MARCELLUS SHALE COALITION®

INDUSTRY…AT A GLANCE

February 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.
- Nearly 11,400 producing wells
- 7.45 Trillion Cubic Feet (2022)
- 20.5% of total U.S. natural gas production
- 36 of 67 counties with at least 1 producing well

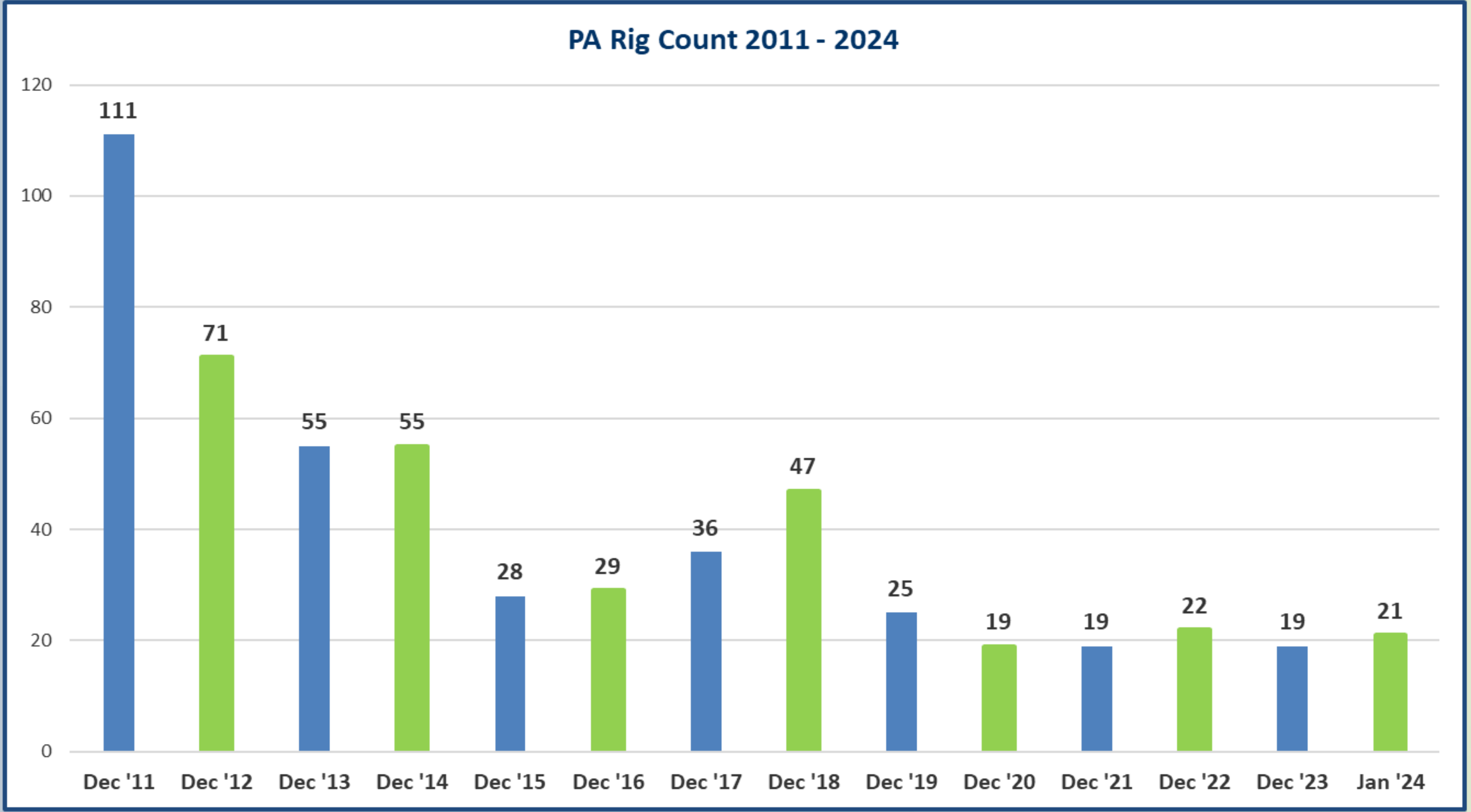
Drilling Activity in PA

- 12,923 unconventional wells*
- 11,370 unconventional wells producing natural gas
- 3,912 unconventional well pads
- 20+ billion cubic feet/day
  - 7.45 trillion+ cubic feet/year
  - 32% of total U.S. shale gas production

Drilling rig in Potter County, PA

* October 2023 (most recent data available)

