



A Green New Deal for West Virginia

Leaving No One Behind: Ensuring a Fair Transition for Workers and Communities

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West Virginia's Economy

A Profile (it's not good)

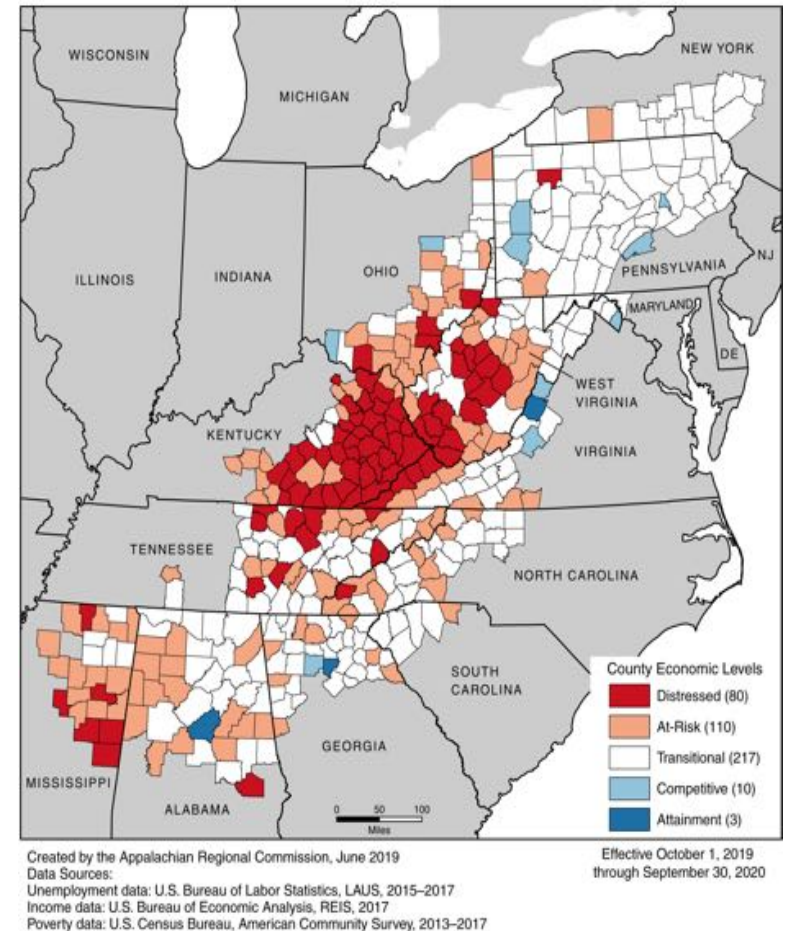
- **Low income, high poverty:** 49th in per capita income (\$40,578 in 2018), 50th in median household income (\$43,469 in 2017), and 4th highest poverty rate (19.1% in 2017).
- **Declining and aging population, low population density:** -60k+ population (11'-19'), school enrollment -20k+ (09'-20'), labor force -30k+ (09'-18'), in-state public college enrollment -12k (08'-18'), and no cities above 50k.
- **Low Economic Diversity:** 46th in economic diversity (Hachman Index 2017), 5th in mining share of GDP and employment (11% in 2019-Q1; 3.9% in 2018), 1st in health care private employment share (21% - 2018) and 2nd in private health care GDP share (12.6% in 2019-Q1).
- **Low wages, education, workforce participation:** 47th in median hourly wage (\$16.94 in 2018), 50th lowest public sector wages (2018), 50th in share of adult's w/ college degree (20.2% in 2018), and 50th in labor force participation (53.8% in 2018).
- **Poor health:** 49th in life expectancy (74.8 in 2017), 45th in overall health (America's Health Rankings Index 2019), 1st in opioid related deaths (49.7 per 100k in 2017), and 1st in share of state residents on Social Security disability (8.8% in 2018).
- **Low-Wage Future:** 65% of future job openings by 2026 pay less than a living wage.

Appalachia/ West Virginia – Context

- Dependence on extractive industries, source of good jobs
- Resource curse – providing raw materials for other regions' prosperity
- ...and leaves the region poorer than most of the country

“Without local or regional markets, the economic structure of the mountains was solely dependent upon exterior demand....This condition of **growth without development** placed the mountains in a highly vulnerable relationship to the larger market system....Despite the vast natural wealth within its borders, the southern mountains remained comparatively poor—not because it was backward, but because its wealth enriched the modernizing centers in other parts of the country”

Ronald D. Eller *Miners, Millhands and Mountaineers: Industrialization of the Appalachian South, 1880–1930*, 229)



Why is West Virginia So Poor?

