

OCTOBER 2019

ANSWERING AMERICA

QUESTION 4: SHOULD WASHINGTON
DO MORE TO SAVE COAL?

**THE BUSINESS CASE
AGAINST TRUMP'S AGENDA**



BUSINESSFORWARD
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QUESTION 4: SHOULD WASHINGTON DO MORE TO SAVE COAL?

ANSWER: NO.

**TAXPAYERS ALREADY SPEND BILLIONS OF DOLLARS EACH YEAR
SUBSIDIZING COAL COMPANIES. AUTOMATION, SURFACE MINING,
AND NATURAL GAS ARE THE REAL THREAT TO THE COAL INDUSTRY.**



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1

Coal subsidies total \$4 billion per year, or about \$75,000 for every coal job in the U.S.

2

Automation has been killing coal jobs since the '50s, just as it has been in many other industries.

3

Surface mining started eliminating coal jobs in the '90s, because it's cheaper than underground mining and requires fewer miners.

4

Natural gas started replacing coal about 10 years ago, because it's cheaper and cleaner, which means coal jobs in West Virginia are turning into gas jobs in Pennsylvania.

5

For Iowa, Michigan, Ohio, and Wisconsin, switching from fossil fuels to renewables could generate \$58 billion in local investment and jobs.

6

Doubling down on coal for jobs doesn't make sense today. With renewables generating nearly two-thirds of global energy by 2050, relying on coal makes even less sense for tomorrow.

“

Obama's war on coal is killing American jobs, making us more energy dependent on our enemies and creating a great business disadvantage.¹

”

- PRESIDENT DONALD TRUMP



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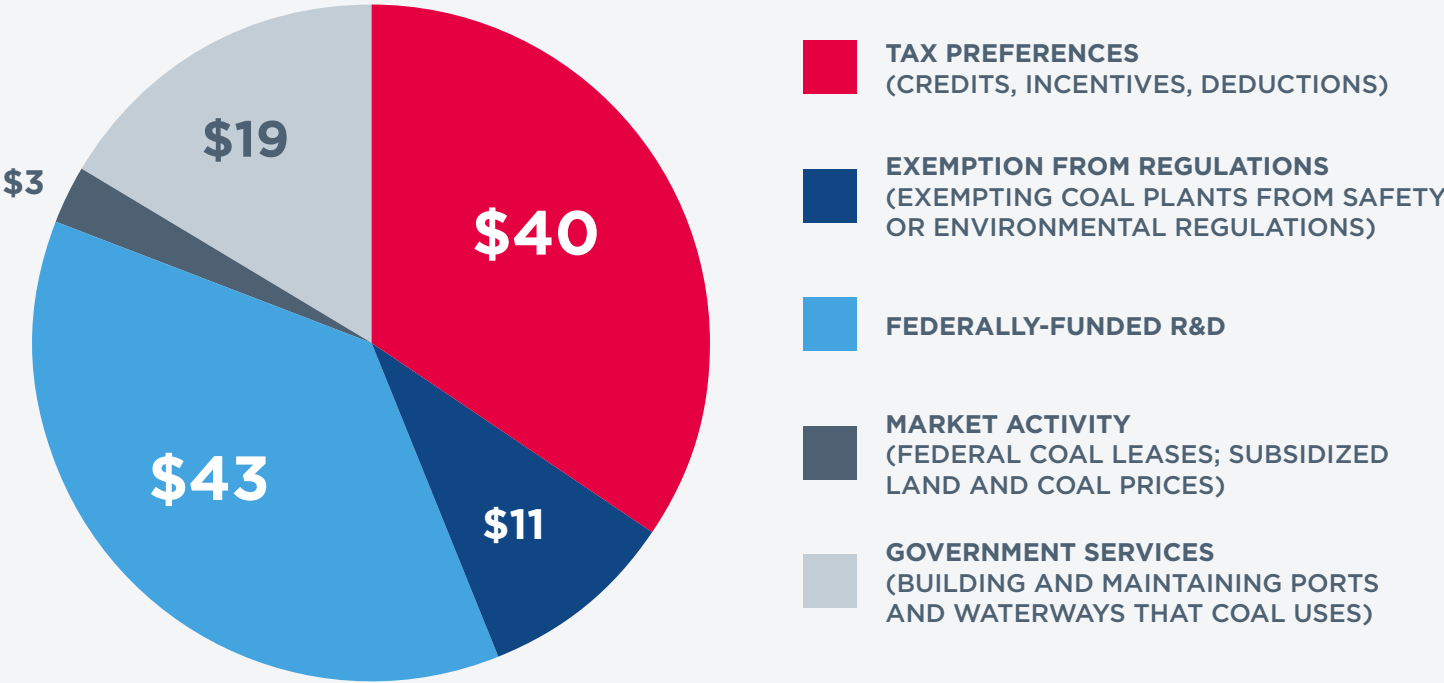
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TAXPAYERS HAVE SPENT \$120 BILLION SUBSIDIZING COAL COMPANIES SINCE WWII