Drilling Activity in PA



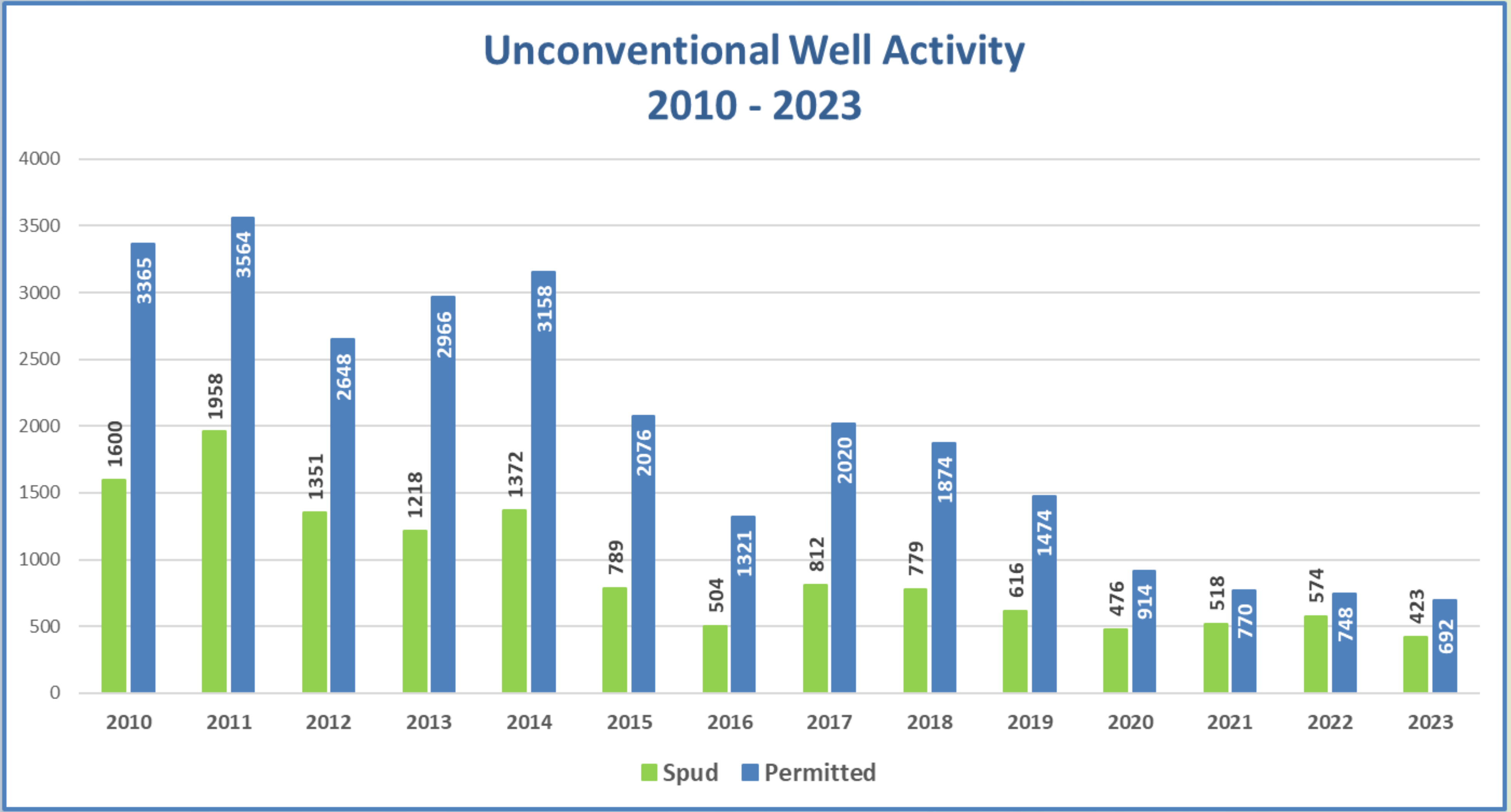
Drilling Activity in PA

Keep in Mind…

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

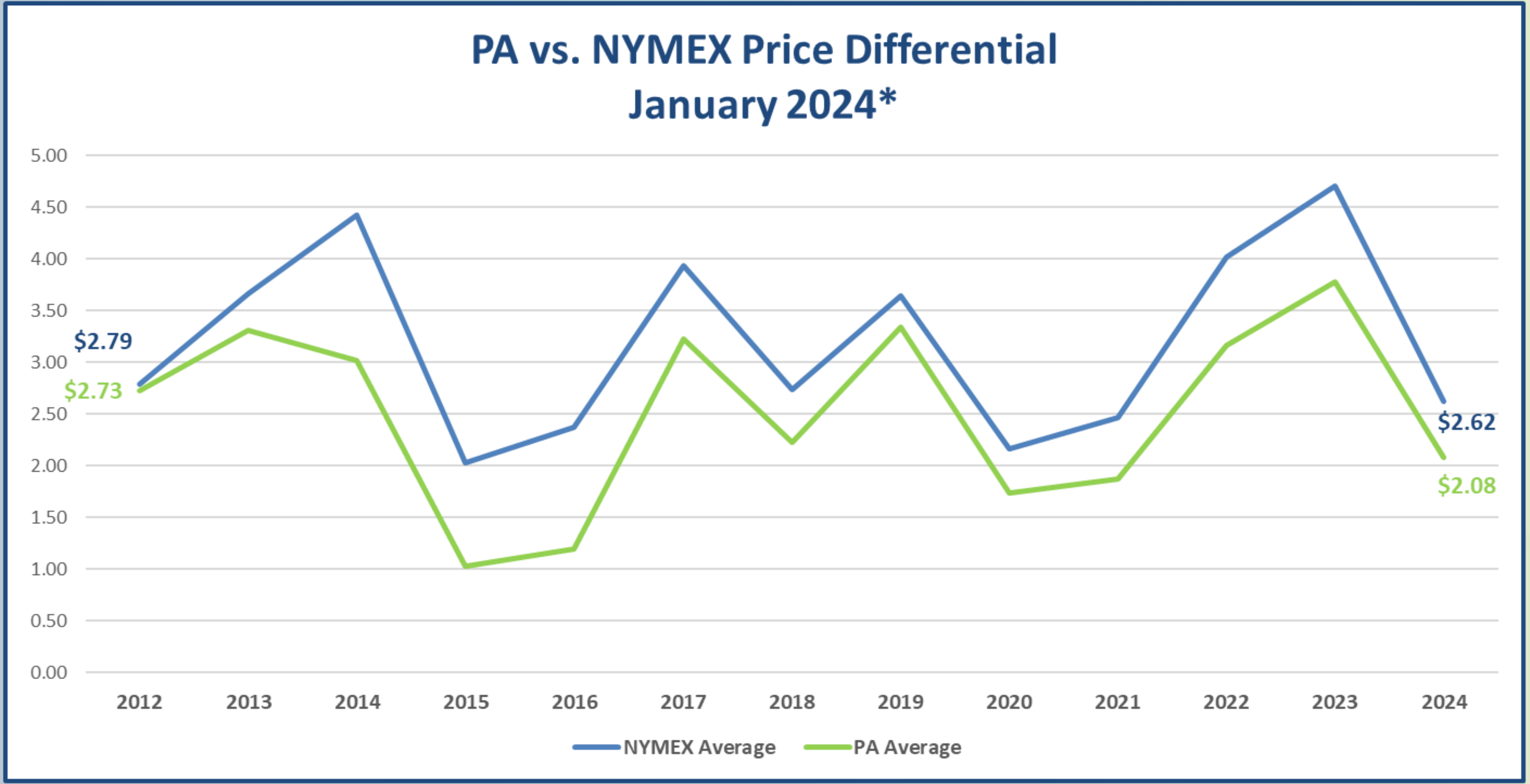
- But still *an* indicator:
  - Oil v Gas
  - Wet v Dry
  - Basin v Basin

