WEST VIRGINIA FACTS

AMERICAN SECURITY PROJECT

Pay Now, Pay Later: West Virginia

Droughts and warmer conditions, projected to increase with climate change, caused $80 million in agricultural losses during the 1999 drought in West Virginia.[1]

Energy reform in West Virginia could reduce annual energy costs by $900 million by 2020 and $1.6 billion ($850 per person)[2] each year by 2030.[3] At present, the coal industry costs West Virginians nearly $98 million each year.[4]

Energy reform in West Virginia has the potential to create 5,000 new jobs by 2020, and 6,700 jobs by 2030.[5]

According to a new study, a failure to mitigate the effects of climate change could begin to cause serious gross domestic product and job losses within the next several decades. Between 2010 and 2050, it could cost West Virginia $45.9 billion in GDP and over 306,000 jobs.*

GDP numbers are based on a 0% discount rate. Job losses are measured in labor years, or entire years of fulltime employment. Backus, George et al., "Assessing the Near-Term Risk of Climate Uncertainty: Interdependencies among the U.S. States," Sandia Report (Sandia National Laboratories, May 2010), 141.* ***https://cfwebprod.sandia.gov/cfdocs/CCIM/docs/Climate_Risk_Assessment.pdf* *(accessed March 23, 2011).*

Admittedly, the effects of climate change, a complex and intricate phenomenon, are difficult to predict with precision. Informed scientific and economic projections, as we have used in our research, however, allow us to see that West Virginia faces significant losses in industries crucial to its economy if no action is taken. A major coal producer, West Virginia also faces losses given a transition to a green economy.

Data shows, however, that West Virginia has more to gain from the research, development, and distribution of renewable energy technologies than it has to lose. Implementing existing energy efficiency technologies could save West Virginia $1.6 billion annually by 2030, and introducing renewable energy sources such as biomass fuels could provide 61% of the state's residential electricity.[6] Moreover, it could save lives; about 33 in 100,000 West Virginian adults lose their lives as a result of fine particle pollution, more than any other state.[7] Should we fail to take action against climate change, West Virginians have much to lose.

Pay Later: The Cost of Inaction

If no action is taken, average temperatures in West Virginia are projected to rise by 5.85°F by 2100, causing increased droughts and flooding, increasing energy costs, and the proliferation of pests such as ticks and mosquitoes.[8]

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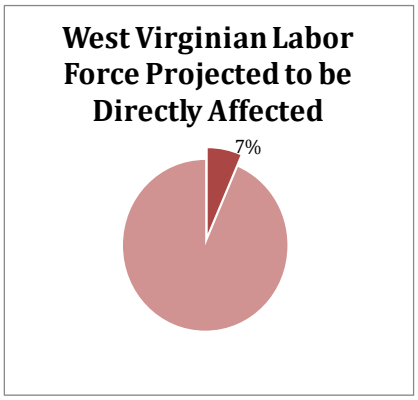
An Agrarian History Under Threat

In 2009, West Virginia's 23,000 farms, 95% of which are family owned, produced $590 million in revenue.[9] **Temperatures in the Southeast are predicted to rise by at least 2°F by 2030, while rainfall will likely drop, leading to dry spells similar to the drought of 1999, which caused over $80 million in losses to West Virginia's agricultural sector.**[10] Since 1970, the area of moderate to severe spring and summer drought in the region has increased by 12% and 14%, respectively.[11] Rising temperatures are conducive to agricultural pests that will further damage West Virginia's agricultural economy, and heat stress will reduce the milk output from the $30 million dairy industry.[12]



Source: Bureau of Economic Analysis[19]

Woodlands in Jeopardy

West Virginia's forests—which cover 78% of the state—are at risk from the proliferation of pests such as beetles and moths, an uptick in severe weather such as heavy storms and flooding, and increased incidence of wildfires.[13] **Damage to West Virginia's forests would affect industries worth $4 billion in sales, over $45 million in taxes, and over $703 million in salaries for nearly 29,800 West Virginians**.[14] Forests sustain West Virginia's economy in a variety of ways. Oak trees are crucial to the logging industry, which employs over 4,900 West Virginians.[15]

Damaged forests could additionally impact industries such as hogging, wood furnishing, hunting, and tourism. For example, the fishing industry, worth $179 million and employing over 2,000 people, is vulnerable to declining trout populations caused by changing habitats.[16] With six state forest preserves[17] and 37 state parks[18] throughout the rolling Appalachian Mountains, climate change is a threat not only to the Mountain State's economy, but the rural lifestyle that West Virginia has preserved for years.

