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## Collateral Damage: Turning a Blind Eye to Environmental and Social Injustice in the Coalfields

Patrick McGinley

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## **Collateral Damage:**

### **Turning A Blind eye to Environmental and Social Injustice in The Coalfields**

Patrick McGinley

“The great war going on in the mountains comes with too much collateral damage . . . The coal miner and . . . family is faced with only two options it seems, fight for a side which promises a paycheck and also destroys their home while causing sickness -- or succumb to the poverty . . . running rampant within their mountain home.”<sup>1</sup>

Coal Miner Nick Mullins – *The Thoughtful Miner Blog*

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<sup>1</sup>Nick Mullins, *The War on Coal*, THE THOUGHTFUL MINER BLOG (Sept. 20, 2011), available at <http://www.thethoughtfulcoalminer.com/2011/09/war-on-coal.html>.



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## I. INTRODUCTION

For decades coal has been used to produce half of the electricity consumed in the United States.<sup>1</sup> Coal's contribution to climate-changing greenhouse gases and competition from a nascent shale gas boom has shaken the energy markets.<sup>2</sup> In the small communities that dot the central Appalachian bituminous coalfields these development and the claims of coal lobbyists and politicians that federal government regulators are waging a "war on coal"<sup>3</sup> have raised fear of economic depression and

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<sup>1</sup> Guy Raz & Lauren Silverman, *Miners Weather The Slow Burn Of Coal's Demise*, NAT'L PUB. RADIO (July 12, 2012) (hereafter "*Coal's Demise*"), available at <http://www.npr.org/2012/07/14/156784701/miners-weather-the-slow-burn-of-coals-demise>.

<sup>2</sup> See generally, David Koranyi, ed., *Transatlantic Energy Futures Strategic Perspectives on Energy Security, Climate Change, and New Technologies in Europe and the United States*, CTR. FOR TRANSATLANTIC REL. at v (2011) (The world of energy is in upheaval . . . "[i]t is a time of unprecedented uncertainties"), available at [http://transatlantic.saisjhu.edu/publications/books/Transatlantic\\_Energy\\_Futures/Transatlantic\\_Energy\\_Futures.pdf](http://transatlantic.saisjhu.edu/publications/books/Transatlantic_Energy_Futures/Transatlantic_Energy_Futures.pdf); National Research Council, et al., *The Hidden Cost of Energy: Unpriced Consequences of Energy Production and Use*, NAT'L ACAD. OF SCI. 3 (2009) ("The CO<sub>2</sub> emissions from coal-fired power are the largest single source of greenhouse gas emissions in the United States."), available at [http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/hidden\\_costs\\_of\\_energy\\_Final.pdf](http://dels.nas.edu/resources/static-assets/materials-based-on-reports/reports-in-brief/hidden_costs_of_energy_Final.pdf); H. D. Jacoby, et al., *The Influence of Shale Gas on U.S. Energy and Environmental Policy*, 1 ECON. OF ENERGY & ENV. POLICY 37 (MIT Energy Initiative, 2012) ("The emergence of U.S. shale gas resources to economic viability affects the nation's energy outlook and the expected role of natural gas in climate policy."), available at [http://globalchange.mit.edu/files/document/MITJPSPGC\\_Reprint\\_12-1.pdf](http://globalchange.mit.edu/files/document/MITJPSPGC_Reprint_12-1.pdf); *The Future of Coal: Options For A Carbon-Constrained World*, MASS. INST. TECH. 1 (2007) ("Coal is an especially crucial fuel in this uncertain world of future constraint on CO<sub>2</sub> emissions"), available at <http://web.mit.edu/coal/>.

<sup>3</sup> See generally, Vicki Smith, "*War On Coal*" Label Obscures Battlefield Realities, ASSOCIATED PRESS (Oct. 21, 2012) ("The war on coal is a sound bite and a headline, perpetuated by pundits, power companies and public-relations consultants who have crafted a neat label for a complex set of realities, one that compels people to choose sides.") (Hereafter *War on Coal Label*), available at <http://bigstory.ap.org/article/war->

dislocation.<sup>4</sup> In less than four years, coal's net market share of the United States' electric generation fuel market dropped from fifty percent to thirty-four percent.<sup>5</sup> Coal-fired electric generation has declined to its lowest

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coal-label-obscures-battlefield-realities. Bill Bissett, president of the Kentucky Coal Association acknowledged that “. . . it's part of a PR campaign . . . [b]ut people are pretty jaded and pretty quick to recognize false arguments. The idea that we somehow hoodwinked people in the coalfields is a bit of a stretch.” *Id.*

