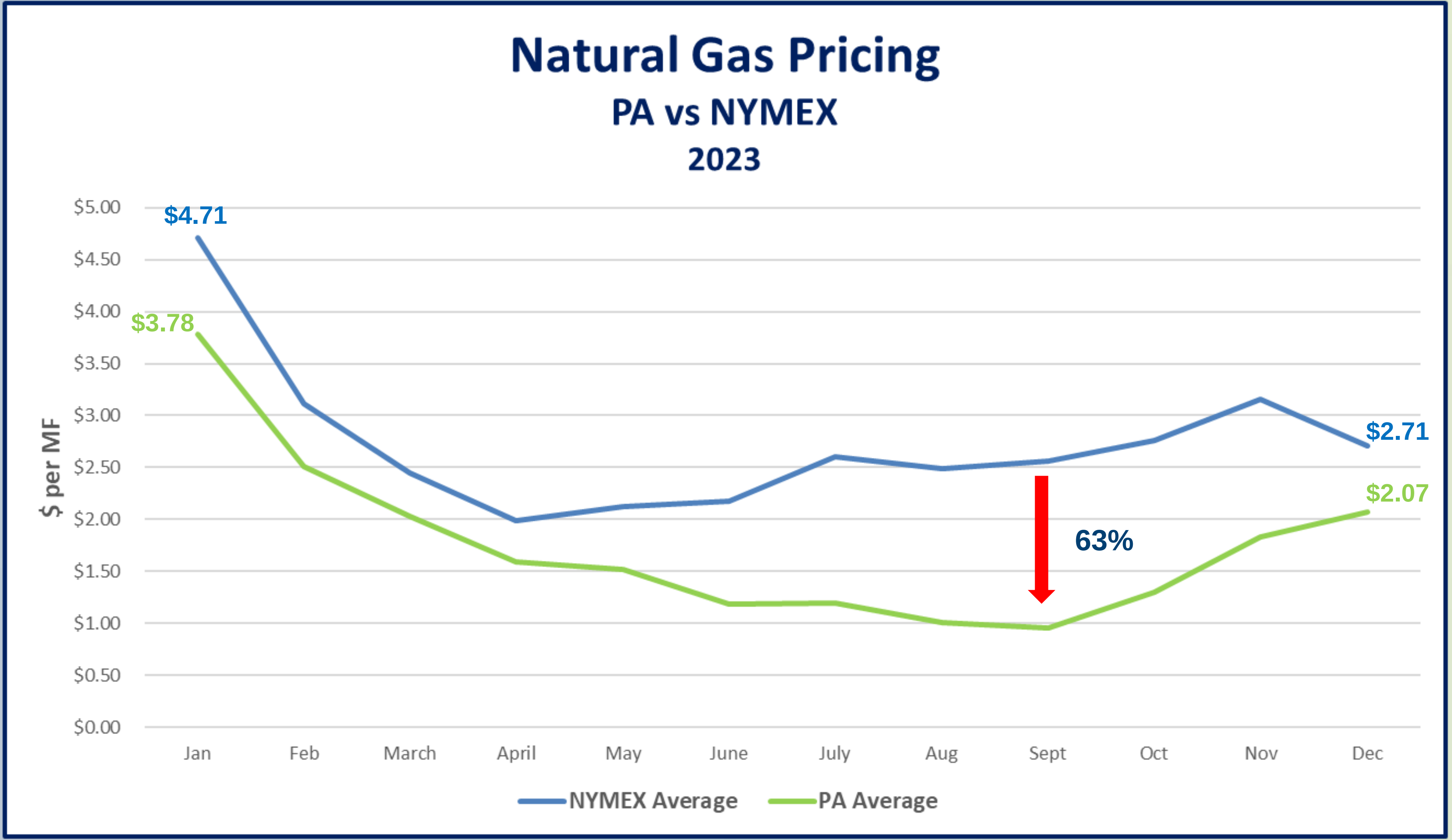
PRICING

PA Price Differential



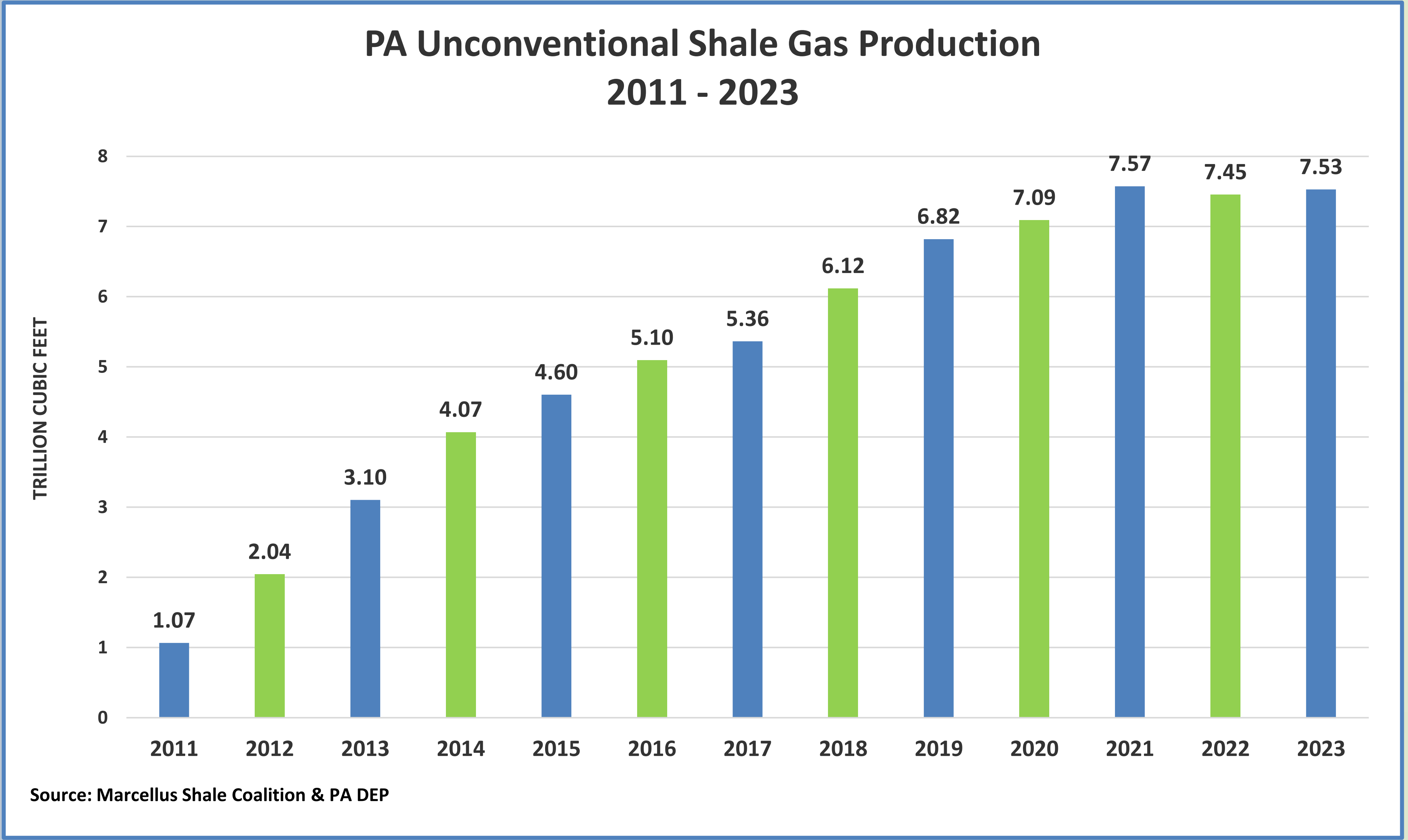
*** October 2024 Monthly Bidweek Price – Platts Inside FERC**
Price reflects year-over-year for current month