Drilling Activity in PA



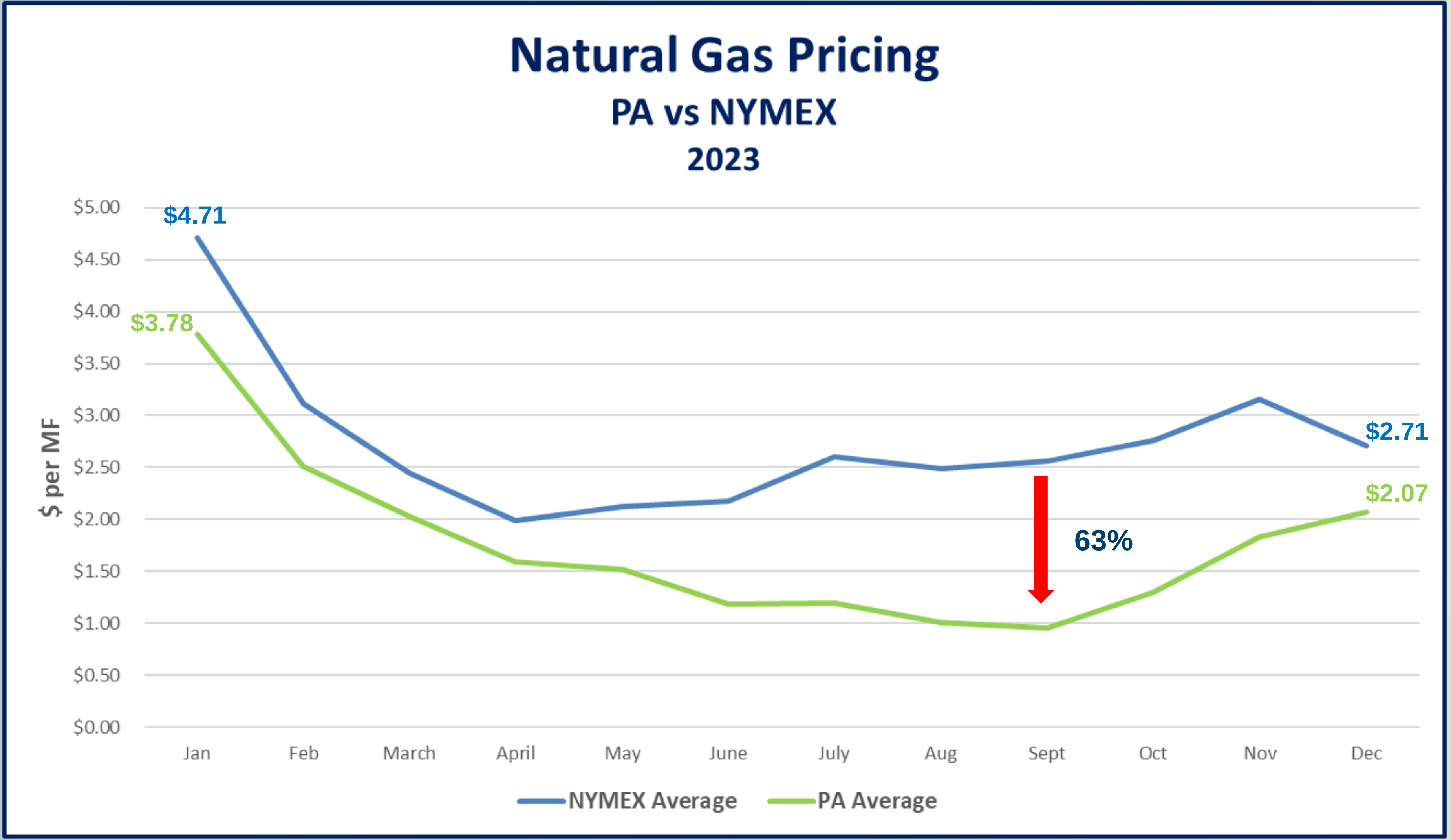
PRICING

PA Price Differential



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

PA Price Differential



NATURAL GAS PRODUCTION

Fueling the Nation

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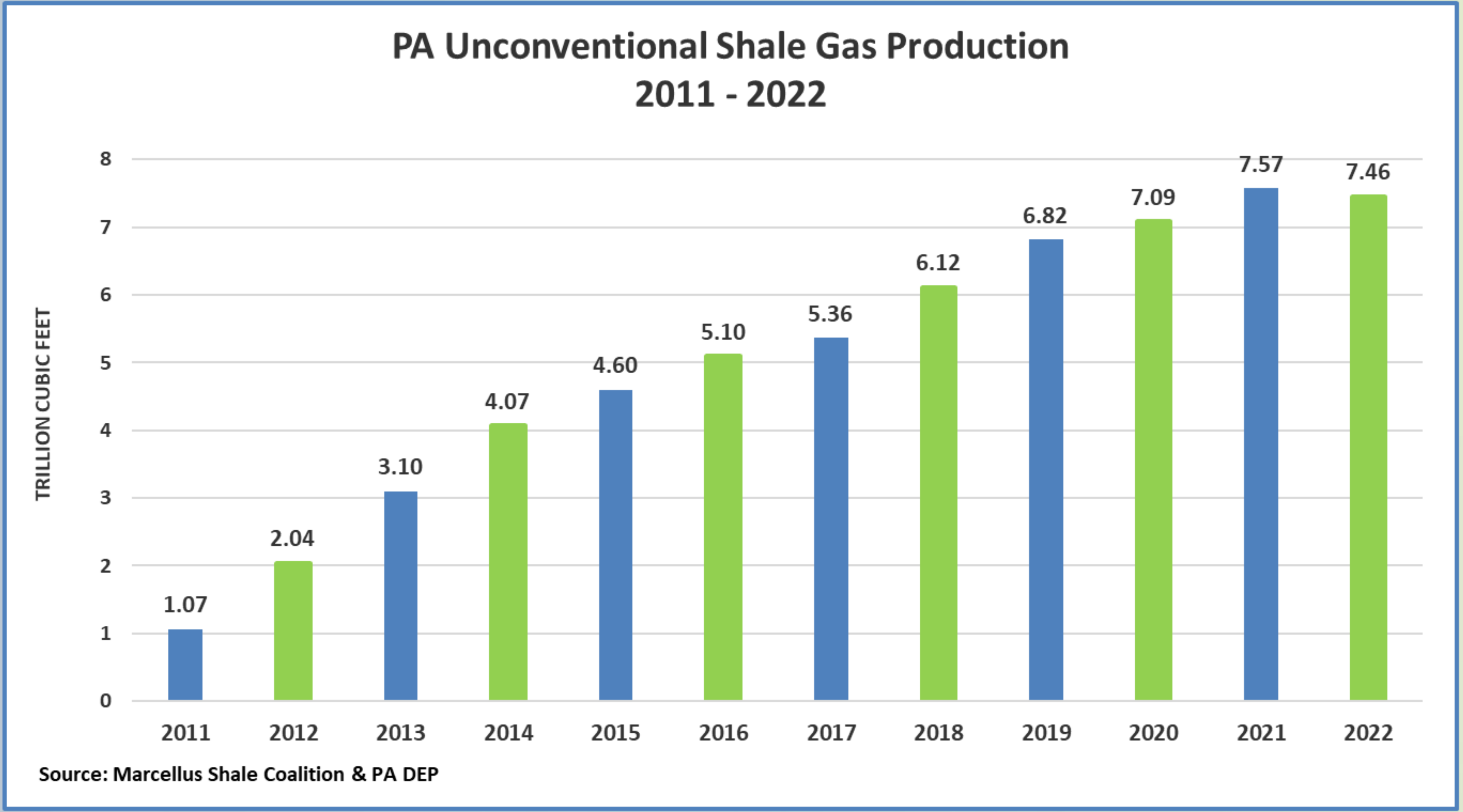
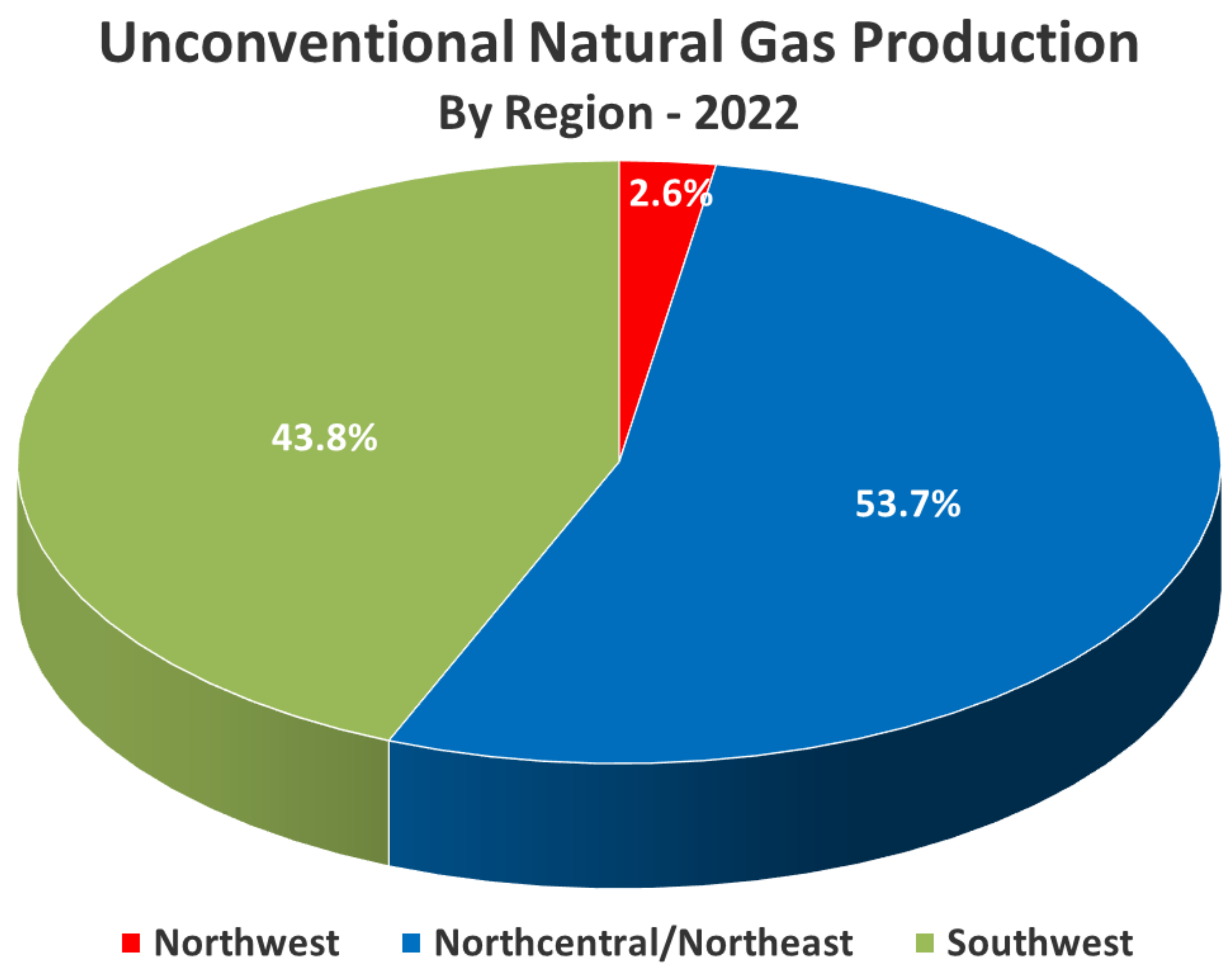


Top Ten Producing Counties by Volume (2022)

County	Production (MCF)	% of PA Production	# of Producing Wells
Susquehanna	1,557,148,711.42	20.6%	1827
Washington	1,322,565,554.02	17.5%	1842
Bradford	1,116,904,466.48	14.8%	1414
Greene	1,084,676,878.68	14.3%	1334
Lycoming	429,376,623.98	5.7%	925
Tioga	345,581,866.54	4.6%	781
Wyoming	338,924,455.91	4.5%	315
Butler	254,418,779.89	3.4%	587
Sullivan	167,779,752.24	2.2%	113
Allegheny	153,700,001.81	2.0%	166


Unconventional Natural Gas Production
By Region - 2022
2.6%
43.8%
53.7%
Northwest
Northcentral/Northeast
Southwest