<sup>4</sup> See *Coal's Demise*, *supra* note 2. In July, 2012, National Public Radio reported that: [T]he loss of coal as the dominant energy source is having damaging effects on the towns that once relied on the black rock for their livelihood. In front of the historic courthouse in Webster Springs, W.Va., in Webster County, a huge slab of shiny, black coal sits as a symbol of what helped build the county of about 9,000 people. Last month, Arch Coal, the operator of one of the biggest mines in the county, announced a round of devastating layoffs — more than 1,300 employees in West Virginia and Kentucky alone. Between the other big players in central Appalachia — Consol, Patriot, Alpha — thousands more jobs have been lost. This past week, Patriot Coal filed for bankruptcy protection. “I've never seen anything as quick as this to devastate the market, and this many layoffs at one time,” says Thomas Clark . . . a mine inspector for the past four decades. “It's been a landslide.”

*Id.*

<sup>5</sup> Compare U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL ENERGY OUTLOOK 2009 WITH PROJECTIONS TO 2030 (2009), available at [http://www.eia.gov/oiaf/aeo/pdf/0383\(2009\).pdf](http://www.eia.gov/oiaf/aeo/pdf/0383(2009).pdf), with *U.S. coal's share of total net generation continues to decline*, TODAY IN ENERGY, U.S. ENERGY INFORMATION AGENCY (June 5, 2012) [hereinafter *Coal's Share*] (“Despite seasonally low loads, natural gas-fired generation grew markedly and accounted for 30% of overall net generation by March 2012 (see chart above). . . . Coal generation decreased 29 billion kilowatthours from March 2011 to March 2012, while natural gas generation increased 27 billion kilowatthours during the same time period. In March 2012, coal's share of total generation was 34% compared to natural gas at 30%. Natural gas prices were near 10-year lows this winter, leading the generators in some states (such as Ohio and Pennsylvania) to increase their dispatch of natural gas-fired plants. Newer vintage natural gas-fired units operate at higher efficiency than older, fossil-fired units, which increases the competitiveness of natural gas relative to coal.”) available at <http://www.eia.gov/todayinenergy/detail.cfm?id=6550>.

level since the federal government began to compile monthly statistics.<sup>6</sup> Economists have predicted further substantial decline.<sup>7</sup>

The news of coal's receding position in the energy economy has caused conservationists and environmental protection advocates to celebrate.<sup>8</sup> Opponents of coal urge even greater reductions of its use to generate electricity for the domestic market.<sup>9</sup> Conversely, the coal industry and its political allies have rallied in efforts to prompt restoration of coal's dominant market share—or at least maintenance of its present position.<sup>10</sup> Their strategy, promoted by a multi-million dollar advertising

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<sup>6</sup> See *Coal's Share*, supra, note 6.

<sup>7</sup> See, e.g., Metin Celebi, et al., *Potential Coal Plant Retirements: 2012 Update*, The Brattle Group (Oct. 2012) (“The energy market outlook and emerging environmental regulations have changed substantially since we last studied the potential for coal plant retirements in December 2010 . . . [h]owever, that change is primarily due to changing market conditions, not environmental rule revisions, which have trended towards more lenient requirements and schedules.”), available at [http://www.brattle.com/\\_documents/UploadLibrary/Upload1082.pdf](http://www.brattle.com/_documents/UploadLibrary/Upload1082.pdf).

<sup>8</sup> See, e.g., 2012: *After Repeated Losses, Coal Industry Continues Downward Spiral*, SIERRA CLUB (Dec. 20, 2012), available at [http://action.sierraclub.org/site/MessageViewer?em\\_id=270245.0&dIv\\_id=227822](http://action.sierraclub.org/site/MessageViewer?em_id=270245.0&dIv_id=227822) (quoting New York City Mayor Michael R. Bloomberg, “The [Sierra Club’s] Beyond Coal campaign succeeded in 2012 by moving our nation toward a cleaner energy future, benefitting both the public health and the public good.”). Bloomberg’s “Bloomberg Philanthropies” committed fifty million dollars to the Sierra Club’s campaign. *Id.*

<sup>9</sup> *Id.* (quoting Bruce Nilles, Senior Director of the Sierra Club’s “Beyond Coal” campaign, “At this pace, we are on track to end the scourge of coal burning in the United States within the next two decades.”).