PA Price Differential



NATURAL GAS PRODUCTION

Fueling the Nation



By The Numbers

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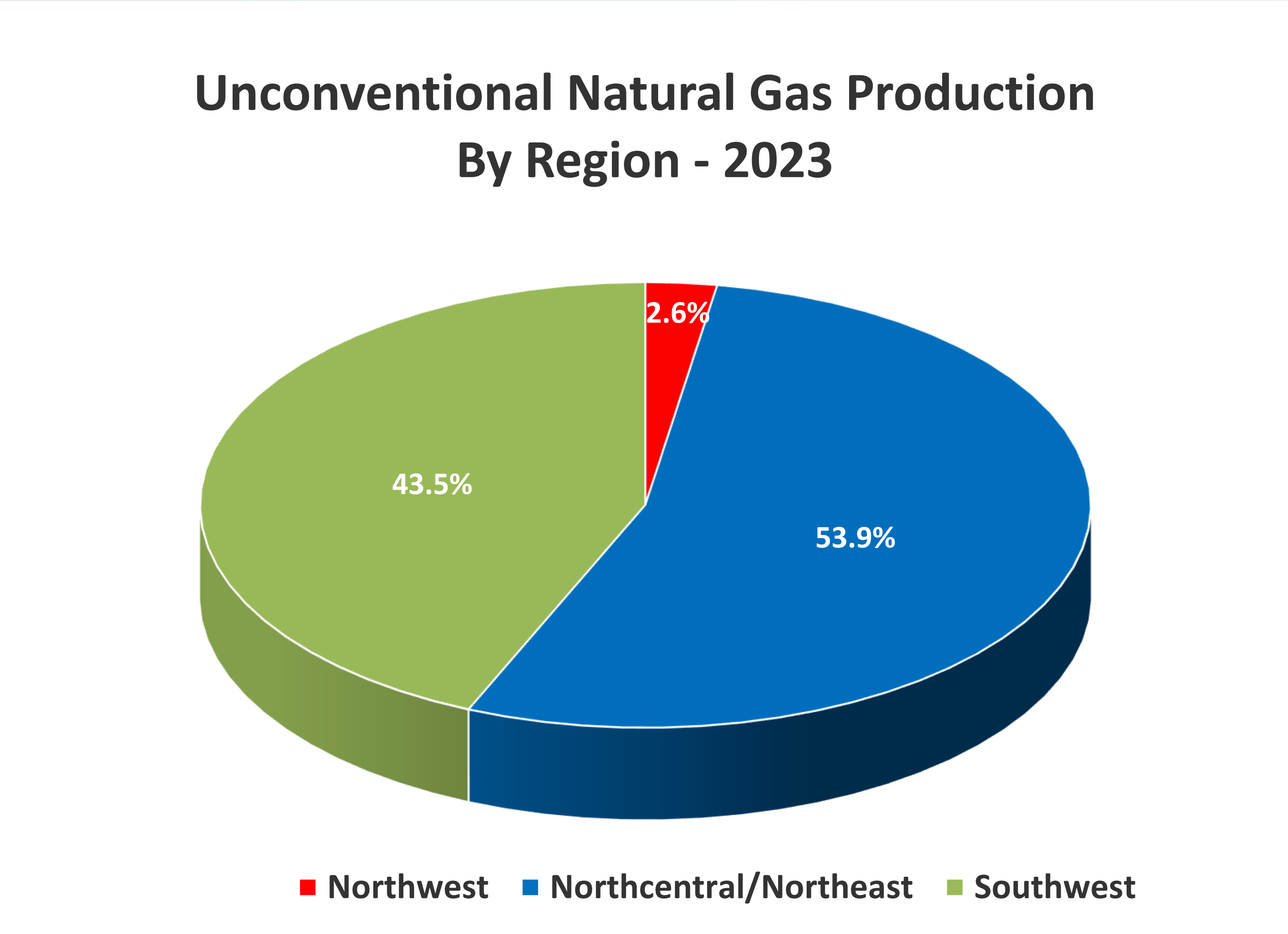
Top Ten Producing Counties by Volume (2023)

County	Production (MCF)	% of PA Production	# of Producing Wells
Susquehanna	1,583,843,478	21%	1,925
Greene	1,181,920,157	15.7%	1,406
Washington	1,153,447,381	15.3%	1,877
Bradford	1,133,569,361	15%	1,446
Lycoming	428,685,517	5.7%	977
Tioga	424,340,287	5.6%	805
Wyoming	281,552,297	3.7%	315
Butler	266,198,784	3.5%	607
Westmoreland	215,233,884	2.9%	289
Sullivan	171,976,215	2.3%	136