Increased Energy Costs for West Virginians

Coal power plants, which generate nearly all of West Virginia's energy, rely on large amounts of water for cooling.[20] Rising temperatures, heat waves, and droughts will decrease and warm the water supply, potentially reducing the capacity and efficiency of coal power plants.[21] Moreover, West Virginians are dependent upon hydropower to meet most of their remaining energy needs.[22] Energy will become more expensive at the same time that demand increases due to rising average temperatures. Heat waves will cause surges in demand for home cooling, causing spikes in electricity consumption and prices.[23]

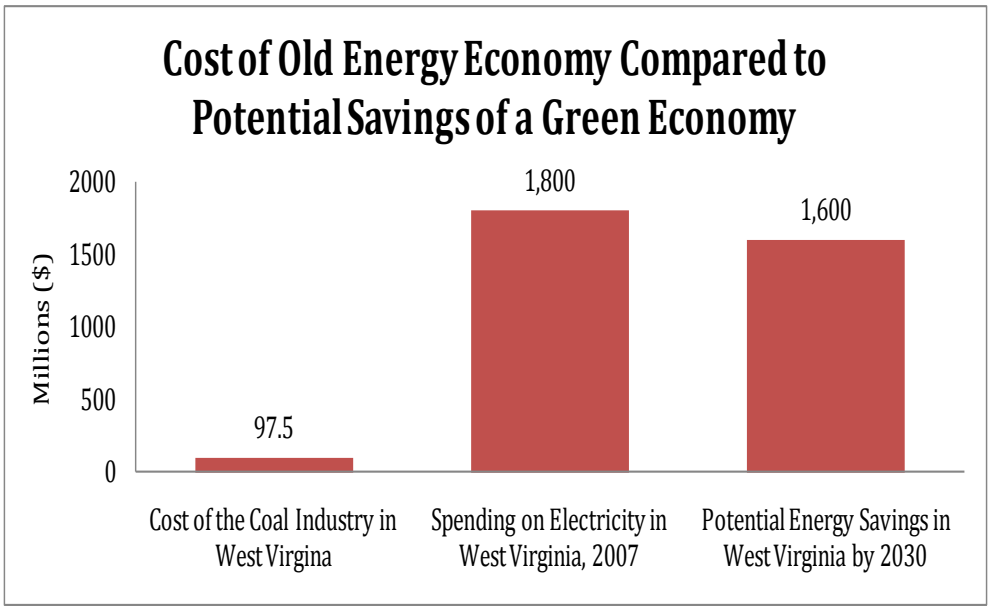
The coal industry itself is a cost to West Virginians. Taking into account the benefits—like jobs and tax revenue, and subsidies—legacy costs, which include polluted drainage, drinking water contamination, health and safety threats, and damaged roads, outweigh the former to such a degree that **the industry has a negative net impact on the state economy—nearly $98 million in 2009—roughly $110 for every household**.[24]

Pay Now: The Benefits of Taking Action

West Virginia is poised to benefit significantly from energy efficiency reform and the introduction of clean energy technology such as biofuels.

Upgrading energy efficiency using existing technologies could save West Virginia $900 million annually by 2020 and $1.6 billion ($850 per capita) each year by 2030. Energy friendly devices such as heat pump water heaters, geothermal heat pumps, and super boilers can improve energy efficiency and reduce West Virginia's commercial energy consumption 13% by 2020 and 17% by 2030.[25]

West Virginia also has the potential to supply large amounts of its energy using biofuels. The Department of Energy reports that **West Virginia could generate 61% of its residential electricity using biomass fuels such as plant fiber and animal waste**.[26] West Virginia's Mountaineer Wind Energy Center currently generates enough electricity to serve 20,000 homes and provide $700,000 in revenue for the state and local econo-



Source: Georgia Institute of Technology, Duke University

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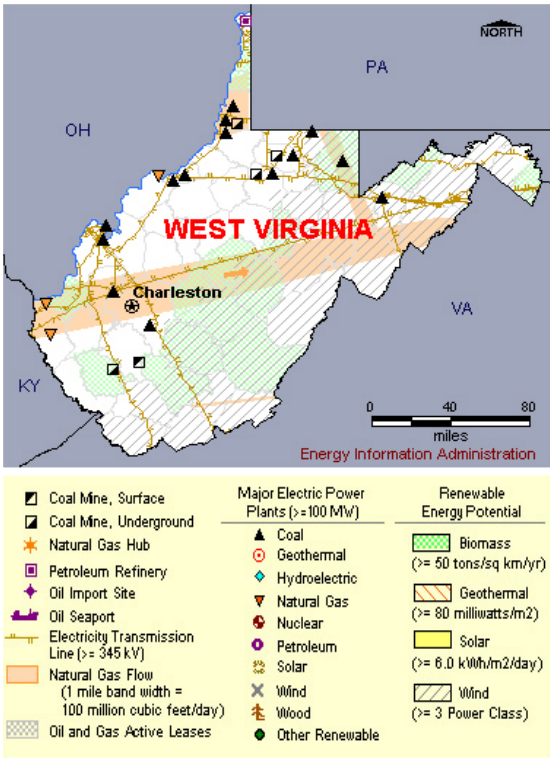
mies.[27] A transition to renewable sources of energy would have the added benefits of reducing state subsidies to the coal industry and decreasing the legacy costs of coal mining.

Moreover, an investment of $516 million dollars would likely yield over 12,100 jobs in West Virginia.[28] As of 2007, the state had 3,065 jobs and 332 businesses in its clean energy sector. From 2006-2008, private investment in the clean energy economy totaled $5.7 million.[29] With 68,000 unemployed workers, West Virginia is in need of the new jobs that the clean energy sector can provide.[30]



Conclusion

West Virginia must consider action on climate change not just in terms of cost, but also in terms of opportunities. If we give West Virginia's population, businesses, and investors clear and consistent signals by properly offering initiatives and cultivating demand, investment and innovation in renewable technologies will follow.

West Virginians will have to pay for the effects of climate change. The only remaining question is whether they will pay now, or pay later and run the risk of paying significantly more.

(Endnotes)

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