<sup>10</sup> See, P.J. Nyden, *What is Coal's Future*, THE CHARLESTON GAZETTE (Dec. 29, 2012) (“We have many decades of mining left, [West Virginia Coal Ass’n. Vice President Chris] Hamilton said . . . “Most experts believe that once the economy picks up and the price of natural gas increases, the decline in coal should taper off and stabilize.”). *Cf.*, R. T. Pierrehumbert, *Mitt Romney's Coal Complex: The GOP candidate's distortions, flip-flops, and bad jokes about energy*, SLATE (Oct 22, 2012), available at [http://www.slate.com/articles/health\\_and\\_science/science/2012/10/mitt\\_romney\\_coal\\_jobs\\_romney\\_talks\\_about\\_jobs\\_but\\_the\\_coal\\_industry\\_is\\_dying.html](http://www.slate.com/articles/health_and_science/science/2012/10/mitt_romney_coal_jobs_romney_talks_about_jobs_but_the_coal_industry_is_dying.html). (“Presidential candidate Mitt Romney asserted during the 2012 campaign that ‘we have 250 years of coal. Why wouldn’t we use it?’ . . . [b]ut what we don’t need is to have the president

campaign, urges coal-mining families to join the coal and electric power industry in fighting back against the federal government's so-called "war on coal."<sup>11</sup>

The discordant voices heard in the current debate over coal's future are frequently shrill.<sup>12</sup> The competing narratives are strewn with hyperbole intended to influence voters, political leaders, and government policy decisions.<sup>13</sup> This essay seeks to penetrate the exaggerations and

keeping us from taking advantage of oil, coal, and gas. This has not been Mr. Oil, or Mr. Gas, or Mr. Coal. Talk to the people that are working in those industries. I was in coal country. People grabbed my arms and said, 'Please save my job.'")

<sup>11</sup> See, *War on Coal Label*, *supra*. note 4 ("Two years ago, the phrase had only begun to creep into a conversation. Today, it's an inescapable, daily drumbeat, dominating not only conversation, but campaign ads and newscasts."). See generally, Shannon Elizabeth Bell & Richard York, *Community Economic Identity: The Coal Industry and Ideology Construction in West Virginia*, 75 RURAL SOCIOLOGICAL SOCIETY 111 (2010) ("The efforts of the West Virginia coal industry . . . through its (faux) "grassroots" front group "Friends of Coal," attempts to construct the image that West Virginia's economy and cultural identity are centered on coal production"), available at <http://anniebelletheory11.umwblogs.org/files/2011/12/Bell-and-York-Coal-Mining-and-Community-Identity1.pdf>.

<sup>12</sup> Deborah Tannen, a linguistics scholar who has studied the culture of public argument has observed that using the term "war" as a vehicle to advance a policy position is intended to "destroy the opposition so they can get the power back . . . it has this effect of making people angry, defensive and fearful . . . It has a corrosive effect on the human spirit." *War on Coal Label*, *supra*. note 4. See also discussion at note 12, *supra*, and accompanying text.

<sup>13</sup> Compare Press Release, National Association of Manufacturers, Manufacturers: EPA Regulations Will Severely Harm Economic Growth (Nov. 28, 2012) (National Association of Manufacturers President and CEO Jay Timmons warned "[i]f we don't return to a more sensible regulatory process, then manufacturers will face even higher energy prices, skyrocketing compliance costs, less investment opportunities and significantly fewer jobs . . . A devastating ripple effect will be felt throughout our entire economy, causing some manufacturers to close their doors for good."), available at <http://www.nam.org/Communications/Articles/2012/11/Manufacturers-EPA-Regulations-Will-Severely-Harm-Economic-Growth.aspx>, with Dominique Browning, *Soot: Filthy and Sickening*, HUFFINGTON POST (Oct. 26, 2012) ("We know how Big Coal operates --



misstatements of the competing interests and to separate fact from fiction in the evolving debate about the future of coal. The following discussion includes an analysis of the historic impact of coal mining on coalfield communities and the extent to which legislation intended to protect the health and safety of coal miners and the environment has succeeded.

Ultimately, I conclude that few in the conservation/environmental community, the coal and power industries, nor leaders of any political stripe are advocating planning and action to address the reality of declining coal production in central Appalachia and what it portends for coalfield communities. Instead, there is often emotional and vociferous public discourse over coal. But, if this debate must be framed as a “war” it is a war “about coal’s future”—not a “war on coal.”<sup>14</sup>

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because the coal industry is fighting pollution controls every step of the way, all over the country . . . Perhaps they want our air to be as filthy and sickening as the air in parts of China and India. That’s where you can see what an unregulated coal industry looks like.”), *available at* [http://www.huffingtonpost.com/dominique-browning/soot-filthy-and-sickening\\_b\\_2023988.html](http://www.huffingtonpost.com/dominique-browning/soot-filthy-and-sickening_b_2023988.html).