By The Numbers



MOVING GAS TO MARKET

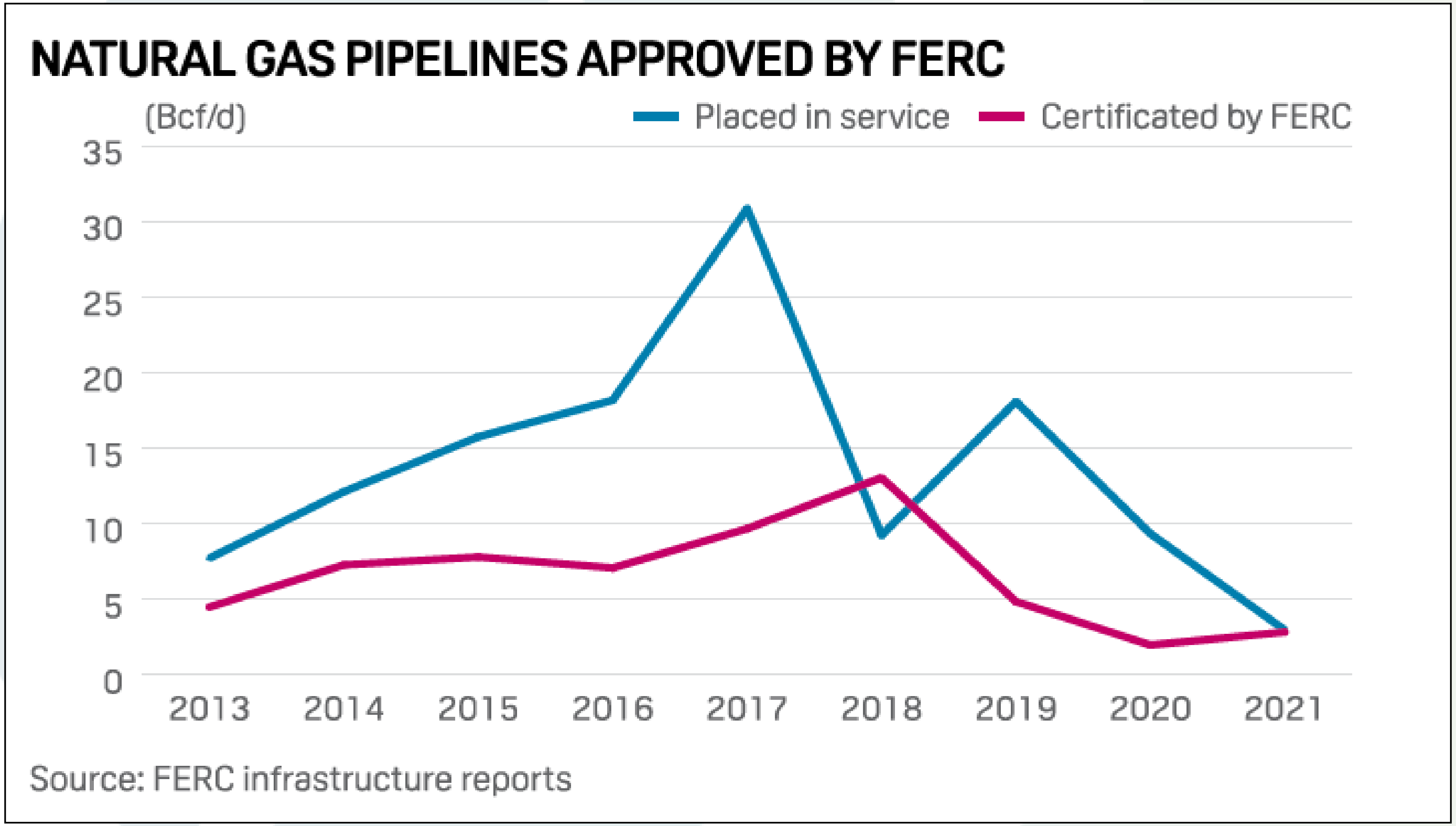
Moving Gas to Market

Upcoming Pipeline Projects for Appalachia

Project Name	Pipeline	Pipeline Corridor	Status	Stated Capacity	Stated Start Date
Greene Interconnect (MVP Partial Service)	EQT/MVP	Regional	EA/EIS Issued	1,000	12/1/2019
Southern Reliability Link	NJ Nat Gas	East/Northeast	Under Late Construction	180	3/1/2020
Gateway	TRANSCO	East/Northeast	Under Early Construction	65	3/1/2020
AquaTrans Power Plants Supply Laterals	EQT	South Ohio	Announced	100	6/1/2020
TP-4555 Bare Pipe Replacement	EQT	Regional	Filed	96	6/1/2020
Line N Expansion - 2020	NFG	Regional	Open Season Completed	215	7/1/2020
PennEast Pipeline	PennEast	East/Northeast	Certificate Issued	1,107	7/1/2020
Empire North Expansion	NFG	Canada	Under Early Construction	205	9/1/2020
Yorktown M&R Replacement & Reliability Project	AGT	Regional	Under Early Construction	22	9/1/2020
Buckeye Xpress	TCO	South Ohio	EA/EIS Issued	275	11/1/2020
Mountain Valley Pipeline	EQT	South Atlantic	Under Late Construction	2,000	12/1/2020
Wright Interconnect Project	Constitution	East/Northeast	Certificate Issued	650	12/1/2020
Constitution Pipeline	Constitution	East/Northeast	Under Early Construction	650	12/1/2020
DTI Supply Header	Atlantic Coast	East/Northeast	Under Early Construction	1,500	12/1/2020
Northeast Supply Enhancement Project	TRANSCO	East/Northeast	Certificate Issued	400	12/1/2020
Greater Philadelphia Expansion	TETCO	East/Northeast	Open Season Completed	475	4/1/2021
2020 Expansion Project	Eastern Shore	East/Northeast	EA/EIS Issued	14	6/1/2021
Brooke County Access	EQT	Regional	Filed	140	8/1/2021
Central Corridor Pipeline Extension	Duke LDC	West	Announced	168	9/1/2021
Atlantic Coast Pipeline (ACP)	Atlantic Coast	South Atlantic	Under Early Construction	1,500	12/1/2021
FM 100 Modernization	NFG	Regional	Filed	330	12/1/2021
Seneca Supply Project	TRANSCO	Regional	Filed	582	12/1/2021
Northern Access 2016- Replacement (Empire)	Empire	Canada	Certificate Issued	350	2/1/2022
Northern Access 2016- Mainline (NFG)	NFG	Canada	Certificate Issued	497	2/1/2022

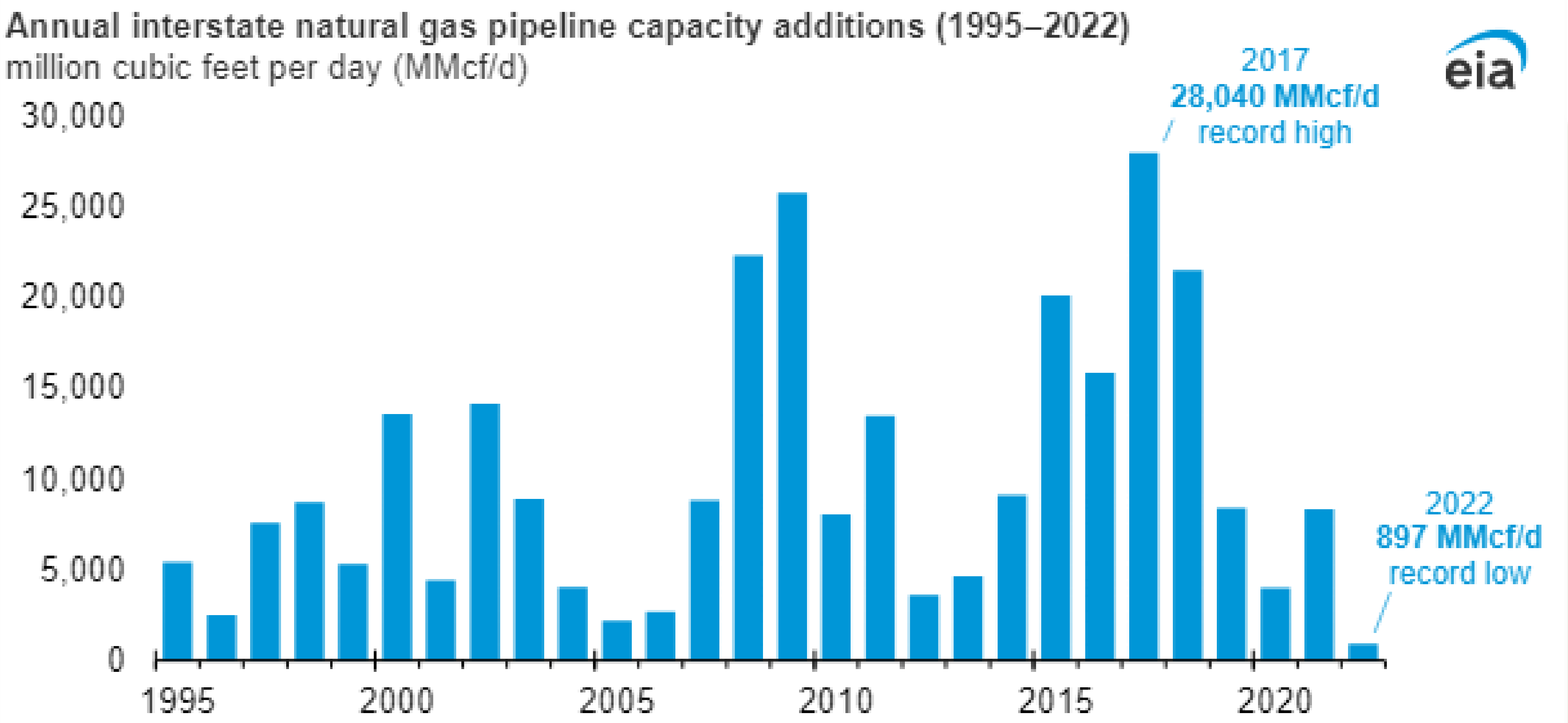
Source: GENSCAPE – Wood Mackenzie Nov. 2019

Slowing Infrastructure Build-Out



Source: Platts Inside FERC

Slowing Infrastructure Build-Out



Source: U.S. Energy Information Administration – State to State Capacity Tracker

Slowing Infrastructure Build-Out

Natural Gas, Oil Project Delays, Cancellations

CRUDE OIL | REFINED PRODUCTS | NATURAL GAS

PROJECT	COMMODITY	OPERATOR	STATUS	YEARS ELAPSED PROPOSAL TO CANCELLATION[1]
KEYSTONE XL	CRUDE OIL	TC Energy	CANCELLED	13
PORTLAND TO MONTREAL PIPELINE REVERSAL	CRUDE OIL	SUNCOR	CANCELLED	13
DAKOTA ACCESS PIPELINE EXPANSION	CRUDE OIL	ENERGY TRANSFER	PERMIT VACATED	3
BYHALIA (DIAMOND TO CAPLINE)	CRUDE OIL	Valero / PLAINS	CANCELLED	2
PALMETTO	REFINED PRODUCTS	KINDER MORGAN	CANCELLED	2
ATLANTIC COAST	NATURAL GAS	Dominion Energy	CANCELLED	6
CONSTITUTION	NATURAL GAS	Williams	CANCELLED	8
MOUNTAIN VALLEY	NATURAL GAS	equitrans	UNDER CONSTRUCTION	9
PENNEAST PIPELINE	NATURAL GAS	PennEast	CANCELLED	6
JORDAN COVE ENERGY PROJECT	NATURAL GAS	PEMBINA	CANCELLED	14

Note: Based on data from Rystad Energy; For Mountain Valley Pipeline, years elapsed represents from project's proposal to today.