West Virginia in the 1990s: Opportunities for Economic Progress (Dilger & Witt, 1994, WVU Press)

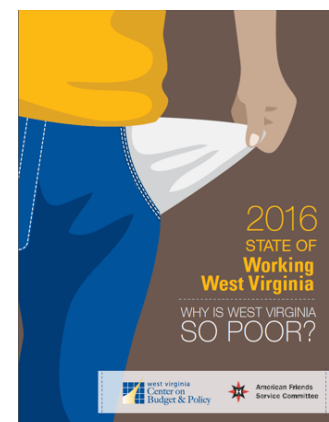
- An inadequate physical infrastructure
- Low education achievement
- Outdated job skills
- A rugged topography
- Low population density
- A lack of airport and port facilities
- A generally insular view of the state's economy

Table 4
Regression Results

	Coefficient	Standard Error
Knowledge Variables		
Percent of Population with High School Degree	0.0670124***	0.0175071
Percent of Population with College Degree	0.0089088***	0.00152
Patent Capital Per Capita	-3.27E-06***	6.90E-07
Public Finance Variables		
Corporate Tax Rate	0.0000127***	3.58E-06
Effective Individual Tax Rate	0.0000226***	7.18E-06
Highway Stock Per Capita	1.428203	0.8821894
State Capital Outlays Per Capita	-0.0267646	0.0249909
Industrial Structure Variables		
Manufacturing Income as a Percent of Total Personal Income	-0.0006643	0.0005312
Mining Income as a Percent of Total Personal Income	-0.0000605***	8.69E-07
Mining Income as a Percent of Total Personal Income	-0.0000703***	8.86E-06
Other Market Variables		
Labor Force Participation	0.126095***	0.032784
Right-To-Work	0.007437	0.0102481
Constant	5.134715***	0.2564557
Prior Log Real Per Capita Personal Income	0.5214964***	0.0239803
Observations	1913	

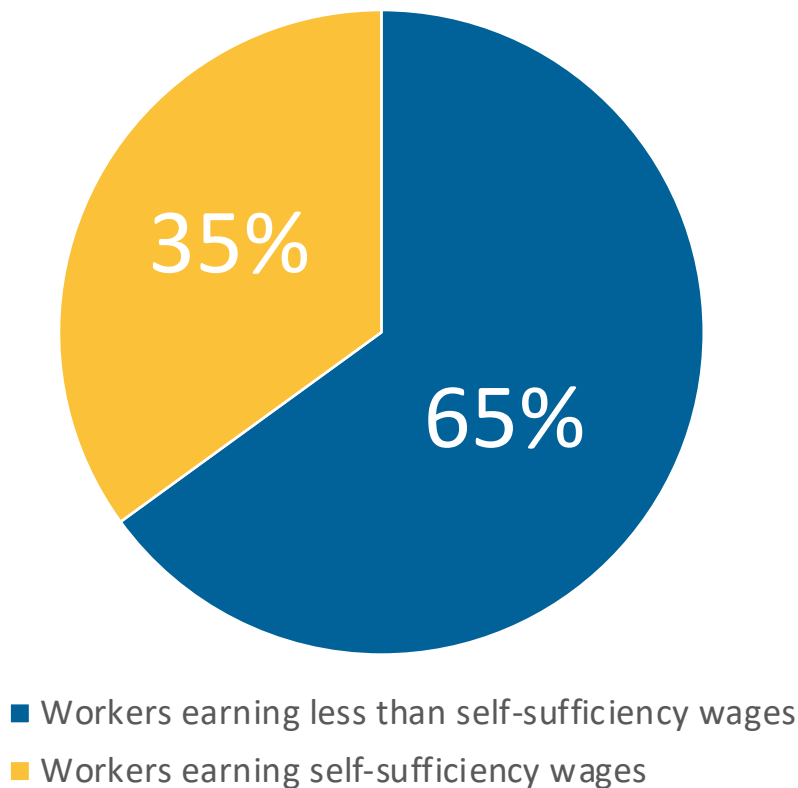
All independent variables are lagged five years.