<sup>14</sup> This essay uses the term “war” not because it is appropriate in context, but because it captures the anger, hostility, and exaggerated rhetoric that lies at the core of the current debate about coal’s future and thus has become inextricably intertwined with the public discussion. Coal’s proponents first used the word “war” in the context of political and policy debate about the future of coal and coal mining communities. For one of the first media references to a “war on coal,” see Felicity Barringer & Andrew C. Revkin, *Gore warns of “planetary emergency”*, N.Y. TIMES (Mar. 21, 2007) *available at* <http://www.nytimes.com/2007/03/21/world/americas/21iht-web.0321goresub.4981928.html> (“Former Vice President Al Gore, rejecting complaints by Republican lawmakers that he was waging an alarmist war on coal and oil use, insisted before Congressional panels today that human-caused global warming constitutes a “planetary emergency” requiring an aggressive federal response.”). See also Chris Dickerson, *Consol blames environmental lawsuits for W.Va. layoffs*, LEGAL NEWSLINE LEGAL JOURNAL (Dec. 9, 2009) <http://legalnewsline.com/in-the-spotlight/224442-consol-blames-environmental-lawsuits-for-w-va-layoffs> (“The ‘war on coal/domestic energy’ that is being waged by the Obama Administration, Congress, Robert Kennedy Jr., Al Gore, environmentalists and Hollywood celebrities is hitting home in West Virginia, [West Virginia Chamber of Commerce President Steve] Roberts said.”).

This essay seeks to promote discussion of the hard choices that lie ahead as coal loses its position as the dominant domestic fuel generating electricity in the United States.<sup>15</sup>

## II. THE WAR ON COAL

As it has for a century, the coal industry's response to the demonstrable negative externalized costs of coal is to deny and/or minimize, while ignoring demands that these costs be internalized. This denial has recently taken the form of a "best defense is a good offense" strategy. Thus, in the years leading up to the 2012 Presidential and congressional elections, coal interests and their political supporters launched a campaign to vilify federal regulators.<sup>16</sup> Their "war on coal" meme targeted the Mine Safety and Health Administration ("MSHA"),

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Use of the term "war" exemplifies the over-the-top hyperbole accompanying this debate. Commentators have criticized the equation of the debate to "war." See Ken Ward Jr., *War is war: Why not call coal debate something else?*, THE CHARLESTON GAZETTE (July 27, 2012) <http://blogs.wvgazette.com/coaltattoo/2012/07/27/war-is-war-why-not-call-coal-debate-something-else/> ("... whether you believe President Obama is out to shut down the entire coal industry or not, everyone from angry laid-off coal miners to top political leaders . . . should just stop calling it a 'war.' War is war. . . People shoot at each other. They drop bombs on each other. We all probably know people who have seen war. To call a political debate a war is insulting to people who actually fought in or died in wars."). See also Mike Harman, *'War on coal' is not a war at all*, THE CHARLESTON GAZETTE, (July 26, 2012), <http://wvgazette.com/Opinion/OpEdCommentaries/201207260080> ("It's hard for me to wrap my head around what the Coal Association refers to as a "war on coal." You mean when the people, through their government, attempt to enact legal limits on environmental degradation and threats to human health?").

<sup>15</sup> Coal use is influenced primarily by public electric generation utilities' fuel choices. U.S. ENERGY INFO. ADMIN., COAL PRODUCTION IN THE UNITED STATES – AN HISTORICAL OVERVIEW, 2 (2006), available at [ftp://ftp.eia.doe.gov/coal/coal\\_production\\_review.pdf](ftp://ftp.eia.doe.gov/coal/coal_production_review.pdf) ("coal demand is driven by the electric power sector, which accounts for 90 percent of consumption, compared to the 19 percent it represented in 1950.").

<sup>16</sup> See, e.g., *EPA's Regulatory Train Wreck: Strategies for State Legislatures*, AMERICAN LEGISLATIVE EXCHANGE COUNCIL (2011), <http://www.alec.org/docs/EPA-TRAIN-WRECK-2011-Final-Full-printres.pdf> [hereinafter ALEC].

Environmental Protection Agency (“EPA”), and Department of the Interiors’ Office of Surface Mining (“OSM”), whose regulatory activities sought to internalize some of the long-externalized coal costs by enforcing statutory mandates enacted to protect miners’ health, safety, and the environment.<sup>17</sup>

In Washington and across the nation, coal and power industry executives, lawyers and lobbyists joined in a concerted effort to stall Obama administration regulatory initiatives affecting coal mining and coal combustion by power plants. For example, the American Coalition for Clean Coal Electricity (“ACCCE”) became “the most visible and aggressive face of the coal lobby in Washington and across the country.”<sup>18</sup> ACCCE members spent “heavily on efforts to weaken and delay regulations aimed at coal pollution, as well as on national television ads—featuring a lump of coal attached to an electric cord—to make the public case for coal-fired electricity.”<sup>19</sup> ACCCE, member companies of the National Mining Association, the United States Chamber of Commerce, and others, as well as anonymous donor political action committees, channeled millions of dollars to support print, radio, and