Source: American Petroleum Institute

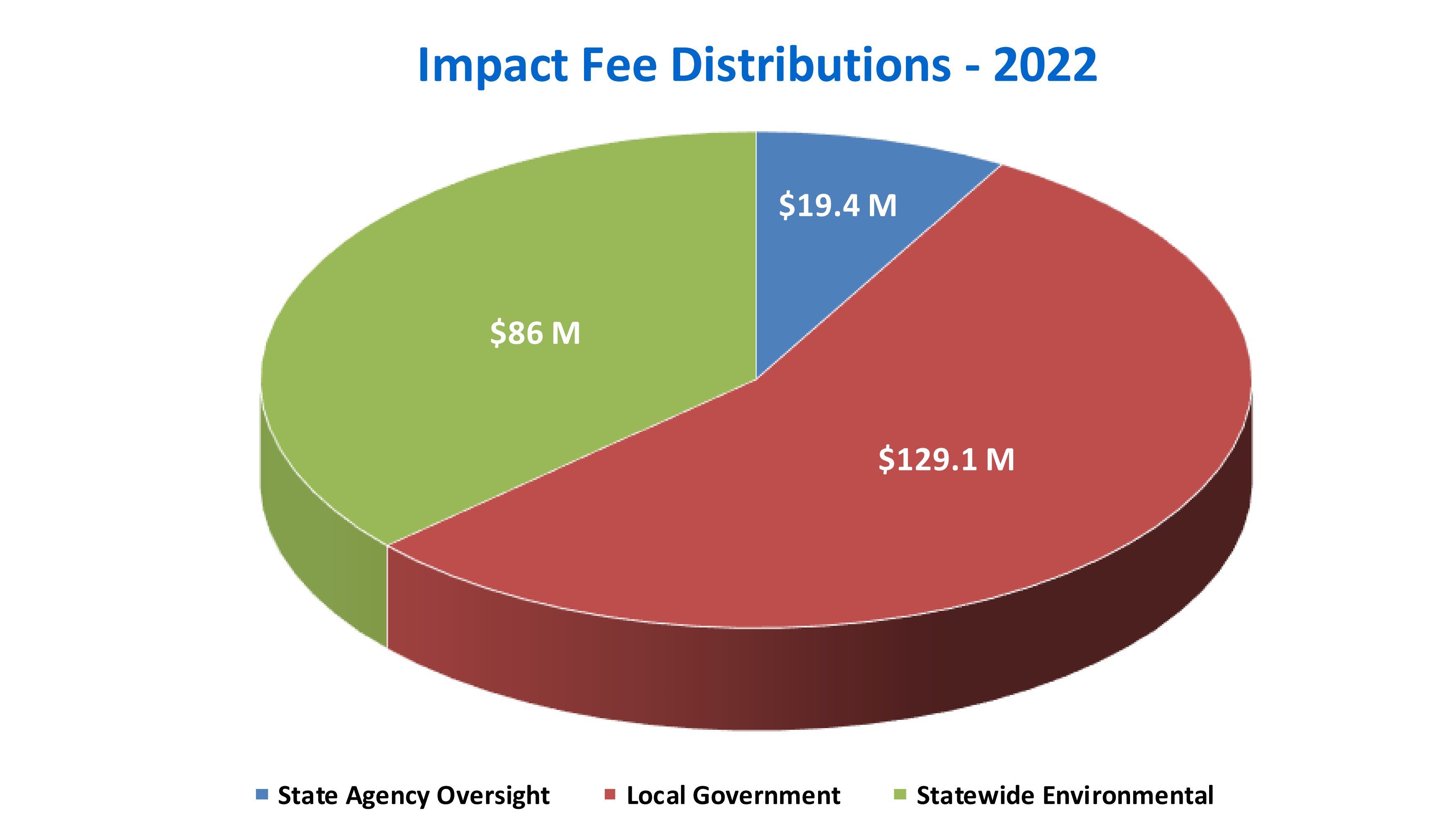
PA'S SEVERANCE TAX:

THE IMPACT FEE

Impact Fee Revenues to Date

Year Distributed	Amount
2012	$204.2 M
2013	$202.5 M
2014	$225.8 M
2015	$223.5 M
2016	$187.7 M
2017	$173.3 M
2018	$209.6 M
2019	$251.8 M
2020	$200.3 M
2021	$146.3 M
2022	$233.8 M
2023	$278.8 M
TOTAL:	**$2.54 Billion**

Benefiting PA Communities



Rebuilding PA's Communities

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Pa.'s Natural Gas Impact Fee (Tax)

Over $2.5 Billion Generated Since 2012

More than 1.6 Billion
Supports Community Initiatives:

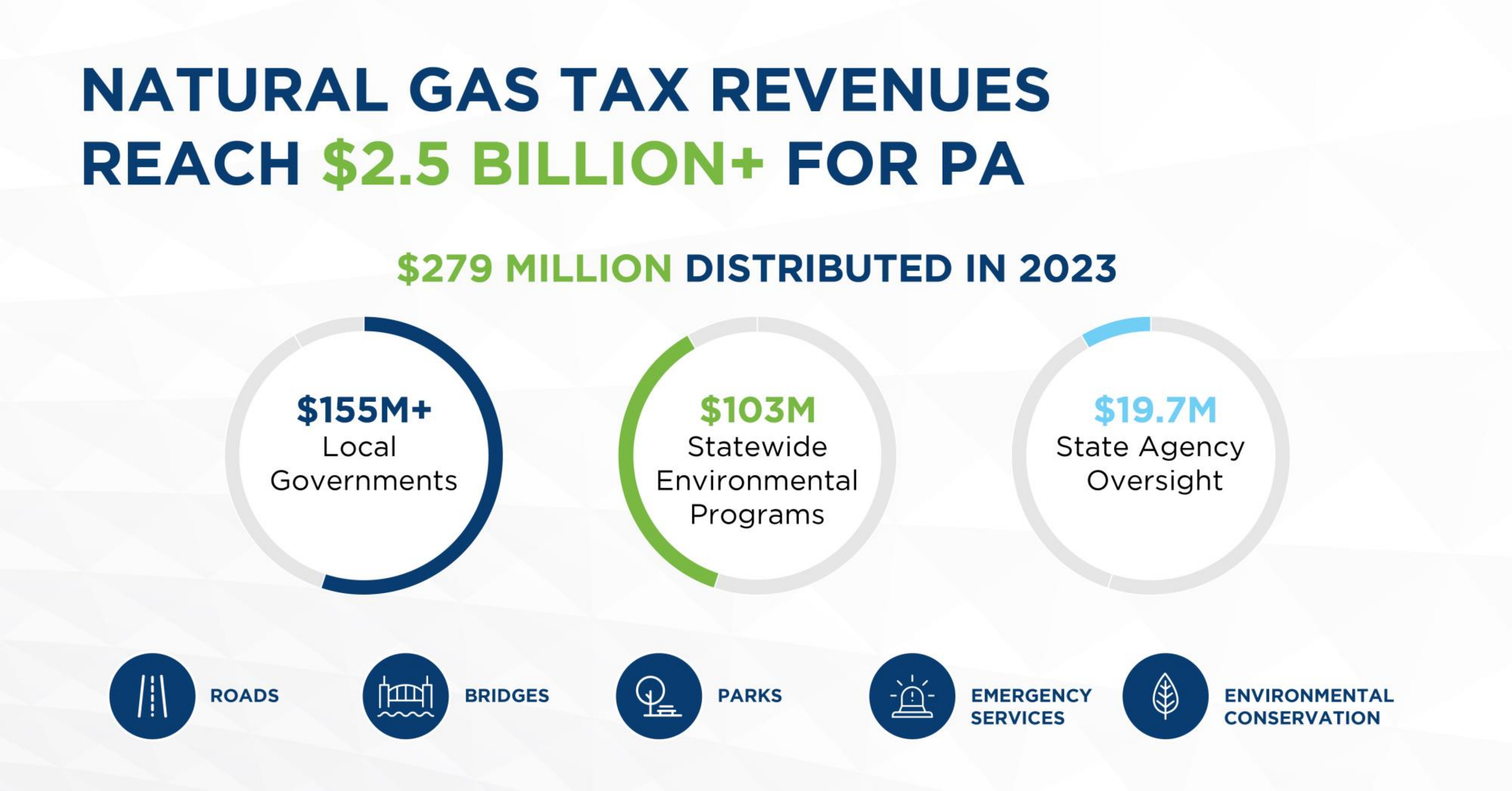
- Roads & Bridges
- Storm Water & Sewer
- Emergency Preparedness
- Environmental Programs
- Preservation & Wetland Reclamation
- Tax Reduction
- Affordable Housing
- Social Services
- Judicial Services
- Records Management
- Capital Reserve Fund
- Workforce Training
- Local, Regional Planning