TAXPAYER SUBSIDIES FOR COAL COMPANIES²
(1950-2016, IN BILLIONS OF DOLLARS)



THE COST OF COAL SUBSIDIES³



\$4B
PER YEAR
OR
\$75K
PER JOB



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TAXPAYERS COVER OTHER COSTS FOR COAL COMPANIES

MINES

WE ARE CLEANING UP 500,000 ABANDONED MINES

Coal companies have abandoned approximately 500,000 hardrock mines across the U.S., with an estimated cleanup cost as high as \$54 billion.⁴



COAL COMPANIES UNDERFUNDED HEALTH CARE FOR MINERS — LEAVING SICK WORKERS AND THEIR FAMILIES TO FEND FOR THEMSELVES

Government aid for sick miners could exceed

\$15 billion
by 2050⁶

CASE STUDY: COAL PLANTS SITUATED IN OHIO FLOOD PLAINS THREATEN CLEAN WATER⁷

Twenty-one coal plants with ash ponds are within a quarter-mile of the Ohio River. All are susceptible to flooding and five of them are in high-risk flood zones.

Twenty-five million people live in the Ohio River Basin and more than three million Americans get their drinking water from the Ohio River.

The Ohio River has been elevated for the past year, running four times the normal flow, increasing risk of coal contamination.

10

OHIO PLANTS

have already contaminated local groundwater.

FEBRUARY 20, 2019

U.S. MINING SITES DUMP 50 MILLION GALLONS OF FOULED WASTEWATER DAILY⁵

 PBS NEWSHOUR



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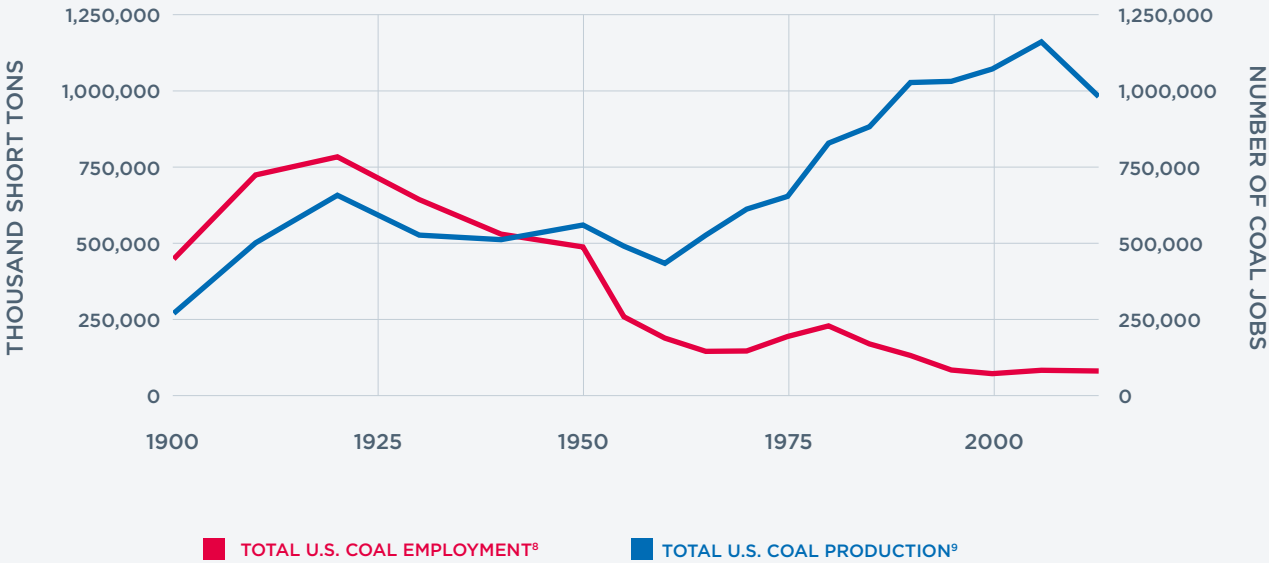
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AUTOMATION HAS BEEN KILLING COAL JOBS SINCE THE '50S, EVEN AS PRODUCTION INCREASED