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<sup>17</sup> See, e.g., Nicolas D. Loris, *The Assault on Coal and American Consumers 2* BACKGROUND: THE HERITAGE FOUNDATION (No. 2709, 2012) (“The Environmental Protection Agency, the Office of Surface Mining Reclamation and Enforcement (OSMRE) in the Department of the Interior, and the Mine Safety and Health Administration (MSHA) in the Department of Labor have promulgated a host of new rules that will increase the costs of mining coal, building new plants, and operating existing plants.”), available at [http://thf\\_media.s3.amazonaws.com/2012/pdf/bg2709.pdf](http://thf_media.s3.amazonaws.com/2012/pdf/bg2709.pdf) [hereinafter Loris, *Assault on Coal*]. The author, a Heritage Foundation Fellow, formerly served as an associate at the Charles G. Koch Charitable Foundation. See, Nicolas Loris, THE HERITAGE FOUNDATION (2013), <http://www.heritage.org/about/staff/l/nicolas-loris> (providing a brief biography of Nicolas D. Loris).

· Coral Davenport, *Coal Industry’s New Voice in Washington Is Deeply Rooted in Republican Politics*, NATIONAL JOURNAL (Nov. 6, 2012, 3:30 PM), <http://www.nationaljournal.com/domesticpolicy/coal-industry-s-new-voice-in-washington-is-deeply-rooted-in-republican-politics-20121106>).

<sup>19</sup> *Id.*

television advertisements claiming the Obama Administration's EPA and other federal agencies were engaged in a war on coal.<sup>20</sup>

The primary charge against these agencies was that their proposed regulatory actions would raise costs of mining and burning of coal as well as increase costs of disposal of coal mining and combustion wastes.<sup>21</sup> Moreover, this industry-financed war on coal campaign sought to persuade the public that increased costs engendered by stricter workplace safety and environmental regulations would destroy tens of thousands of jobs and the "way of life" of coalfield families.<sup>22</sup> During the 2012 U.S. Presidential campaign, it was reported "[s]ecretive nonprofits affiliated with oil and coal companies, including Koch Industries [were] hitting President Barack Obama hard for what they call his 'war on coal.'"<sup>23</sup>

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<sup>20</sup> See, e.g., Rachael Marcus, *Koch-funded groups attack Obama for 'war on coal'*, AMERICAN PUBLIC MEDIA (Oct. 18, 2012), <http://www.marketplace.org/topics/elections/campaign-finance/koch-funded-groups-attack-obama-war-coal>. Other examples include American Commitment, which runs WarOnCoal.com. *Id.* It funded ads urging voters to support coal by voting against Obama and Democrats running for U.S. Senate in Ohio and Virginia. *Id.* ("One American Commitment radio ad accuses Obama and [Ohio Sen. Sherrod] Brown of 'betraying coal,' saying their 'war on coal is also a war on jobs.'"). Americans for Prosperity, founded by David Koch, paid for "war on coal" advertising and conducted pro-coal rallies. *Id.* See also Aliya Haq, *Romney's "War on Coal" TV ads mirror coal industry advertising*, POLLUTER WATCH BLOG (Sept. 2012), <http://www.polluterwatch.com/blog/romneys-war-coal-tv-ads-mirror-coal-industry-advertising> ("Coal advertising themes like 'coal is abundant,' 'coal is clean,' and 'EPA kills jobs' are completely integrated now into Presidential and Congressional debates.").

<sup>21</sup> Loris, *Assault on Coal*, *supra* note 18, at 1-2.

<sup>22</sup> See, e.g., FRIENDS OF COAL, *Stop the Epa!!! Coal Mining is a Way of Life*, FACEBOOK, <http://www.facebook.com/StopTheEpaCoalMiningIsAWayOfLife/timeline> ("Mining is a way of life and if it is stopped by the EPA it will kill the local economies and thousands will lose jobs!").