“Our results would support the theory of a resource curse where a reliance on extraction of natural resources ultimately lowers overall economic well-being of a state.”



West Virginia's Low Wage Future:

65% of West Virginia's 2026 Projected Job Openings Will Be In Low-Wage Occupations



Of the approximately **82,000** projected job openings from 2016 to 2026, 65 percent are in occupations that pay less than the Self Sufficiency (Kanawha county: \$36,513 in 2016 dollars) Standard for a family of three.

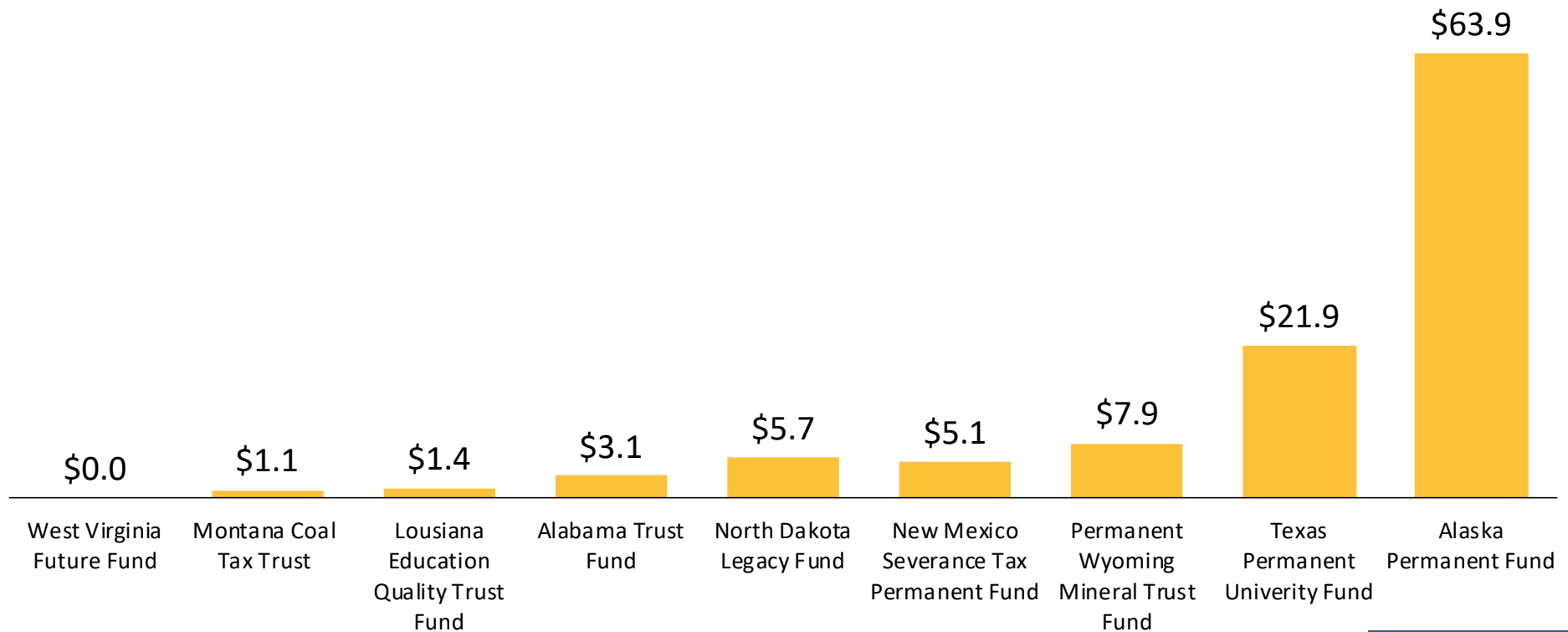
Top 8 Growing Occupations	Projected Job Openings	Median Annual Wage
Combined Food Preparation and Serving Workers	3,984	\$19,782
Cashiers	3,758	\$19,305
Retail Salespersons	3,700	\$20,248
Office Clerks, General	2,806	\$24,871
Personal Care Aides	2,545	\$19,791
Waiters and Waitresses	2,347	\$20,307
Laborers and Freight, Stock, and Material Movers, Hand	1,696	\$24,324
Customer Service Representatives	1,672	\$26,756