MORE TONS PER WORKER = FEWER COAL WORKERS

TOTAL U.S. COAL PRODUCTION AND TOTAL U.S. COAL EMPLOYMENT



AUTOMATION'S IMPACT ON COAL IS MUCH LIKE ITS IMPACT ON EVERYTHING ELSE

2000-2017

5.5 million manufacturing jobs lost as manufacturing output increased 7%.¹⁰

2012-2017

226,000 administrative, bill collector, and bookkeeper jobs lost.¹¹

2017-2030

Up to 33% of the U.S. workforce will need to learn new skills and work in new occupations.¹²



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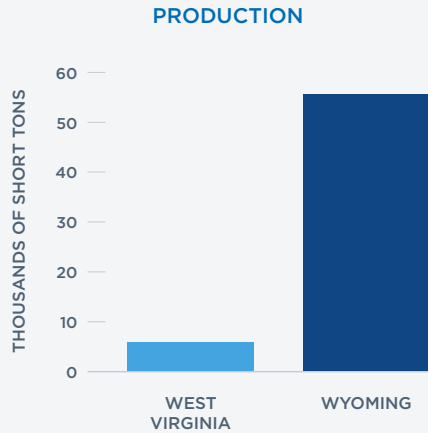
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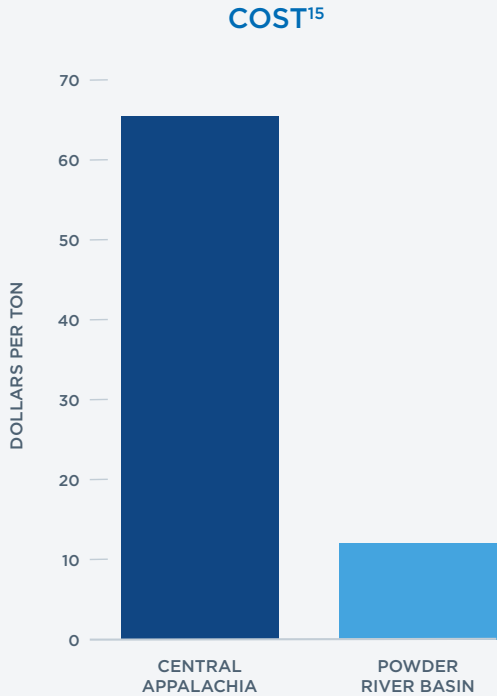
SURFACE MINING OUT WEST HAS BEEN ELIMINATING COAL JOBS SINCE THE '90S, BECAUSE IT IS CHEAPER, SAFER, AND REQUIRES FEWER MINERS

MINING IS EASIER OUT WEST...

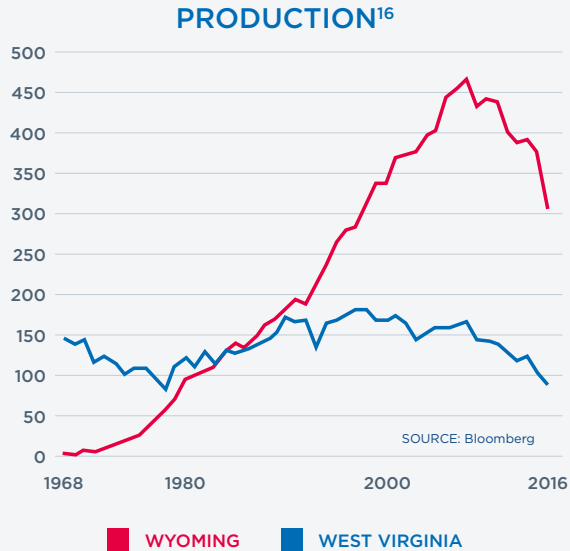
WYOMING MINES PRODUCE **8X** MORE COAL PER WORKER THAN WEST VIRGINIA^{13, 14}



WHICH MAKES WESTERN COAL 5X CHEAPER...