<sup>23</sup> Marcus, *supra* note 21. The investigative report explained:

[T]he nonprofit American Energy Alliance reported that its new ad "Stand with Coal," cost more than a half-million dollars and is running for two weeks in the

This public relations campaign was buttressed by think-tank studies such as a Heritage Foundation white paper that summarized many coal and power industries' accusations:

[T]he Obama Administration has taken actions that significantly reduce coal's share of America's energy portfolio now and in the future. The proposed and newly implemented regulations affecting coal will drive up energy costs for Americans and business owners and destroy jobs, but do little to protect the environment. These regulations will not only drive up the costs of goods and services that promote public health, such as access to affordable heating and air conditioning, but also divert resources away from activities that could truly improve America's public health. They are based on a weak scientific foundation and would significantly increase compliance costs for existing coal plants and effectively bar construction of new ones, which will increase the cost of electricity for consumers and business.<sup>24</sup>

The white paper, echoing other industry critics, identified four general categories of federal regulatory initiatives the alleged government War on Coal would launch to destroy coal's preeminent position in the nation's energy mix. The MSHA regulatory actions cited included the agency's proposal to require use of "proximity detection systems" to protect miners from injuries caused by contact with moving machinery, mandating

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coal-producing states of Ohio and Virginia. The ad accuses President Obama of wanting to bankrupt the coal industry, alleging that his plan is to "kill affordable energy." The American Energy Alliance is a 501(c)(4) nonprofit, which means its donors remain unknown to the public. Its president, Thomas Pyle, is the former director of federal affairs for Koch Industries and former lobbyist for the National Petrochemical and Refiners Association. He also served as a policy analyst for Rep. Tom Delay, R-Texas, according to the Center for Responsive Politics. The American Energy Alliance is affiliated with the Institute for Energy Research, a free-market energy nonprofit that's received backing from the Koch-run Claude R. Lambe Foundation. *Id.*

<sup>24</sup> Loris, *Assault on Coal*, *supra* note 18 at 1.

company examinations of underground work areas for violations of “mandatory health or safety standards,” lowering levels of black-lung-causing respirable coal mine dust, and institution of enforceable standards for MSHA to use to identify “patterns of violations” in coal mines whose poor safety records require enhanced enforcement strategies.<sup>25</sup>

Also high on the power and coal interests’ list of war on coal issues were EPA Clean Water Act regulatory proposals involving (1) power plant cooling water intake structures, (2) stream fill permit procedure under section 404 of the Act, and (3) an Interior Department rulemaking that sought to identify buffer zones near streams to be designated as off limits to mountaintop removal strip mining and disposal of coal mining wastes.<sup>26</sup>

EPA Clean Air Act (“CAA”) regulatory proposals made up the greatest number of industry complaints.<sup>27</sup> Those proposals included EPA’s Cross-State Air Pollution Rule, Mercury and Air Toxics (“Utility MACT”) Standards, Ozone National Ambient Air Quality Standards (“NAAQS”) and New Source Review (“NSR”) limits. EPA’s rulemaking initiative considering regulation of wastes generated by power plant coal combustion rounded out the categories of government action decried by coal and power industry interests.<sup>28</sup> A review of these allegations follows.

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<sup>25</sup> *Id.* at 2, 9-11.

<sup>26</sup> *Id.* at 6, 8-9.

<sup>27</sup> *Id.* at 3-7.

<sup>28</sup> As the 2012 U.S. Presidential election campaign entered its final phase, the majority party in the house of Representatives passed a bill that would have repealed all of the Obama Administrations Clean Air Act rulemaking initiatives. *See*, H.R. 3409, “Coal Miner Employment and Domestic Energy Infrastructure Protection Act,” or “Stop the War on Coal Act of 2012” (passed by U.S. House of Reps., Sept. 12, 2012). Section 330 of the bill would have amended the Clean Air Act to prohibit the Administrator of EPA from “promulgating any regulation concerning, take action relating to, or take into consideration the emission of a greenhouse gas to address climate change.” *Id.* at § 330(b)(1)(A). The bill would also have amended section 302(g) of the Clean Air Act to exclude “greenhouse gas” from the definition of “air pollutant” and repealed all of the

A. *Mine Safety Regulation*

1. Proximity Detection Systems

The Mine Safety and Health Administration proposed a new rule in 2011 that would require proximity detection systems be installed on continuous mining machines.<sup>29</sup> MSHA explained that “[m]iners working near continuous mining machines face pinning, crushing, and striking hazards that have resulted, and continue to result, in accidents involving life threatening injuries and death.”<sup>30</sup>

MSHA reported that during the period from 1984-2010, thirty deaths and 220 pinning, crushing, and striking injuries could have been prevented by installation of proximity detection devices on continuous mining machines.<sup>31</sup> MSHA’s analysis of fatalities and non-fatal accidents during this twenty-six year period indicated “many of these accidents occurred in confined areas in underground coal mines where a proximity detection system could have warned the miners and stopped the machines before the accident.”<sup>32</sup>

MSHA asserted “proximity detection systems are needed because training and outreach initiatives alone have not prevented these accidents and the systems can provide necessary protections for miners.”<sup>33</sup> Coal

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major rulemaking action of the Obama Administration’s EPA. *Id.* at §§ 330(b)(1)(B), (b)(4)(A-K).