N = 578 Occupations
N = 82,128 Job Openings

Source: WVCBP analysis of Workforce WV data (Long Term Occupational Projections, 2016-2026 + The Self-Sufficiency Standard for West Virginia, 2013)

U.S. States with Permanent Natural Resource Funds

Natural resource funds by size (in billions)

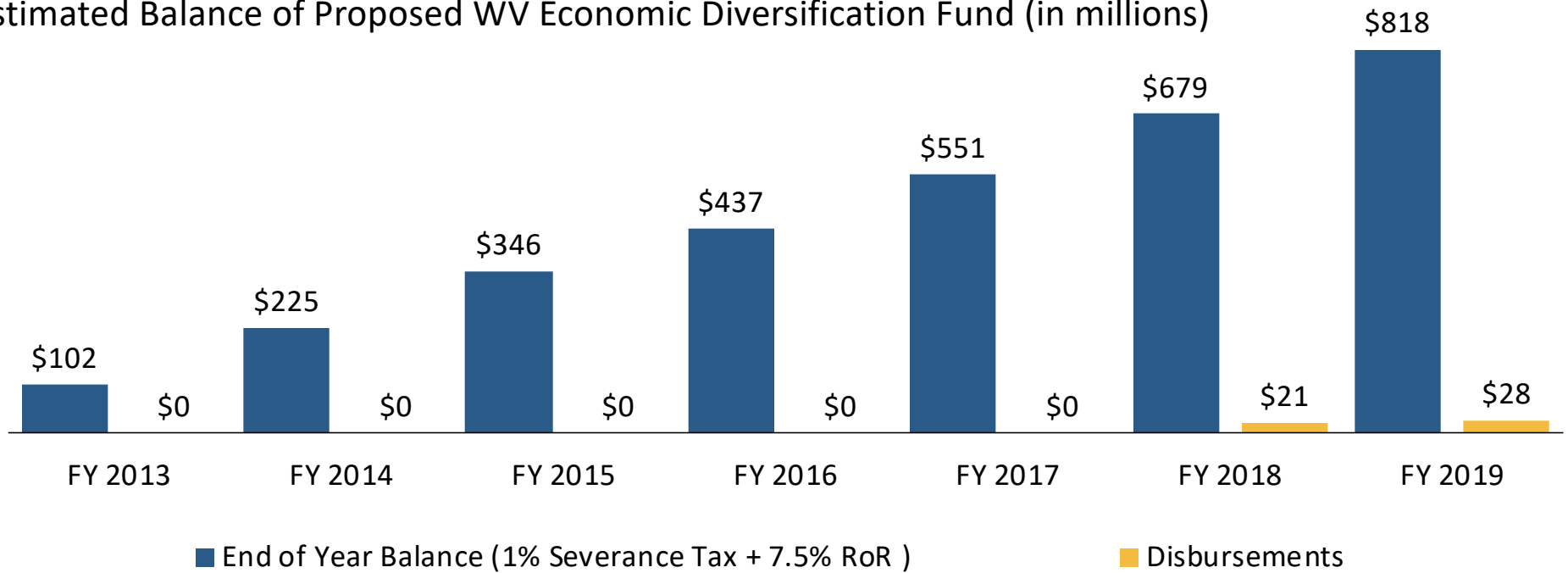


Source: WVCBP

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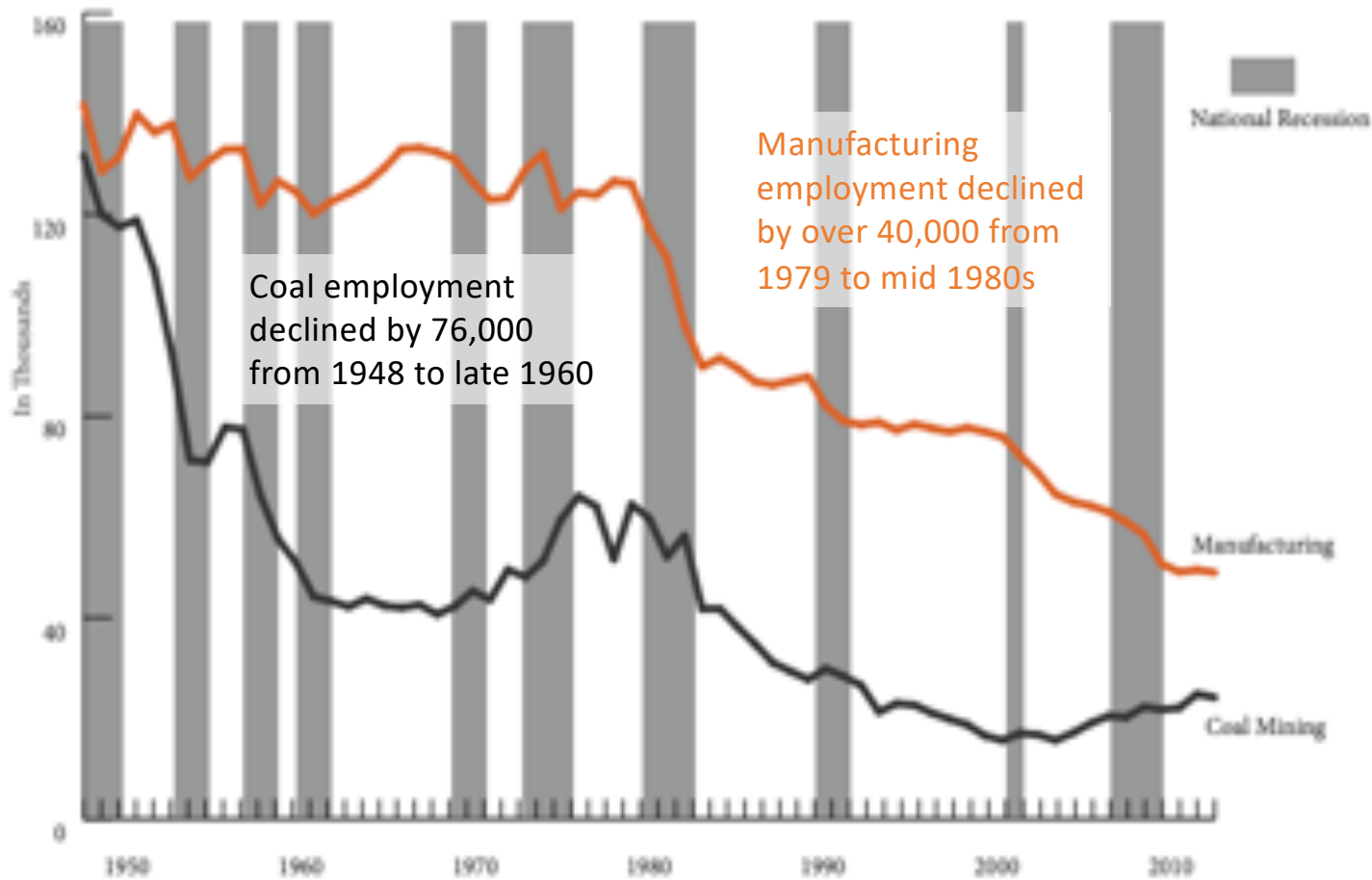