$600+ Million
Supports Statewide Projects

$82M	Growing Greener
$164M	Marcellus Legacy Grants
$204M	Water & Sewer Infrastructure
$85M	County Conservation Districts
$72M	Pennsylvania Department of Environmental Protection

Pennsylvania's Natural Gas Impact Tax Works

Impact Fee


NATURAL GAS TAX REVENUES
REACH $2.5 BILLION+ FOR PA
$279 MILLION DISTRIBUTED IN 2023
$155M+
Local Governments
$103M
Statewide Environmental Programs
$19.7M
State Agency Oversight
ROADS
BRIDGES
PARKS
EMERGENCY SERVICES
ENVIRONMENTAL CONSERVATION

CONSUMER & ECONOMIC BENEFITS

Benefiting Consumers

Lower Prices = Customer Savings

- Wholesale electric prices generally stable since 2008
- Market transition through rate caps, fuel generation shift
- Natural gas prices for end-use customers down 35% - 86% compared to 2008 **
- Average annual natural gas savings > $388 - $1,082 per household

Lower Prices = Customer Savings
2008 vs 2023

Utility	PGC Rate / MCF		% Change	Annual Customer Savings**		
	2008*	2023*	2008-2020	Residential	Commercial	Industrial
PECO	$13.16	$5.74	-56%	$623	$3,873	$12,985
NFG	$10.86	$7.02	-35%	$388	$1,110	$7,484
PGW	$13.02	$3.55	-73%	$634	$3,400	$9,678
Columbia	$15.94	$6.63	-58%	$754	$3,221	$27,930
UGI	$13.26	$7.52	-43%	$471	$2,043	$7,296
Peoples/Equitable	$15.89	$2.15	-86%	$1,182	$3,586	$65,512

* PUC Purchased Gas Cost (PGC) Rate in Effect Prior to Annual Review

** Based on average customer usage for each utility as reported in PA PUC Natural Gas Outlook 2023

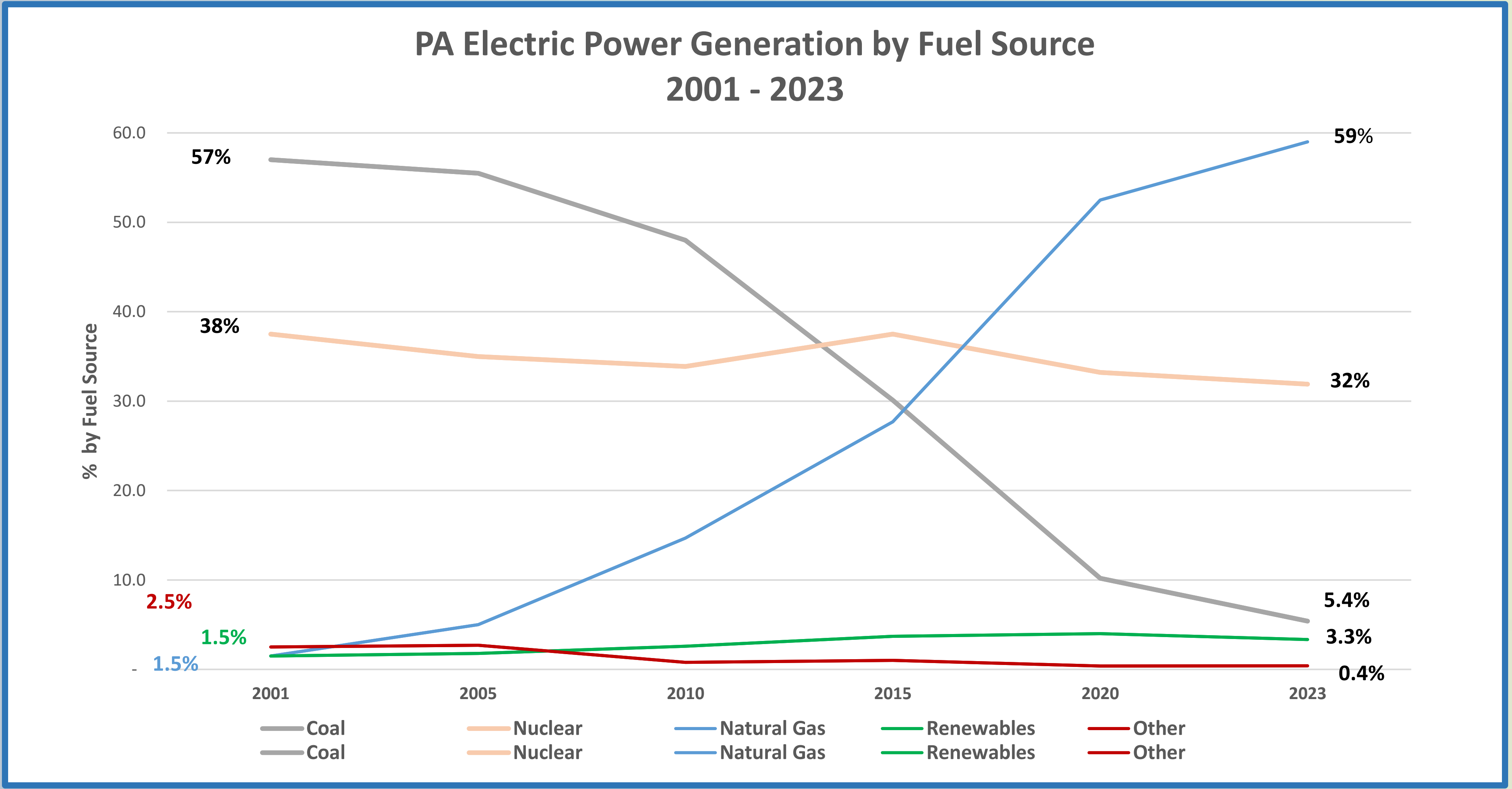
Benefiting Consumers

$8,963,221,586

PA Natural Gas Consumer Savings in 2023 compared to 2008 prices

Based on average customer usage for each PA utility as reported in PA PUC Natural Gas Outlook 2023.
Savings adjusted to reflect inflation 2008-2023 (Bureau of Labor Statistics)