<sup>29</sup> Proximity Detection Systems for Continuous Mining Machines in Underground Coal Mines, 76 Fed. Reg. 54,163- 54,179 (Aug. 31, 2011) (to be codified at 30 C.F.R. pt. 75).

<sup>30</sup> *Id.* at 54,163; *see also*, U.S. DEP’T. OF LABOR, MSHA SAFETY ALERT (2012) (“Since January 1, 2010, eighty five miners have been injured by mobile equipment including eight miners who were killed in accidents involving mobile face equipment . . . [o]f the total number of miners injured, twenty six were permanently partially or totally disabled from accidents involving mobile equipment and fifty one had lost time accidents involving continuous miners, shuttle cars, ramcars, mantrips and scoops.”), *available at* <http://www.msha.gov/Alerts/StruckbyAccidents62012.pdf>.

<sup>31</sup> 76 Fed. Reg. at 54,164.

<sup>32</sup> *Id.*

<sup>33</sup> *Id.*

industry lobbyists complained that the proposed eighteen-month timeline for implementation would be impossible to meet and that implementing the rule would take at least twenty-four months.<sup>34</sup>

## 2. Examinations For “Mandatory Health or Safety Standard” Violations

EPA proposed a new rule that would change the duties of coal company-employed mine examiners.<sup>35</sup> Historically the job of the mine examiner or “fire boss” has been to identify hazardous conditions in underground coal mines.<sup>36</sup> The new rule would require company employees to identify violations of certain types of MSHA health or safety standards. MSHA explained that:

The final rule requires operators to be more proactive in their approach to mine health and safety and to find and fix violations of health or safety standards in the final rule before they become hazardous. As a result, conditions that might have been identified only by MSHA inspectors will

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<sup>34</sup> Memorandum from Ernal Shaw, Safety Manager for Bowie Resources, Comments on the Proposed Rule Proximity Detection Systems for Continuous Mining Machines in Underground Coal Mines, to Mine Safety and Health Administration, U.S. Dep’t of Labor (Nov. 23, 2011), *available at* <http://www.msha.gov/REGS/Comments/2011-22125/AB65-2COMM-20.pdf>. *See also*, Letter from John Gallick, representative for Alpha Natural Resources, Comments on the Proposed Rule Proximity Detection Systems for Continuous Mining Machines in Underground Coal Mines, to Roslyn Fontaine, acting director, Office of Standards, Regulations, and Variances, Mine Safety and Health Admin., U.S. Dep’t of Labor (Nov. 28, 2011), *available at* <http://www.msha.gov/REGS/Comments/2011-22125/AB65-2COMM-28.pdf>.

<sup>35</sup> Examinations of Work Areas in Underground Coal Mines for Violations of Mandatory Health or Safety Standards, 77 Fed. Reg. 20,700-16 (Apr. 6, 2012) (to be codified at 30 C.F.R. pt. 75).

<sup>36</sup> *A Pictorial Walk Through the 20th Century: Mine Rescuers*, MINE SAFETY AND HEALTH ADMINISTRATION (last visited Feb. 16, 2013) (quoting U.S. BUREAU OF MINES, A DICTIONARY OF MINING, MINERAL, AND RELATED TERMS (1967)) (“A [fireboss is] a state certified supervisory mine official who examines the mine for firedamp, gas, and other dangers before a shift comes into it and who usually makes a second examination during the shift . . .”), *available at* <http://www.msha.gov/century/rescue/rstart.asp>.



now be found and corrected by the operator, and a culture of safety will be fostered at the mine. The final rule will also promote this culture of safety by requiring operators to review with mine examiners, on a quarterly basis, citations and orders issued in areas where preshift, supplemental, on-shift, and weekly examinations are required. The final rule will enhance miners' safety because violations of health or safety standards that present the greatest risks will be identified and corrected, removing many of the conditions that could lead to danger in underground coal mines.<sup>37</sup>

While conceding this “sounds beneficial,” industry lobbyists complained that, in the past, company-paid examiners have not received the same training as government mine inspectors, nor have they been required to cite specific violations of the type identified by MSHA inspectors.<sup>38</sup> They also asserted the new rule would distract from the company examiner's core function of recognizing and preventing hazardous conditions.<sup>39</sup>

A lawyer who represents coal industry clients viewed the amended regulation as creating an “absurd . . . Catch-22 effect” that will “transform

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<sup>37</sup> 77 Fed. Reg. at 20,702-03. An MSHA study reported that 50 percent of the total violations at underground coal mines in 2009 involved violation of nine standards regulating accumulations of combustible materials; violations of ventilation and roof control plans; insufficient incombustible content of rock dust; improperly constructed airlock doors; and improperly maintained ventilation controls. *Id.* at 20,702. These conditions “present some of the most unsafe conditions in underground coal mines.” *Id.*

<sup>38</sup> Loris, *Assault on Coal*, *supra* note 18, at 9-10.