What if West Virginia had enacted a Future Fund in 2012?

Estimated Balance of Proposed WV Economic Diversification Fund (in millions)



Source: WVCBP analysis of WV Tax Department data

Sharp Drop in Coal and Manufacturing Jobs Since Early 1980s



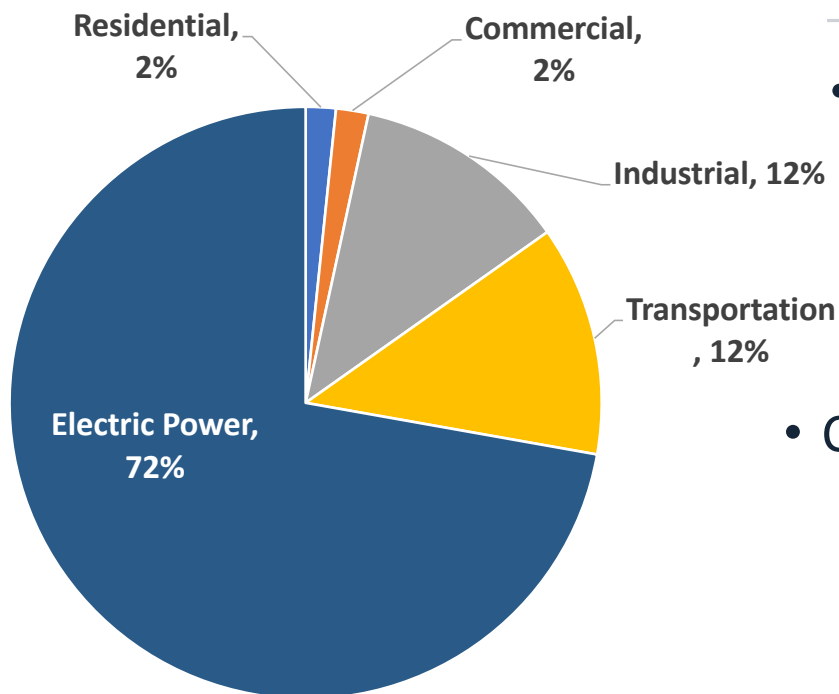
Source: Workforce West Virginia data.
Note: Beginning in 2001, data is based on NAICS instead of SIC.