MOVING GAS TO MARKET

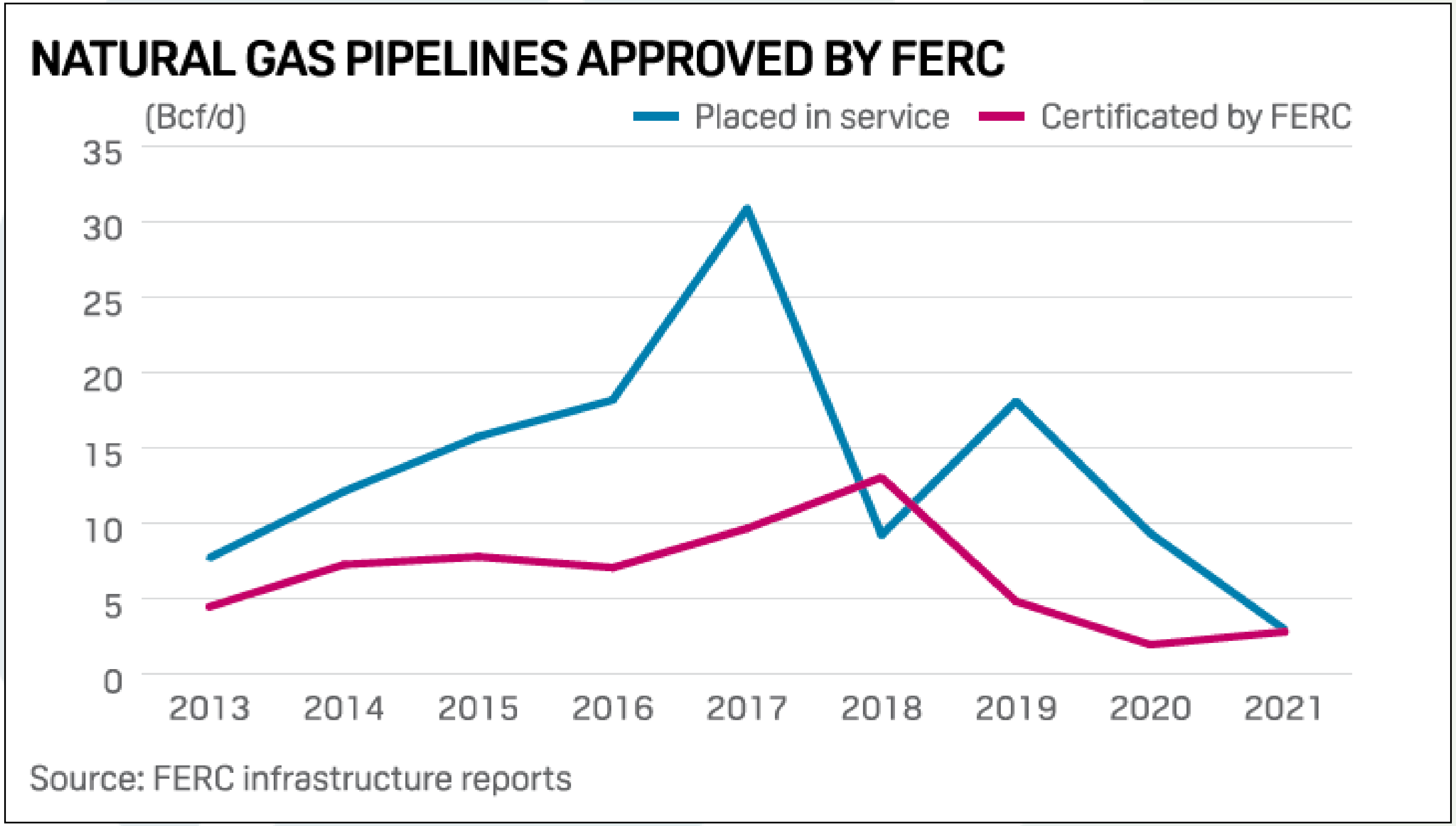
Moving Gas to Market

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

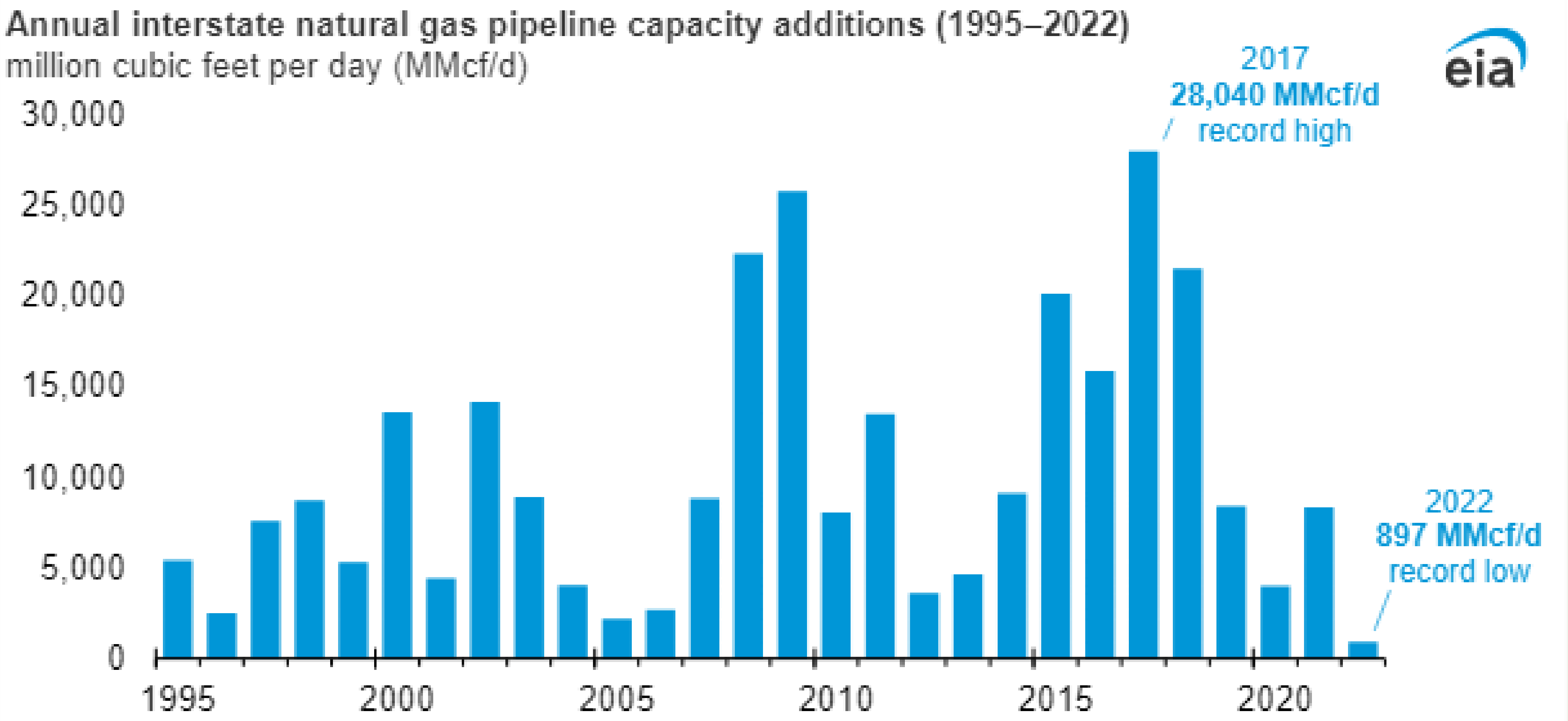
Source: GENSCAPE – Wood Mackenzie Nov. 2019

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

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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

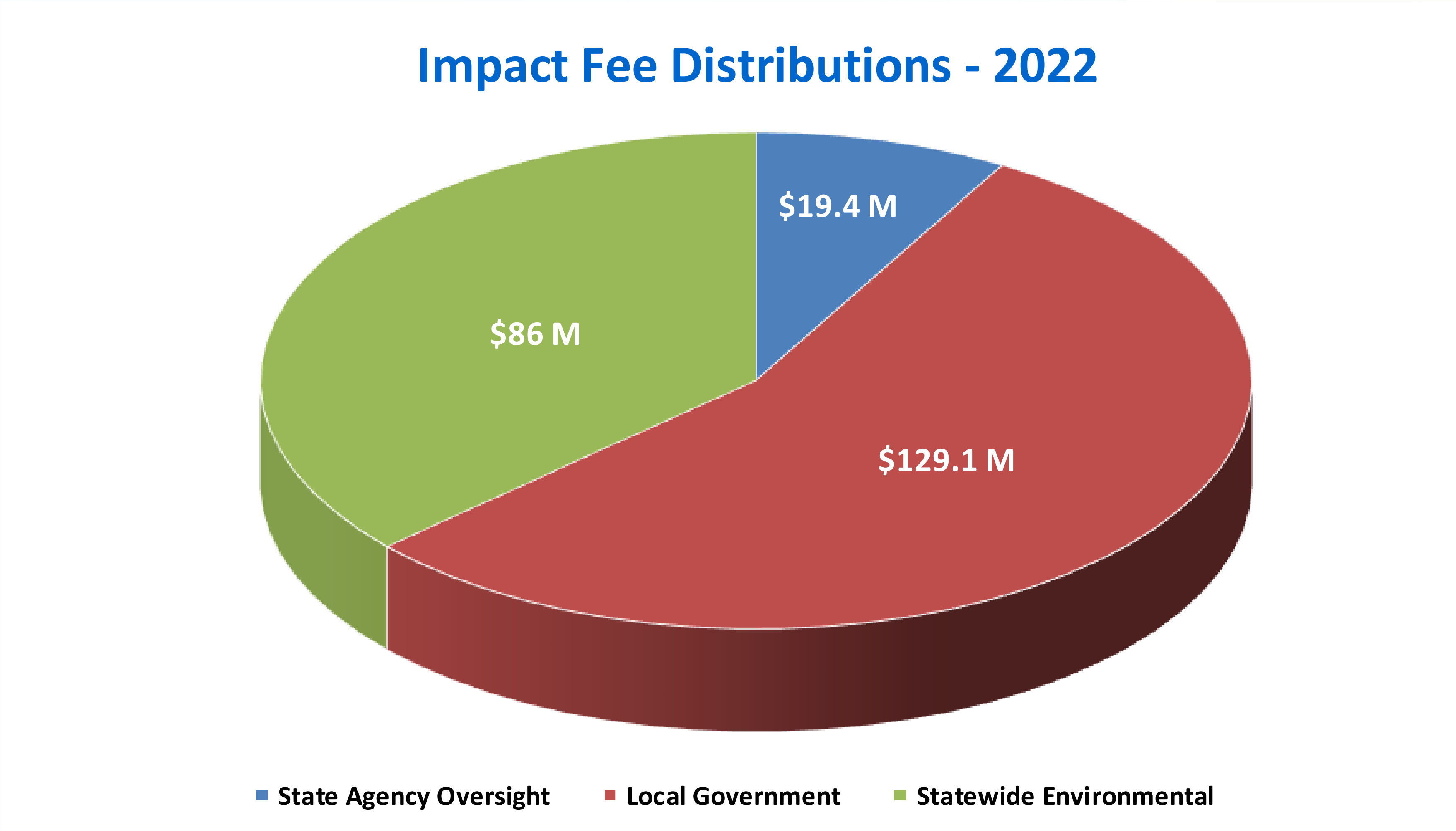
PA'S SEVERANCE TAX:

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

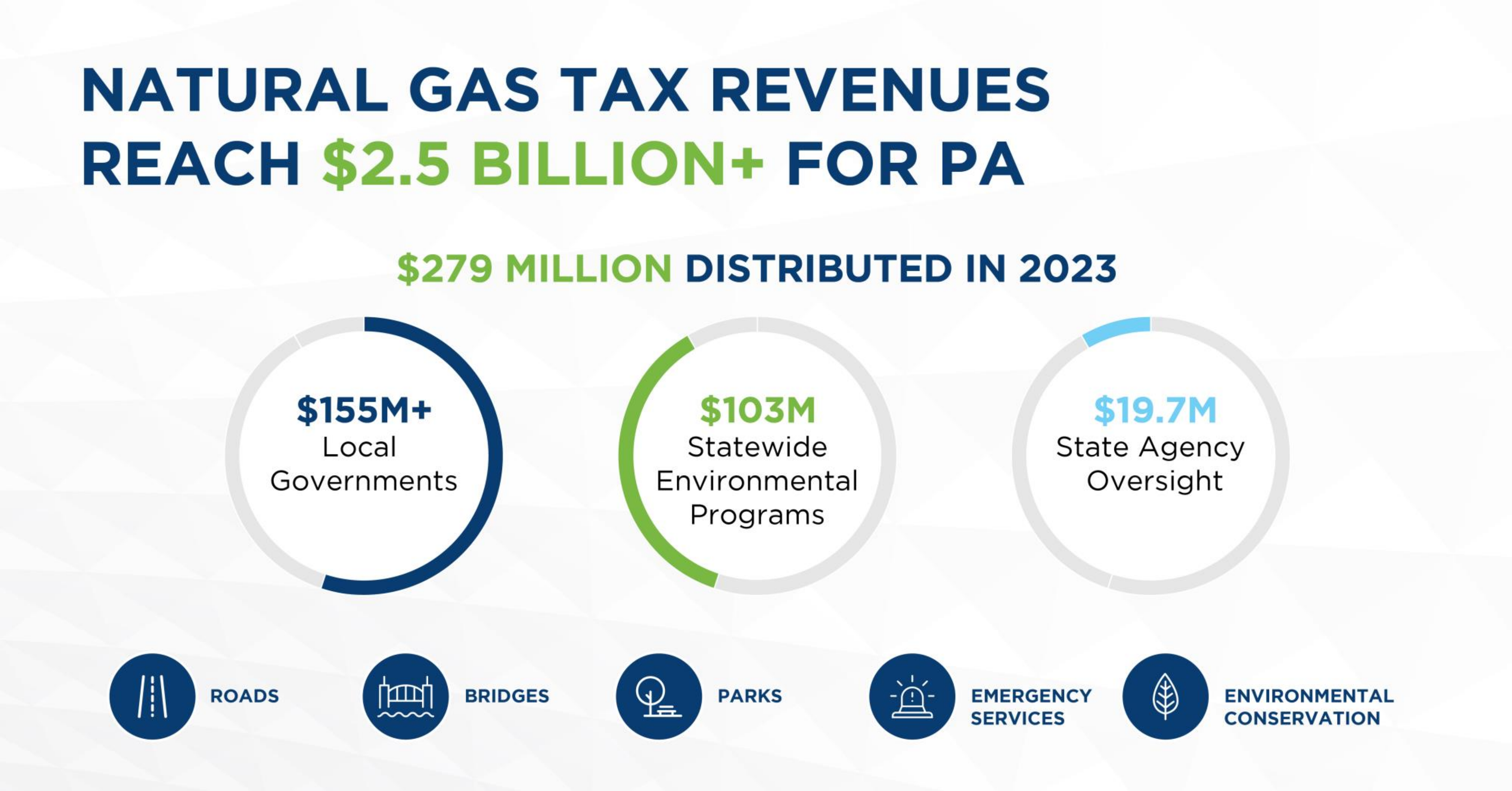
$600+ Million

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 down more than 40% (‘08 – ’17)*
- Natural gas prices for end-use customers down 56% - 76% since 2008 **
- Average annual savings > $1,100 - $2,200 per household

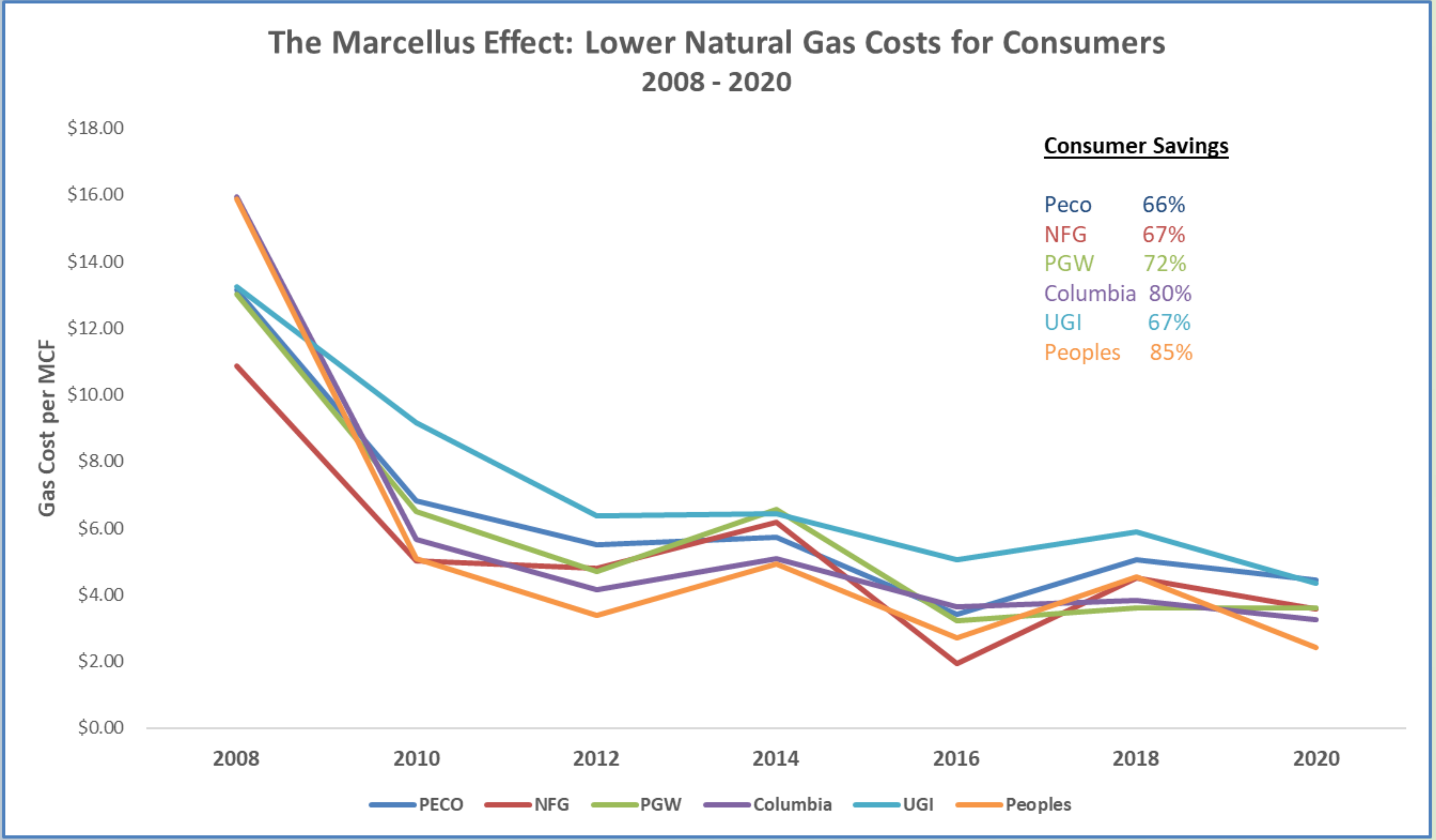
Lower Prices = Customer Savings
2008 - 2021