PA's Changing Energy Landscape

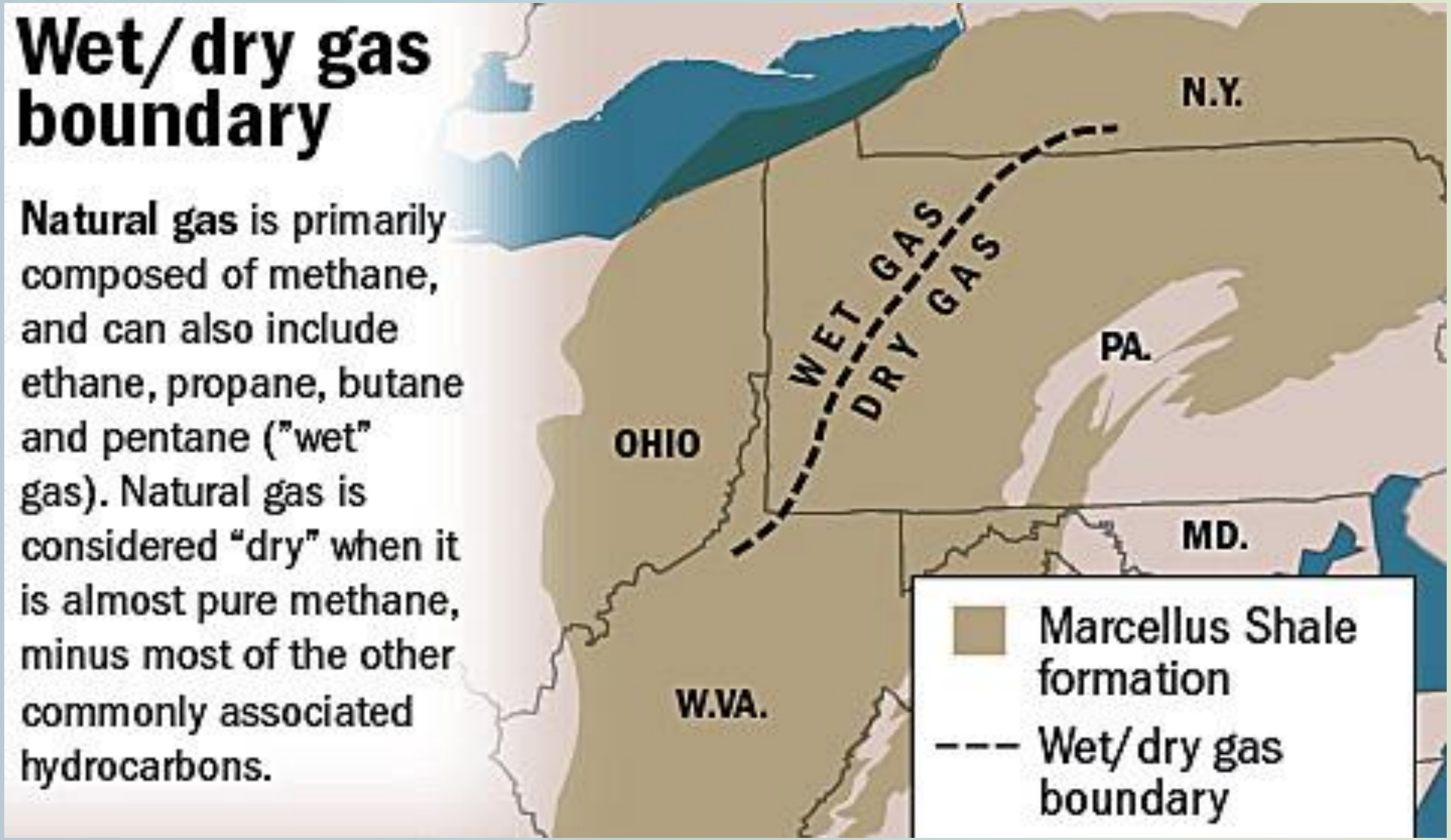


Source: U.S. Energy Information Administration – Electricity Data Browser

NATURAL GAS LIQUIDS

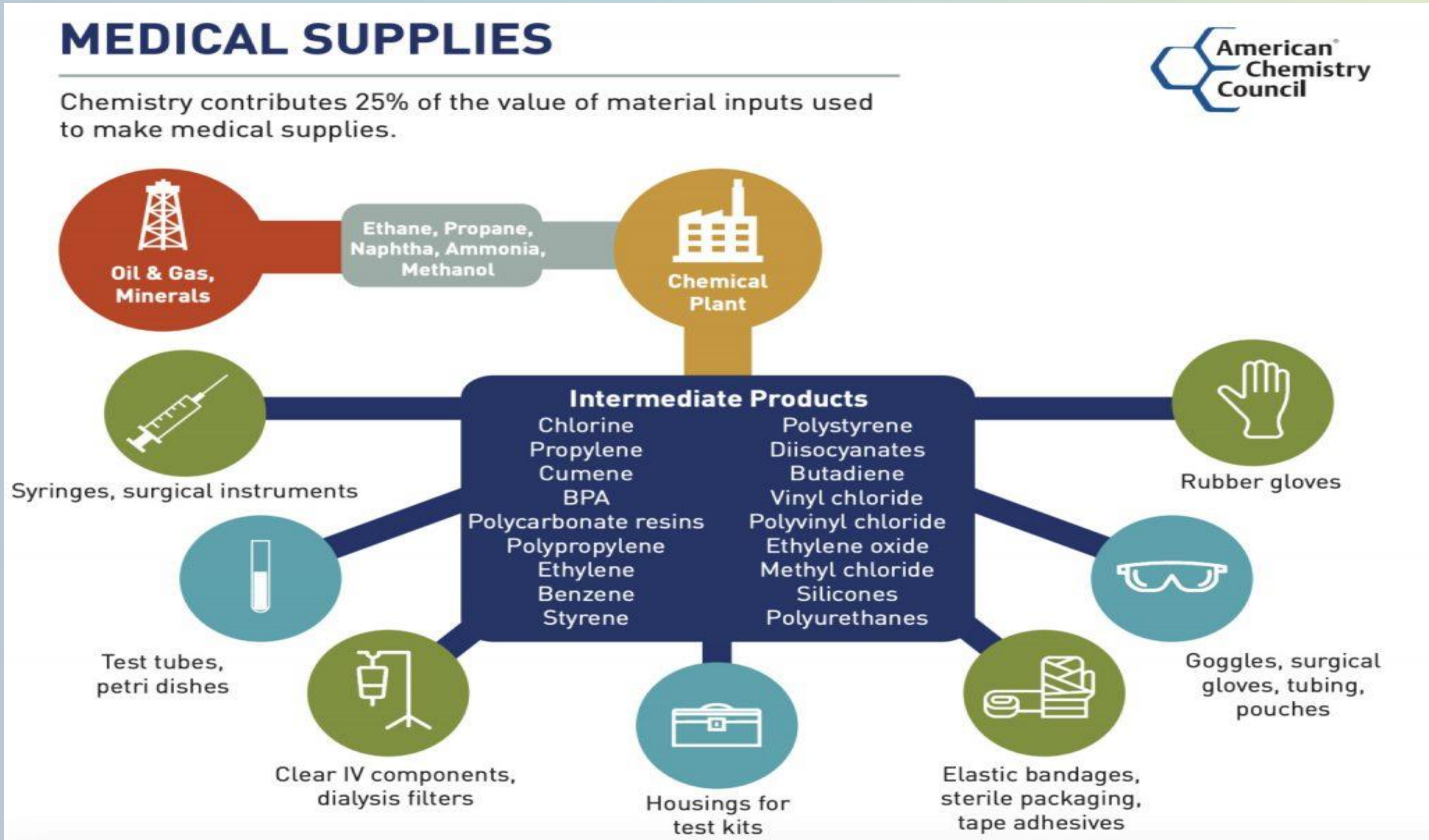
Shale Gas in PA

MARCELLUS SHALE COALITION®



Source: Penn State University Extension

Natural Gas Liquids: Feedstock of Our Economy



COVID Vaccines

- **Refrigeration** – Various chemicals captured as byproduct from butane production to meet extreme temperature storage standards
- **Vaccine administration**: Syringes, vaccine vials, masks, gloves, face shields, anti-septic, band-aids
- **Vaccines**: Both Moderna & Pfizer's vaccine contain polyethylene glycol derived from natural gas liquids

- **Transportation:** Truck fuel to distribution sites
- **Dry ice:** CO2 captured during petroleum refinement used for long-haul transport
- **Health facilities:** heating, cooling & electrical power