Source: WVCBP, 2013 State of Working West Virginia

Major Economic Transitions in West Virginia:

Coal Mine
Mechanization and
Deindustrialization

**West Virginia Carbon Emissions,
millions of metric tons**



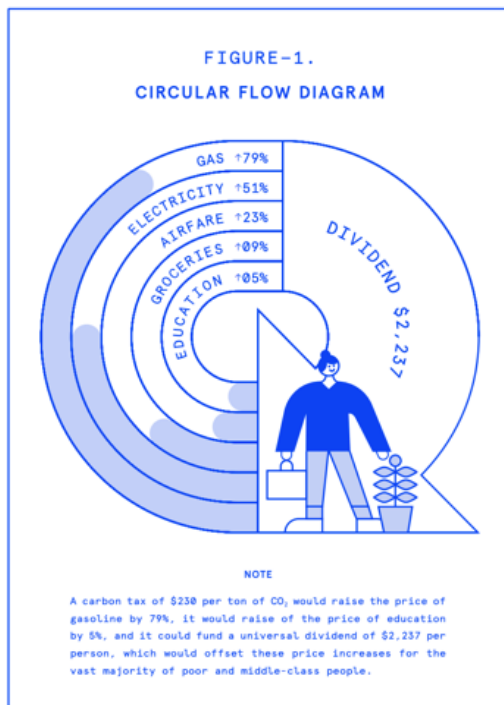
West Virginia Carbon Dioxide Rankings (EIA, 2016)

- 2nd highest carbon intensive economy
- 3rd highest per capita carbon emissions
- 1st highest carbon-intensive energy supply

Decarbonization = MORE Good Jobs for West Virginia

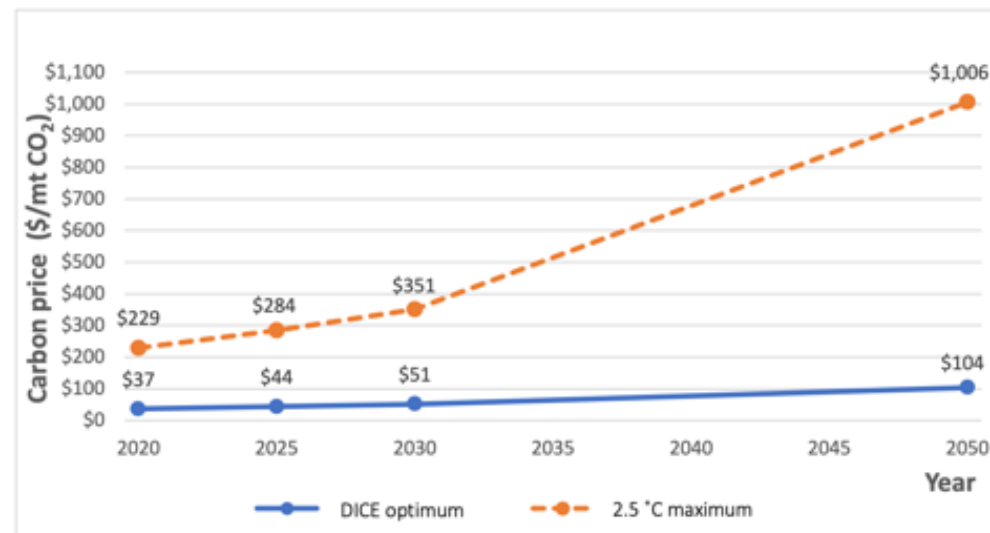
- Upgrade the Grid/Renewable Power Plants
 - Broadband
 - Electric Vehicle Infrastructure
 - Passenger Rail
- Eco-industrial Parks on Brownfields
- Carbon Absorption & Sustainable Agriculture
 - Mine Reclamation (\$4.5 billion)
- Water/Sewer Infrastructure (\$17 billion)
 - Public Jobs Program
 - Energy Efficiency