Utility	PGC Rate / MCF		% Change	Customer Savings**
	2008*	2020*	2008-2020	Annual
PECO	$13.16	$4.02	-69%	**$1,645**
NFG	$10.86	$3.85	-65%	**$1,262**
PGW	$13.02	$3.57	-73%	**$1,701**
Columbia	$15.94	$3.85	-76%	**$2,176**
UGI	$13.26	$5.13	-61%	**$1,463**
Peoples/Equitable	$15.89	$4.02	-75%	**$2,137**

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

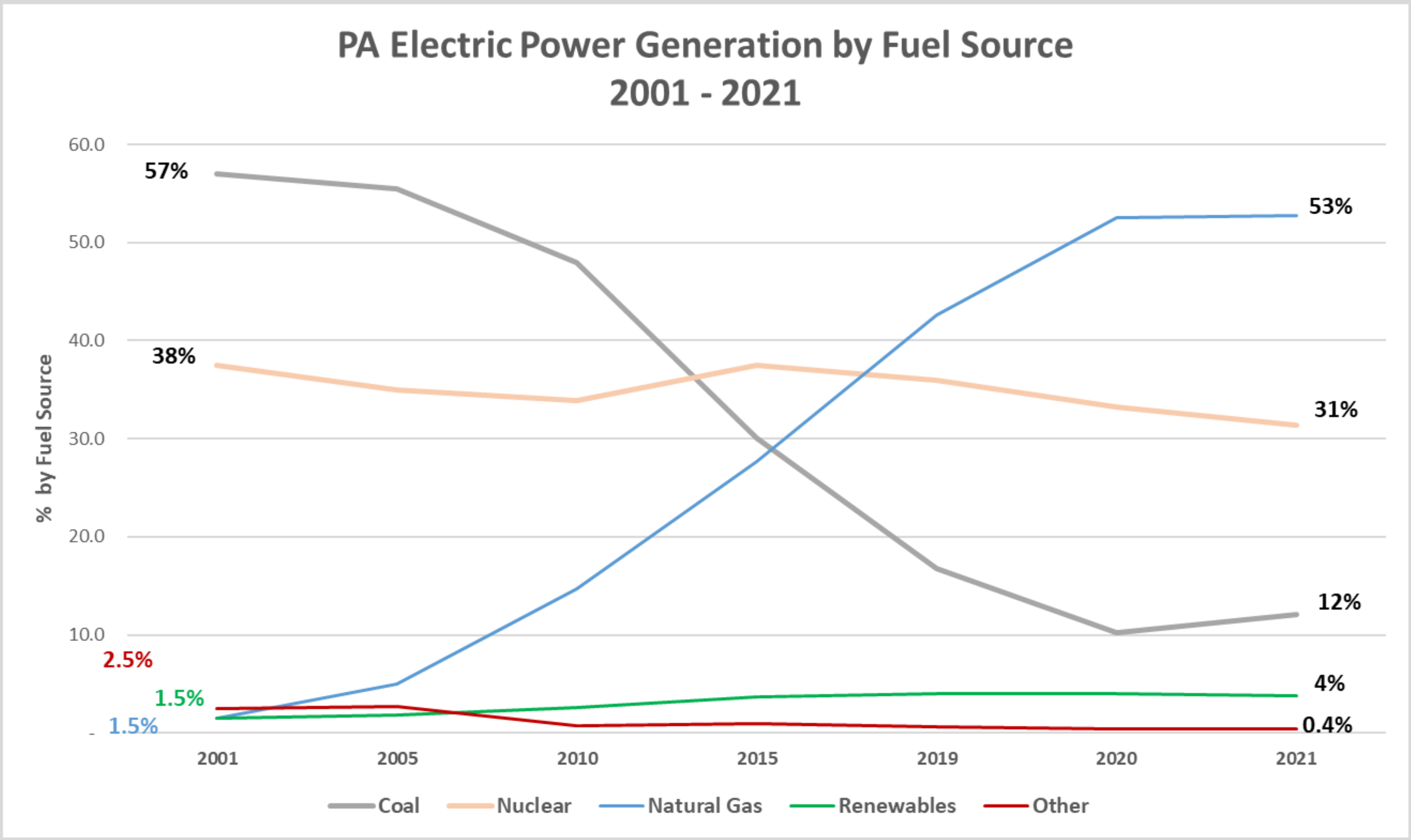
**** Residential heating customer using 15 MCF/month**