Fueling Manufacturing

- **$208 Billion Chemical Industry Investment Tied to Shale Gas**
  - $109 Billion (completed projects)
  - $31 Billion (under construction)
  - $68 Billion (planning phase)
- **351 Total Projects**
  - 786,000 total jobs
  - $61.1 Billion payroll
  - $309.5 Billion economic output

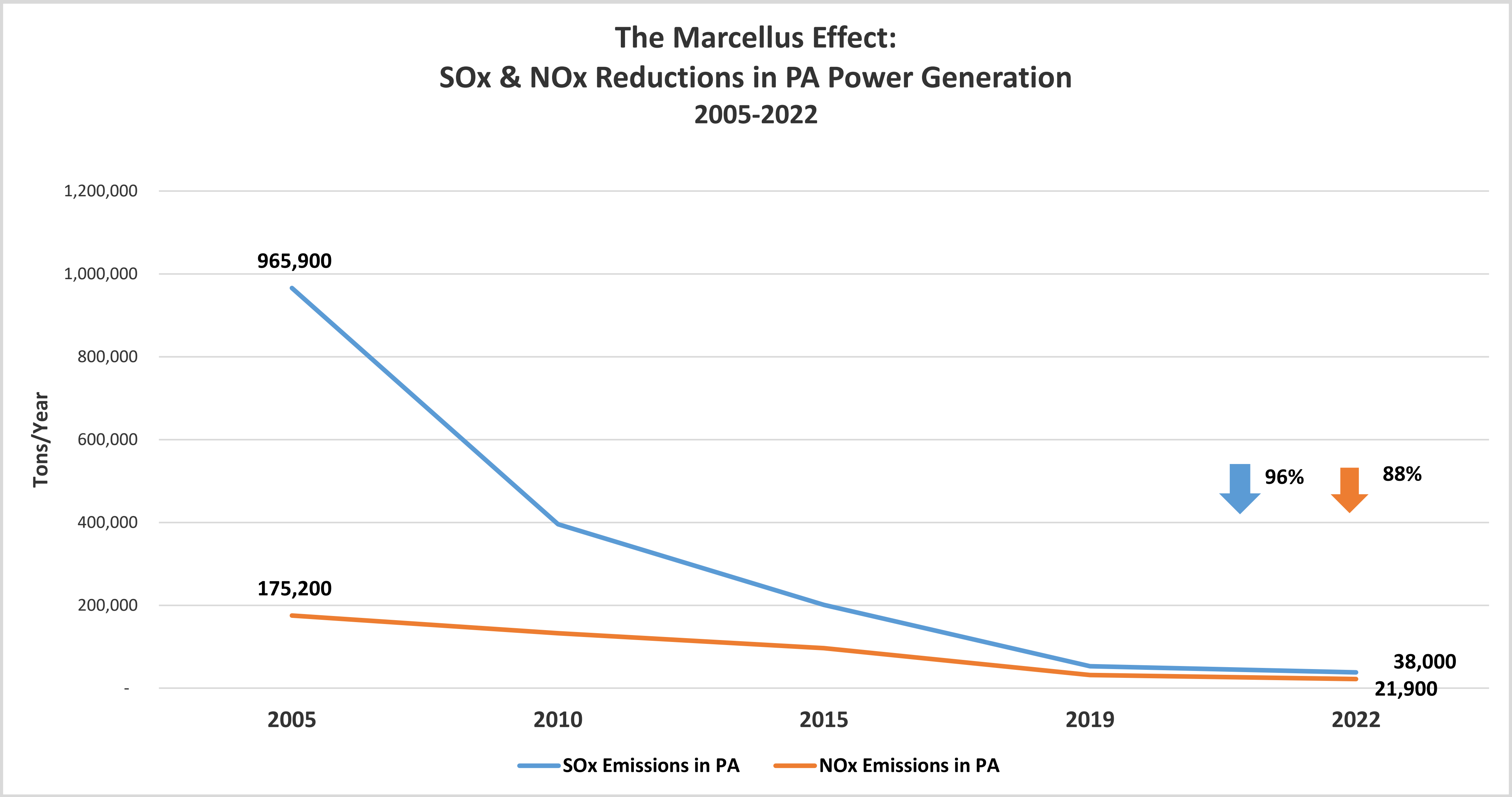
Source: American Chemistry Council. Economic contributions tied to higher chemical industry output 2010 – 2030.

"Thanks to this versatile resource, American chemistry has experienced more than a decade of growth. Our new investment boosts employment, payrolls, and tax revenue in local communities and nationwide."