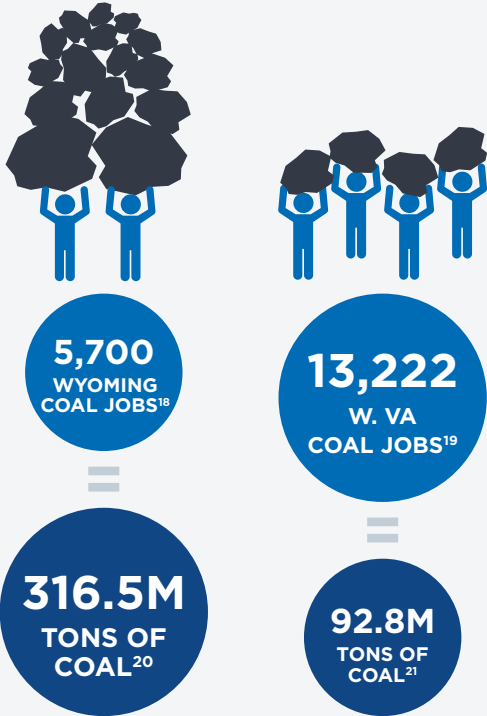
WHICH EXPLAINS WHY UTILITIES SWITCH TO WESTERN COAL...



16 MINES IN THE POWDER RIVER BASIN PRODUCE **43%** OF U.S. COAL

THERE ARE 671 TOTAL COAL MINES IN THE UNITED STATES.¹⁷

UNFORTUNATELY, WESTERN COAL MINES DON'T EMPLOY AS MANY WORKERS, PER TON



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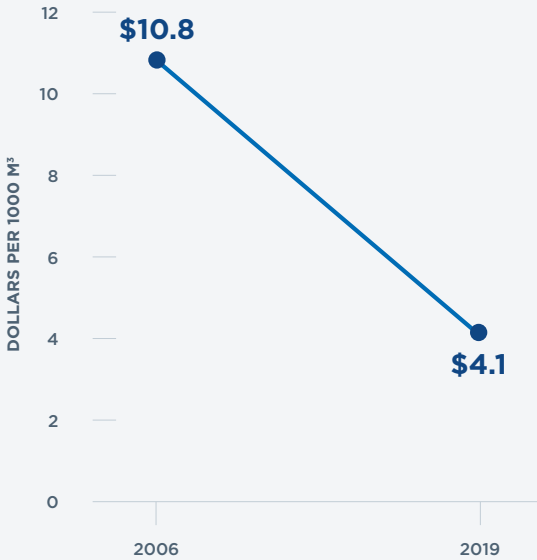
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NATURAL GAS HAS BEEN REPLACING COAL JOBS FOR ABOUT 10 YEARS, BECAUSE IT'S CHEAPER AND CLEANER THAN COAL

NATURAL GAS PRICES KEEP FALLING²²

New fracking technology and horizontal drilling techniques reduced natural gas costs by nearly two-thirds over the past 13 years.



COAL PLANTS CAN'T COMPETE²³

Of coal plants in the U.S., 72% are unprofitable when compared to an equivalent natural gas plant.