Benefiting Consumers



Source: PA PUC Purchased Gas Cost by Utility

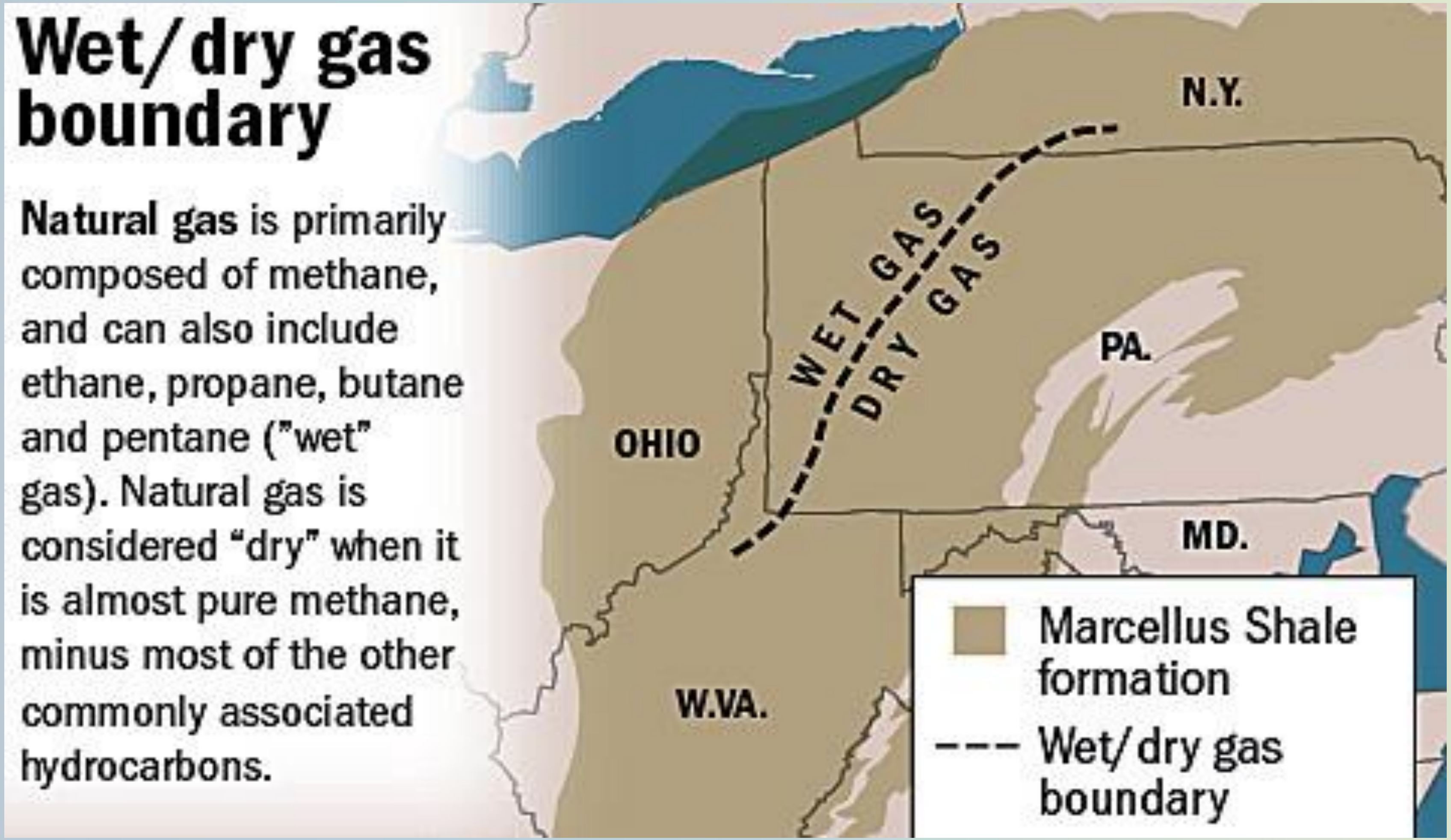
PA's Changing Energy Landscape



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

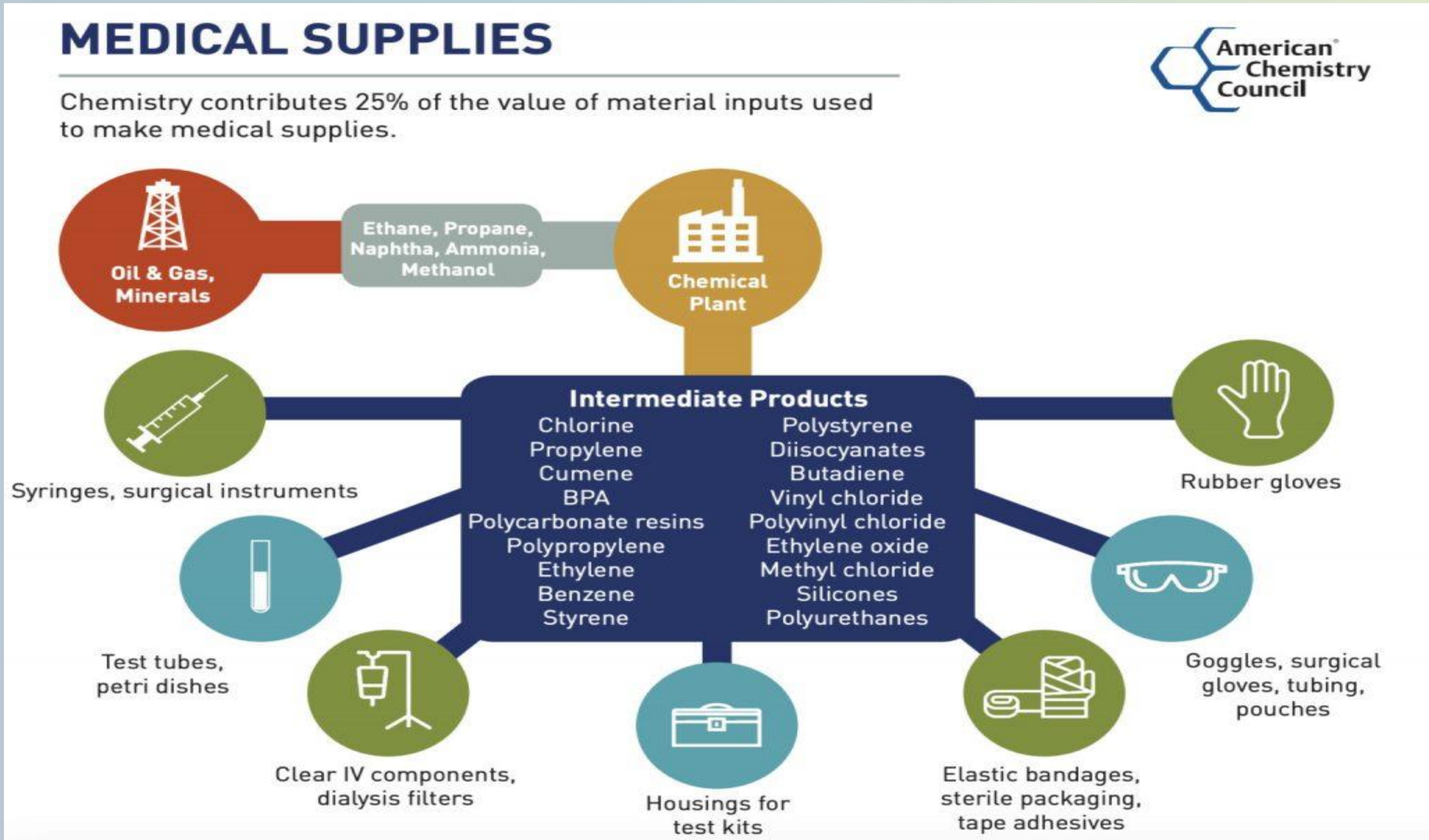
NATURAL GAS LIQUIDS

Shale Gas in PA



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:** CO_2 captured during petroleum refinement used for long-haul transport
- **Health facilities:** heating, cooling & electrical power

Fueling Manufacturing

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- **$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

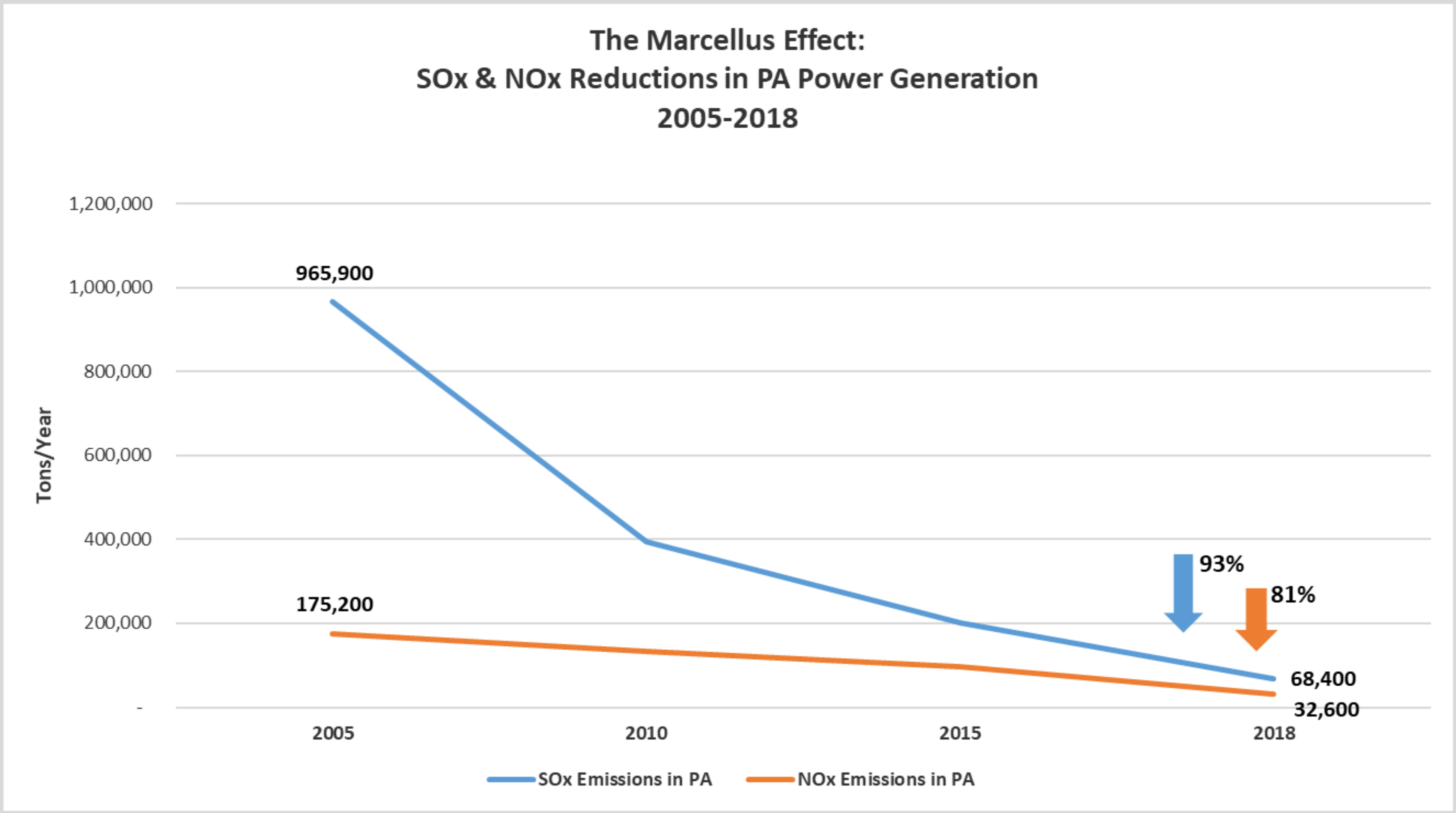
Source: American Chemistry Council. Economic contributions tied to higher chemical industry output 2010 – 2030.