Chris Jahn, President & CEO, ACC

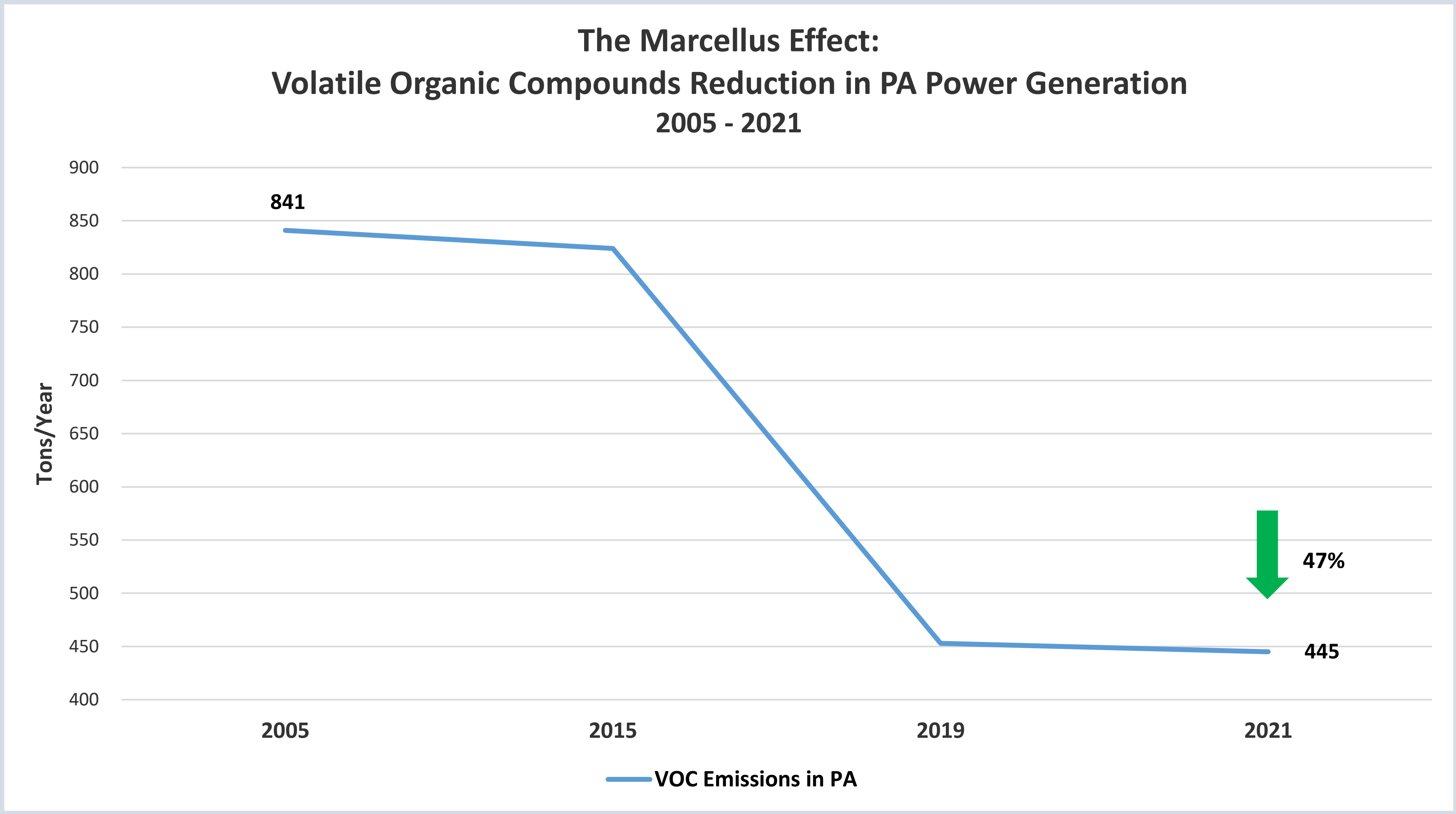
ENHANCING AIR QUALITY

Enhancing Air Quality



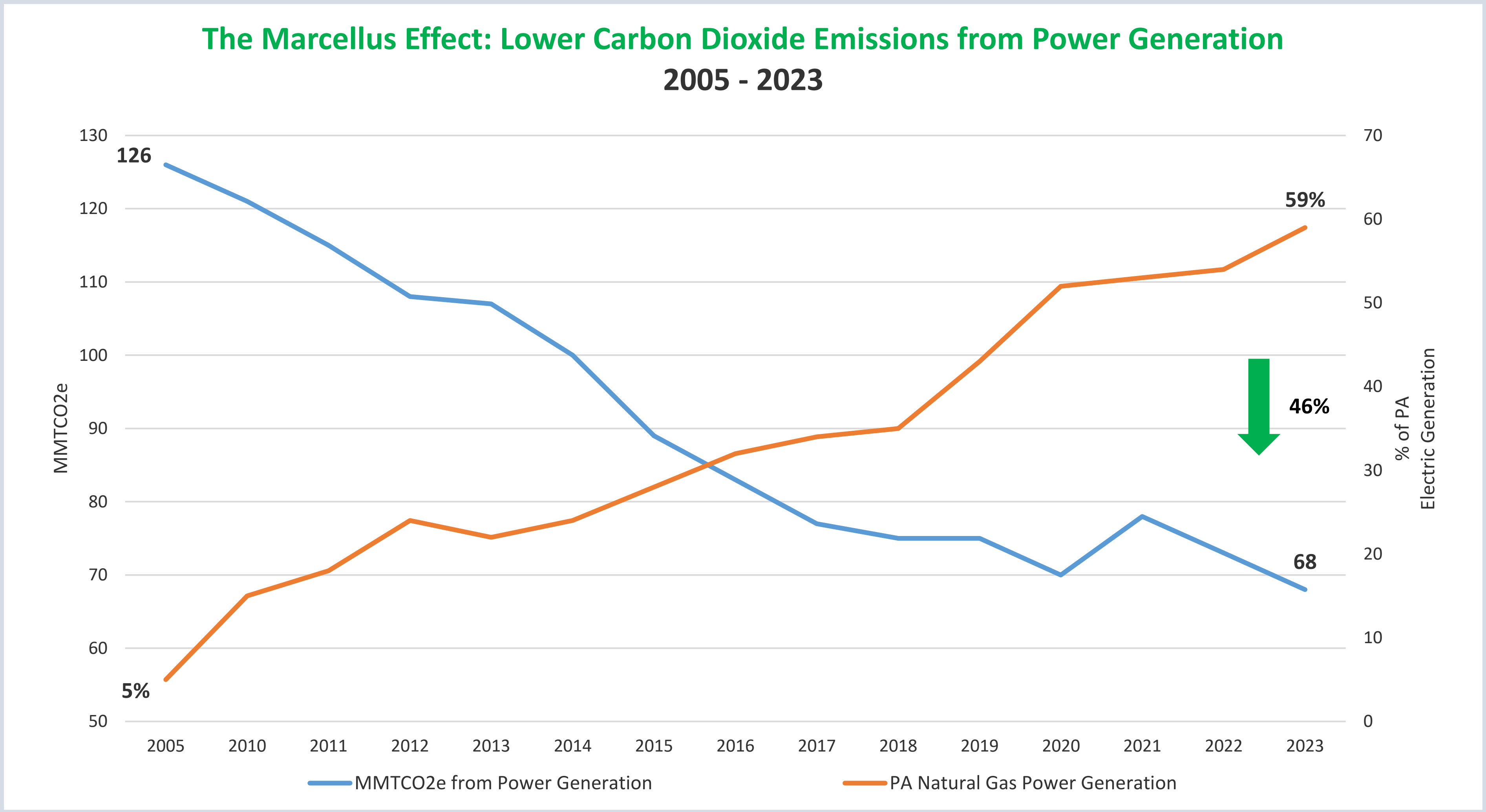
Source: PA Department of Environmental Protection – Air Emission Report (Power BI) – Accessed April 2024

Enhancing Air Quality



Source: PA Department of Environmental Protection – Air Emission Report (Power BI) – Accessed April 2024

Leading on Climate Change



Source: U.S. Energy Information Administration; PA IFO

Enhancing Air Quality

Environmental Benefits are Undeniable

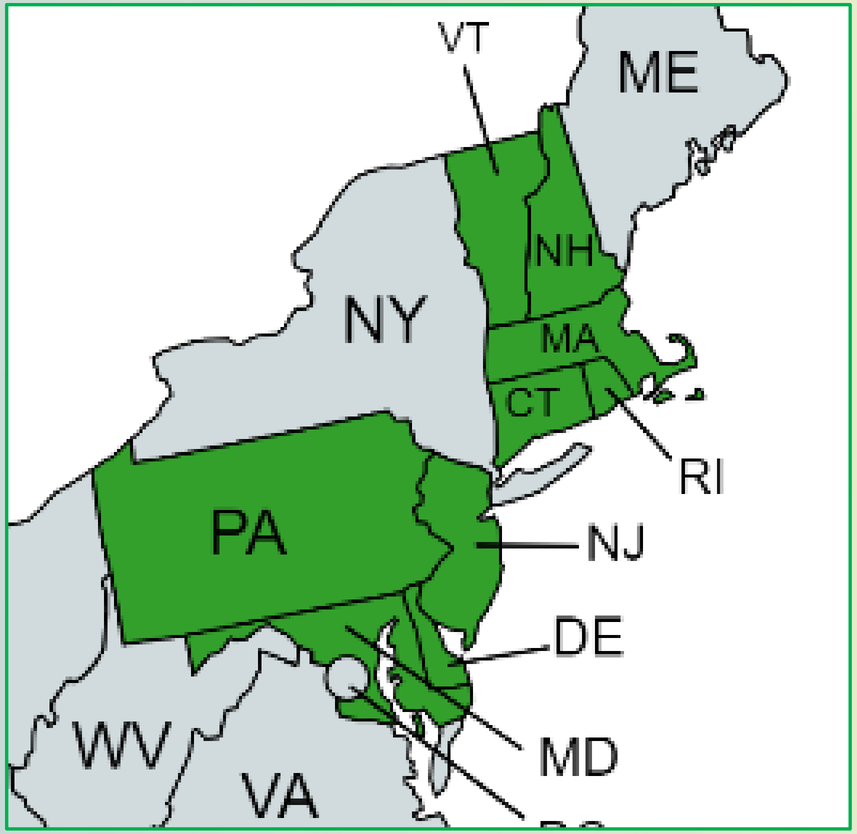
Since 2005…

- VOCs *down 47%*
- NOx *down 88%*
- SOx *down 96%*
- CO_2 *down 46%*

Reductions from PA Electric Power Generation Sector

Enhancing the Environment…Now and in the Future

- Thanks to natural gas electric generation, PA emitted 58 million metric tons fewer of CO_2 in 2023 compared to 2005.
- This is equivalent to removing **12.5 Million** cars from the road for a year.
- Or – removing every car in PA, CT, DE, MA, MD, NH, NJ, RI & VT – *combined*



Enhancing the Environment…Enhances Public Health

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Since 2005

- Natural gas electric generation has increased from 5% to 59% of all PA generation.
- As a result, **nitrogen oxide emissions** are **down 81%** (1,317,000 *fewer* tons emitted) and **sulfur oxide emissions** are **down 93%** (11,126,000 *fewer* tons emitted) from the PA electric generation sector.
- These emission reductions equate to public health benefits of between **$450 Billion - $1.04 Trillion** for Pennsylvania residents.

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