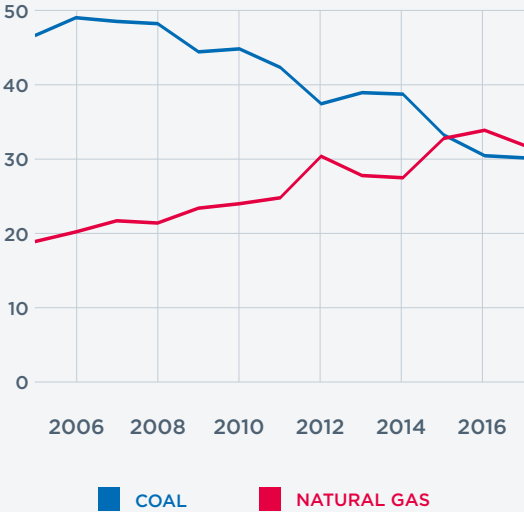
ACCOUNTING FOR ANTICIPATED COSTS

98%

OF U.S. COAL PLANTS ARE NOT PROFITABLE

AS COAL-FIRED PLANTS AGE, UTILITIES REPLACE THEM WITH NATURAL GAS²⁴

COAL AND NATURAL GAS MARKET SHARE



OIL AND GAS EMPLOYMENT RISES AS COAL EMPLOYMENT DROPS²⁵

COAL JOBS



OIL AND GAS JOBS



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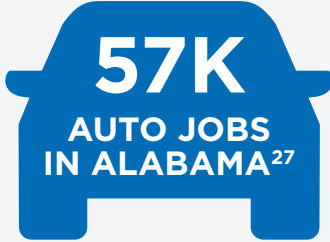
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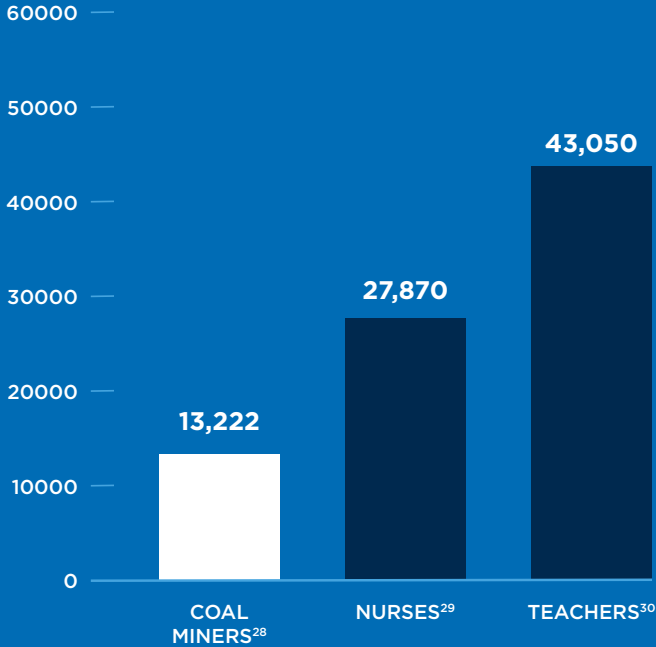
COAL EMPLOYS FEWER PEOPLE THAN YOU MIGHT THINK

MORE AUTO JOBS IN ALABAMA THAN COAL JOBS NATIONWIDE

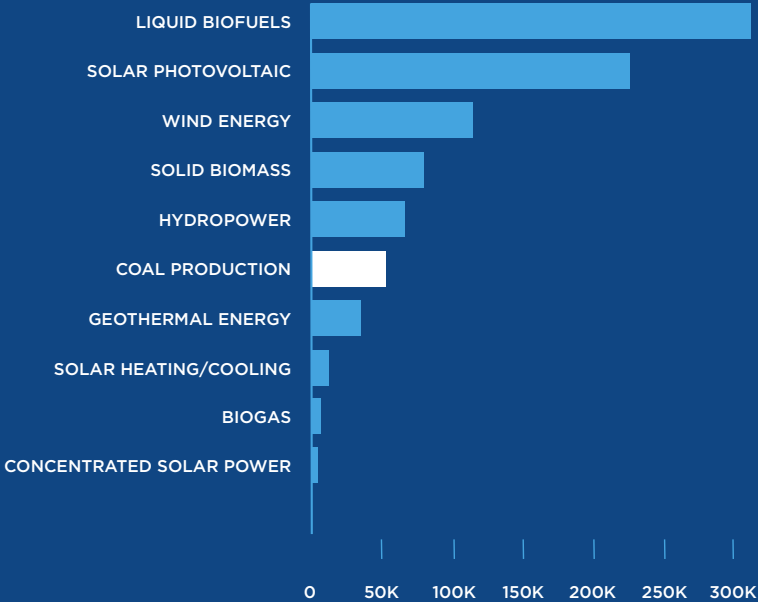


MORE TEACHERS AND NURSES IN WEST VIRGINIA THAN COAL WORKERS

EMPLOYMENT IN WEST VIRGINIA



FOR EVERY COAL JOB IN THE U.S., 16 RENEWABLE ENERGY JOBS³¹



SKEPTICAL? ASK A COAL CEO OR A COAL ANALYST

MARCH 27, 2017
TIM MARCIN

TRUMP CAN'T BRING BACK MINING JOBS, COAL CEO WARNS

“Robert Murray, founder and chief executive of Murray Energy — the nation’s largest privately held coal mining company — told the Guardian that many mining jobs were lost to technology and competition, rather than regulation.