"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

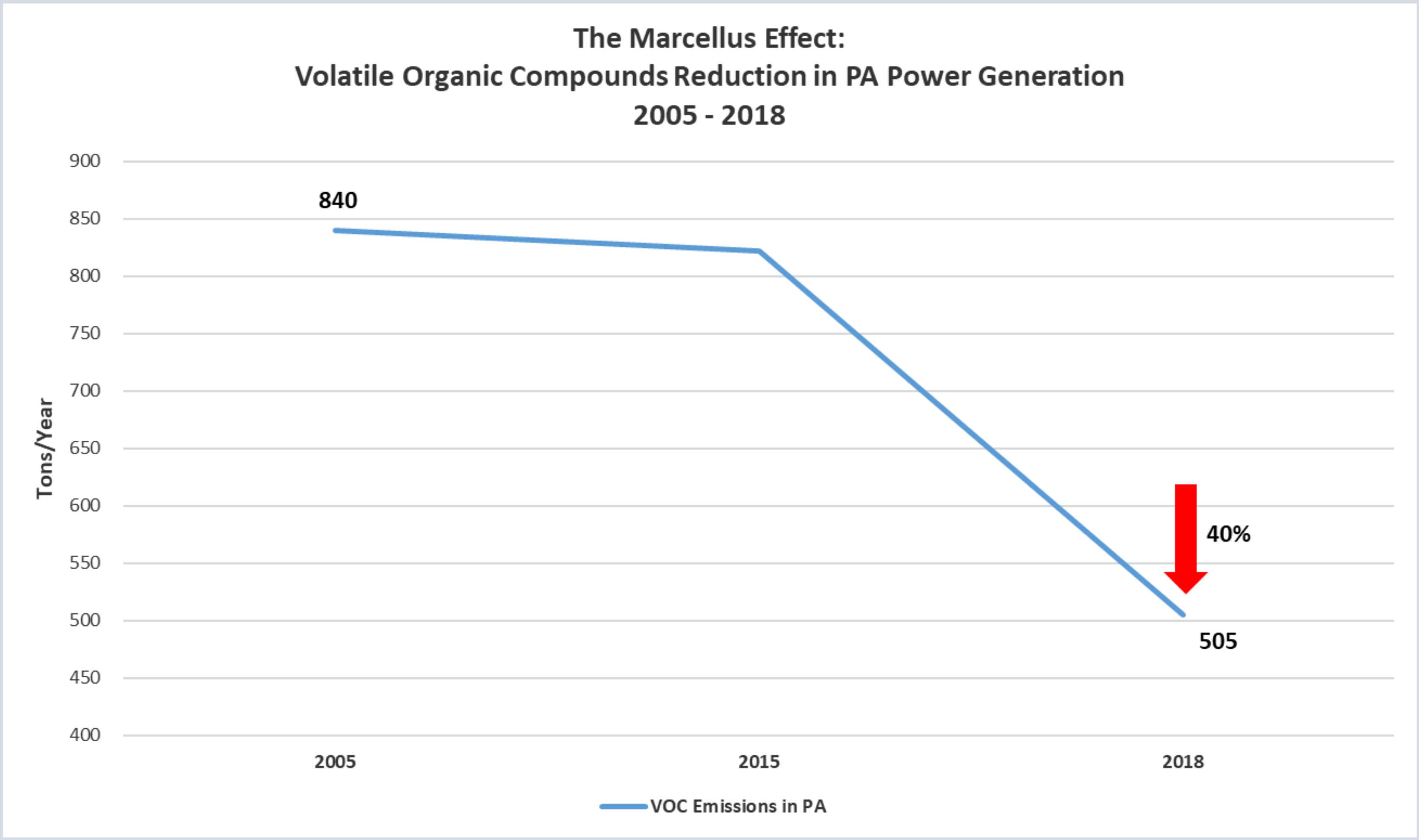
ENHANCING AIR QUALITY

Enhancing Air Quality



Source: PA Department of Environmental Protection – Air Emission Report (Power BI) – Accessed July 2020

Enhancing Air Quality



Source: PA Department of Environmental Protection – Air Emission Report (Power BI) – Accessed July 2020

Leading on Climate Change

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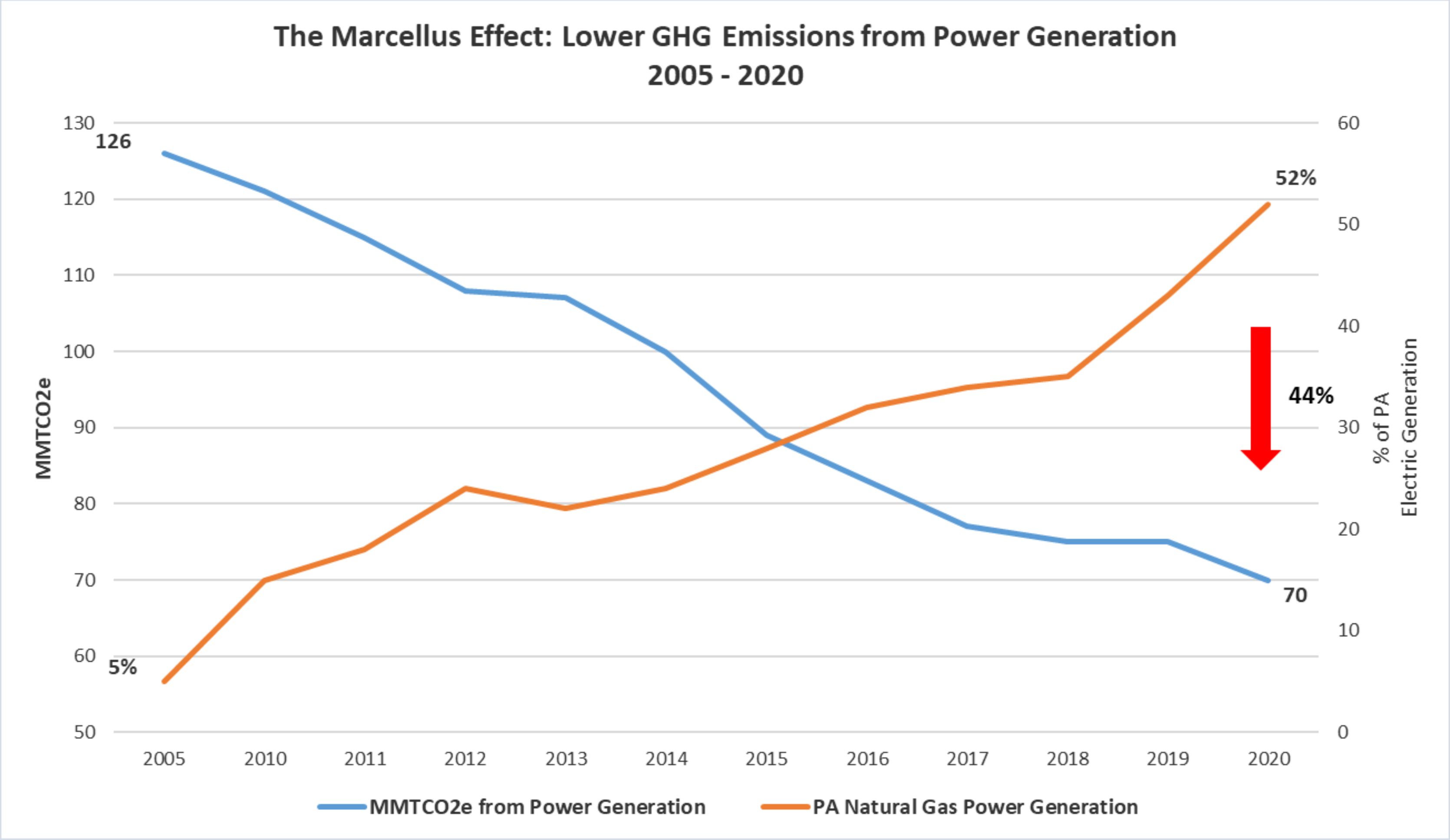

Source: U.S. Energy Information Administration

Enhancing Air Quality

Environmental Benefits are Undeniable

Since 2005…

- VOCs *down 40%*
- NOx *down 81%*
- SOx *down 93%*
- CO_2 *down 41%*

Reductions from PA Electric Power Generation Sector

Marcellus Shale Coalition Contacts:

Jim Welty, VP of Government Affairs

jwelty@marcelluscoalition.org

Patrick Henderson, Director of Government Affairs

phenderson@marcelluscoalition.org