Carbon price needs to prevent temperatures from rising to 2.5 degrees Celsius (\$230 per ton)



Source: Fremstad and Paul (2017)

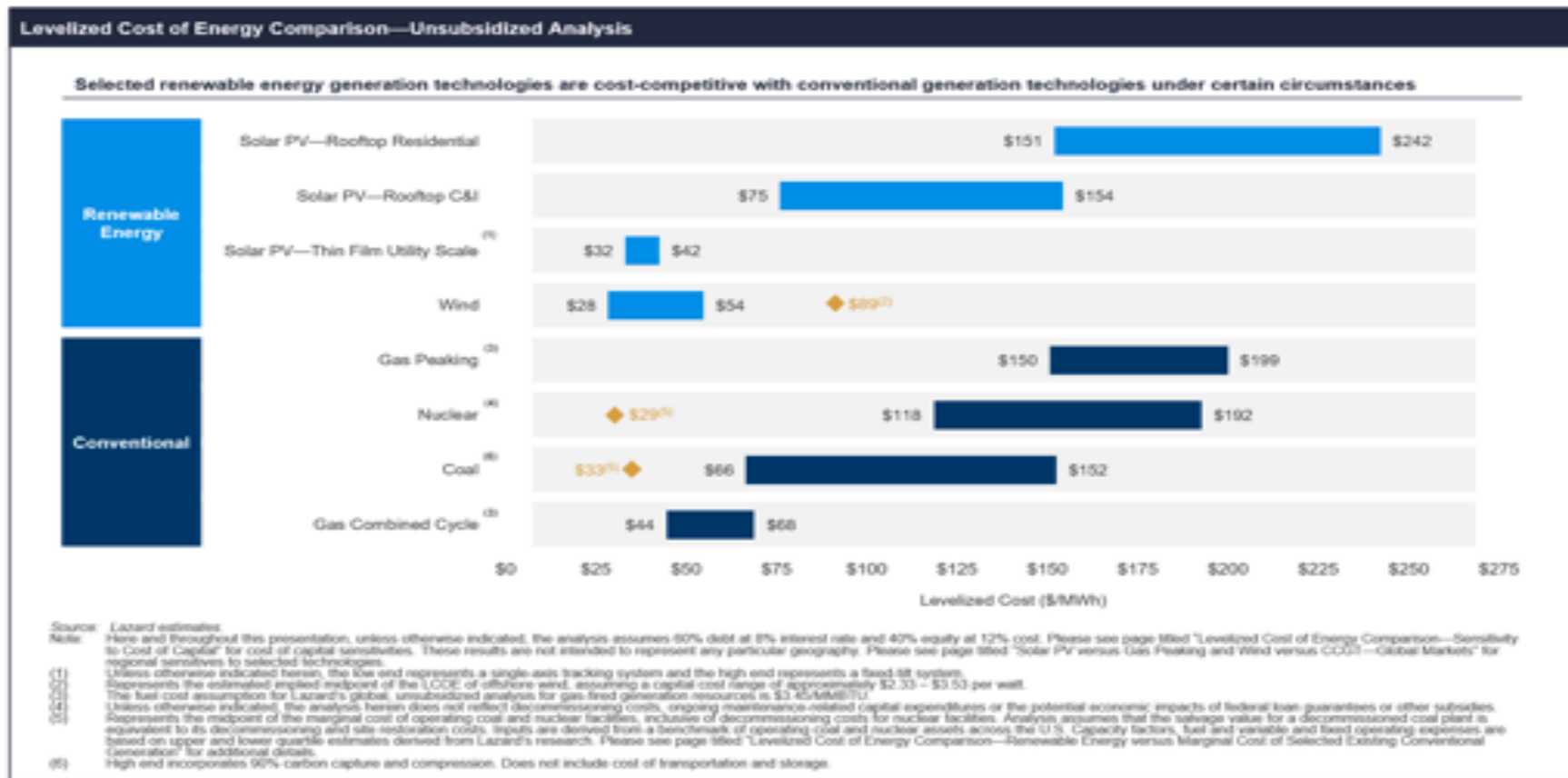
Figure 2: Carbon price paths



Note: Global CO₂ price in 2010 US dollars.