Trump can’t really change that, Murray said.

‘I suggested that he temper his expectations. Those are my exact words,’ Murray said. ‘He can’t bring them back.’”³²

Newsweek

JULY 10, 2019
TAYLOR KUYKENDALL

THE COAL SECTOR WILL CONTINUE TO STRUGGLE

“The new rule may result in a slower decline in coal-fired generation; however, it will not change the dynamics that have driven dramatic increases in both natural-gas fired and renewable generation.”³³

- Fitch Ratings, June 25, 2019

S&P Global



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UNDER TRUMP, "SAVING" COAL MEANS CUTTING BACK ON RENEWABLE ENERGY INVESTMENT

TRUMP'S 2020 BUDGET WOULD CUT RENEWABLE ENERGY

D.O.E. OFFICE OF ENERGY EFFICIENCY & RENEWABLE ENERGY FROM \$2.4 BILLION TO \$696 MILLION³⁴

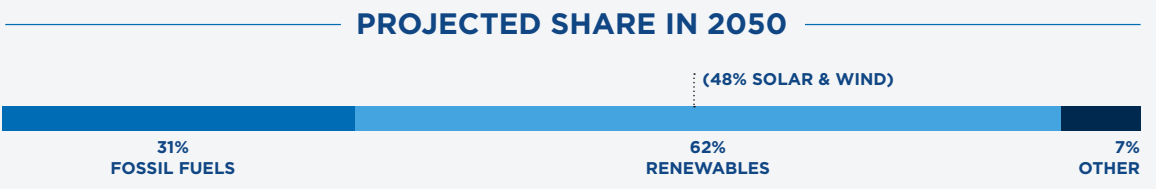
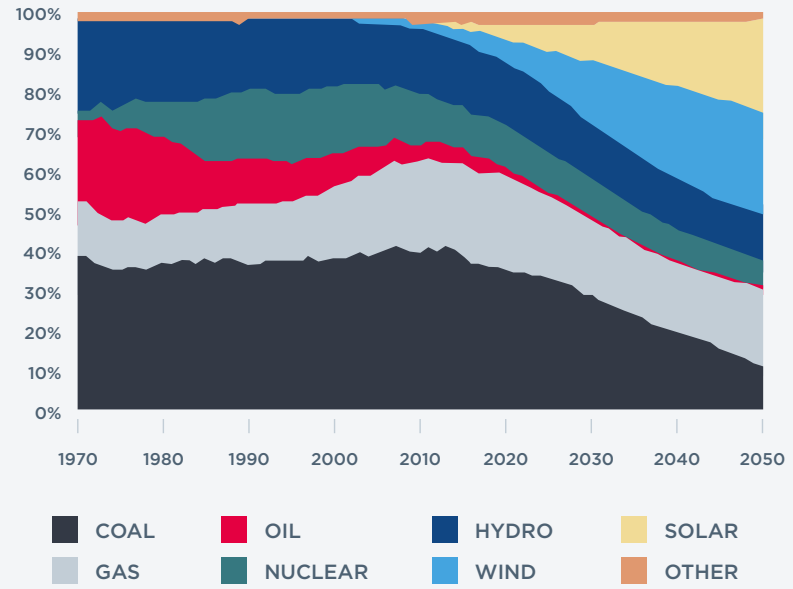
71%

D.O.E. OFFICE OF SCIENCE FROM \$6.6 BILLION TO \$5.5 BILLION³⁵

16%

ELIMINATES \$366 MILLION ALLOCATED TO ADVANCED ENERGY LABS ESTABLISHED BY PRESIDENT GEORGE W. BUSH.³⁶

EVEN THOUGH RENEWABLE ENERGY COULD GENERATE 62% OF GLOBAL ENERGY BY 2050³⁷

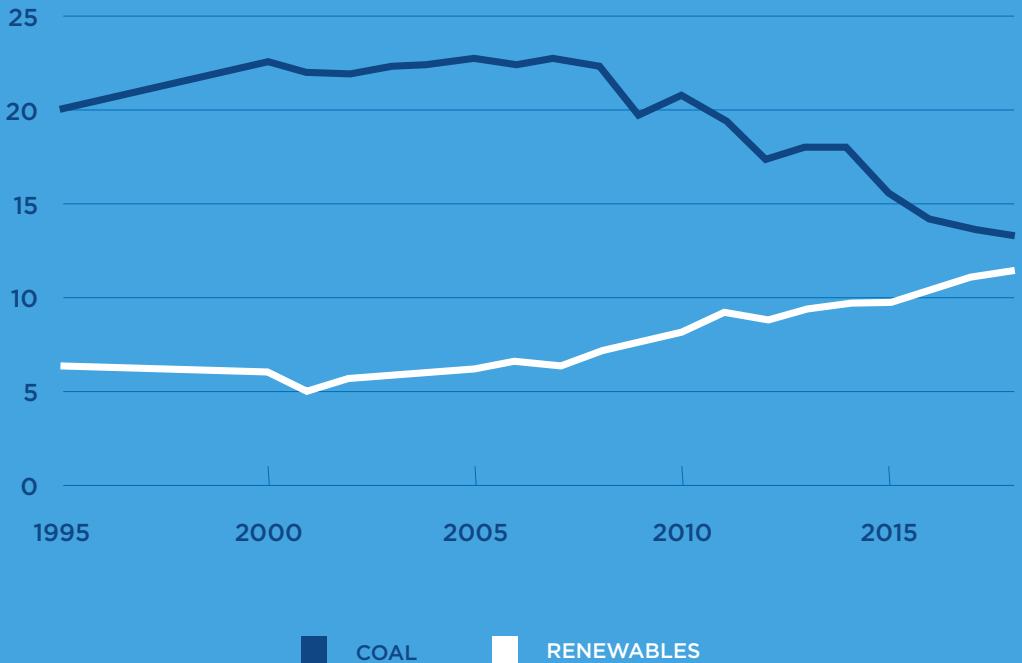


SOURCE: Bloomberg New Energy Finance

ACROSS THE MIDWEST, SWITCHING FROM FOSSIL FUELS TO RENEWABLES = A \$58 BILLION “BUY LOCAL” OPPORTUNITY

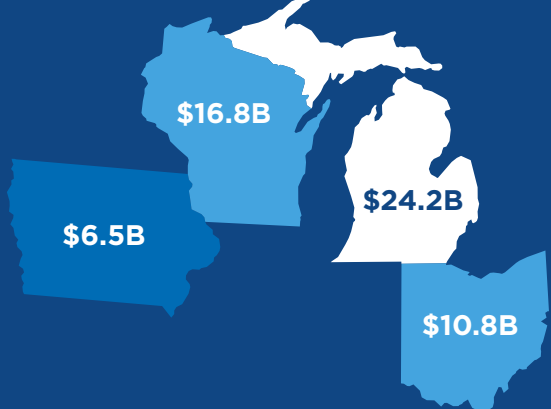
CONSUMERS IN THE U.S. ARE ALREADY MAKING THE SWITCH

U.S. COAL CONSUMPTION VS. U.S. RENEWABLE ENERGY³⁸



IF FULLY EMBRACED, THIS TREND COULD BE PARTICULARLY PROFITABLE IN THE MIDWEST³⁹

Iowa, Michigan, Ohio, and Wisconsin are net energy importers, due largely to their dependence on fossil fuels. Each has renewable energy capacity that could support local investment and jobs.



IF THESE STATES MOVED THEIR ENERGY IMPORTS TO RENEWABLE PRODUCTION AT HOME, \$58.3 BILLION AND NEW JOBS WOULD COME TO THE MIDWEST.



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TRUMP RECORD ON COAL WORKERS AND THEIR FAMILIES



UNCONCERNED WITH MINERS' HEALTH

Trump and Senate Republicans let the black lung benefit excise tax fall by half last year, putting health care for miners suffering from black lung at risk.⁴⁰



SIDES WITH INDUSTRY EXECS OVER WORKERS

Trump appointed Bill Wehrum, former industry lawyer, as his chief air regulator. Wehrum has argued in court against standards to protect miners and construction workers from dangerous silica dust.⁴¹



IGNORES PROTECTIONS FOR MINERS

Miners Pension Protection Act, which would keep miners' pension and health care funds solvent, has been introduced four times. Senate GOP and Trump have not pushed for a vote.⁴²



WOULD CUT FUNDS FOR COAL COMMUNITIES

Trump's first budget proposed eliminating the Appalachian Regional Commission, which supports economic development and worker training programs across Appalachia (including Pennsylvania and Ohio).⁴³



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