Source: Data from Nordhaus (2017a), Table 1.

Natural gas is becoming non-competitive with renewables



- Higher carbon tax (e.g. \$230) will make natural gas power uneconomical or costly

Fossil Fuel Jobs and a Just Transition



- **Pension guarantees** for retired workers who are covered by employer-financed pensions, starting at age 65;
- **Retraining** to assist displaced workers to obtain the skills needed for a new job and **100 percent wage replacement** while training;
- **Re-employment** for displaced workers through an employment guarantee, with **100 percent wage insurance**. With wage insurance, workers are guaranteed that their total compensation in their new job will be supplemented to reduce any losses relative to the compensation they received working in the fossil fuel-based industry;
- **Relocation support** for 50 percent of displaced workers, assuming only 50 percent will need to relocate; and
- Full Just Transition support for **workers 65** and over who choose to retire.

Fossil Fuel Jobs and a Just Transition

wvpolicy.org | @WVCBP

Number of Workers in West Virginia Employed in Fossil Fuel Production and Ancillary Industries, 2018

Industry	Number of Employed Workers	Average total compensation	Total compensation
Oil and Gas Extraction (2111)	2,174	\$115,278	\$250,614,698
Coal Mining (2121)	13,392	\$111,043	\$1,487,084,508
Ancillary industries			
Support Activities for Oil and Gas Operations (213112)	3,338	\$86,462	\$288,609,155
Support Activities for Coal Mining (213113)	725	\$86,125	\$62,440,625
Oil and Gas Pipeline and Related Structures (237120)	9,941	\$146,380	\$1,455,163,580
Natural Gas Distribution (221210)	737	\$96,655	\$71,234,735
Fossil Fuel Electric Power Generation (221112)	2,735	\$129,415	\$353,950,025
Petroleum Refineries (324110)	340	\$105,040	\$35,713,600
Industrial Gas Manufacturing (325120)	62	\$117,260	\$7,270,120
Petroleum Bulk Stations and Terminals (424710)	335	\$80,405	\$26,935,675
Mining Machinery and Equipment Manufacturing (333131)	776	\$87,360	\$67,791,360
Oil and Gas Field Machinery and Equipment Manufacturing (333132)	122	\$84,370	\$10,293,140
Coal and Other Mineral and Ore Merchant Wholesalers (423520)	47	\$163,605	\$7,689,435
TOTAL	34,724	\$118,788	\$4,124,790,656
TOTAL AS SHARE OF WEST VIRGINIA STATE EMPLOYMENT	5.0%	-	(10.3% of total wages)
INDIRECT AND INDUCED JOBS (2.25 Multiplier)	43,405		

Source: Workforce WV (QCEW)

Note: Compensation includes wages plus 25% in assumed benefits

Considerations for Estimating Cost of Just Transition Program for displaced workers

- Depends on policies enacted (e.g. carbon tax, cap and trade, decarbonization target, public expenditures, etc.)
- Levels of education of displaced workers
- Non-managerial workers or all workers?
- Number of workers reaching retirement and voluntary retirement
- Length of transition period and industry contraction (e.g. 70% for coal and 40% for gas)
- Labor supply and demand for new (clean energy) jobs
- PERI (2019) study estimates just 1.8% (585/32,304) of Colorado fossil fuel workers will require annual assistance per year (\$198,872 per worker).

Programs Supporting Displaced Workers (Colorado, 2018, PERI)	Program cost per worker
Average Compensation Insurance (100% for 3 years of coverage)	\$57,000
Retraining Support (community college)	\$8,000
Relocation Support	\$50,000
Wage Replacement for workers in training (100%)	\$50,000
Average Annual Costs (after adjustments) per year	\$114 million

“Change has been a constant throughout the history of our coal industry. West Virginians can choose to anticipate change and adapt to it, or resist and be overrun by it. One thing is clear. The time has arrived for the people of the Mountain State to think long and hard about which course they want to choose.”

U.S. Senator Robert C. Byrd



Source: Senator Robert C. Byrd, “Coal must embrace the future,” The Hill, December 4, 2009



Where there is no vision, the people perish.
— Proverbs 29:18

A Green New Deal for West Virginia:

It's about our future



THANK YOU