<sup>39</sup> *See, e.g.*, Transcript of Proceedings, Examinations of Work Areas in Underground Coal Mines for Violations of Mandatory Health or Safety Standards, MINE SAFETY AND HEALTH ADMIN. (June 7, 2011) (transcript of statement of J. Gallick, Vice President-Safety of Alpha Natural Resources), *available at* <http://www.msha.gov/REGS/Comments/2010-32410/Transcripts/20110607CharlestonWV.pdf>.

... mine examiners into mine inspectors.”<sup>40</sup> “[T]his . . . blatant destruction of Due Process principles” he asserted, would make “mine operators and examiners directly responsible for supplying the evidence to establish their own legal liability.”<sup>41</sup> Interestingly, the same industry lawyer recognized that the mandatory examination rule would trigger precisely the type of response from coal operators and fire bosses that would make it more likely that dangerous conditions would be identified and corrected by the operator, thus promoting “a culture of safety” at the mine—a goal of the MSHA rulemaking:

. . . mine operators must take great care to navigate the legal uncertainties created by MSHA’s final rule on coal mine examinations . . . . This rule should not be taken lightly. Mine operators should implement aggressive training programs to adequately prepare its examiners to ensure compliance and provide the necessary resources to ensure the examiners can fulfill their obligations. Such training also should aim at changing the culture of examinations at the mine from one of a routine job duty to one of a legal duty with serious ramifications for the company and the individual. These efforts, while expensive on the front end, will help restrain the potential increased corporate and personal liability posed by the final rule and will help all mine operators meet their goals of improving mine safety and being profitable.<sup>42</sup>

In sum, the proposed regulation alleged to be part of a government “war on coal” will impose financial costs on coal operators. Most importantly, the proposed regulation promises to reduce costs previously externalized—coal miner injuries and deaths.

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<sup>40</sup> Max Corley, *MHSA’s Final Rules of Examinations, The Ultimate “Catch 22” for Coal Mine Operators*, DINSMORE (July 16, 2012),

[http://www.dinsmore.com/msha\\_final\\_rule\\_on\\_examinations/](http://www.dinsmore.com/msha_final_rule_on_examinations/).

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

### 3. Respirable Dust Regulation

Coal Industry lobbyists claim MSHA's regulatory initiative to reduce miner exposure to black-lung-causing coal dust constitutes agency "overreaching."<sup>43</sup> MSHA proposed to drop the existing ambient respirable dust standard, set in 1973, from 2.0 milligrams per million to 1.0. The agency further proposed to use single-shift dust sampling rather than averaging of shifts. MSHA would also require ambient dust sampling be accomplished by continuous personal dust monitors worn by miners.<sup>44</sup> In proposing the new black lung rules, MSHA explained:

Exposure to respirable coal mine dust can cause lung diseases including coal workers' pneumoconiosis (CWP), emphysema, silicosis, and chronic bronchitis, known collectively as "black lung." These diseases are debilitating, incurable, and can result in disability, and premature death. While considerable progress has been made in reducing the respirable coal mine dust levels, miners continue to develop black lung. Based on recent data from the National Institute for Occupational Safety and Health . . . the prevalence rate of black lung is increasing in our nation's coal miners; even younger miners are showing evidence of advanced and seriously debilitating lung disease. Black lung is a preventable disease.<sup>45</sup>

MSHA asserted that "[c]umulatively the proposed provisions would reduce . . . continued risks . . . from exposure to respirable coal mine dust" and provide coal miners additional protection from black lung's "debilitating effects."<sup>46</sup>

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<sup>43</sup> Loris, *Assault on Coal*, *supra* note 18, at 10.

<sup>44</sup> See Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors, 75 Fed. Reg. 64,412 (Oct. 19, 2010) (to be codified at 30 C.F.R. pt. 70-72, 75, 90).

<sup>45</sup> *Id.* at 64,413.

<sup>46</sup> *Id.*

The industry attacked the proposed rule, decrying the mandate that respirable dust sampling be accomplished by miners wearing untried continuous personal dust monitors MSHA would rely on to obtain data on workplace dust exposure.<sup>47</sup> Industry foes of the regulation also assert MSHA did not use the best available science to justify lowering the coal dust standard.<sup>48</sup> Comments on the proposed MSHA rules by a lobbyist for the Virginia Coal Association typifies the position of many in the coal industry:

In the past, MSHA's controversial dust sampling and analysis system has been repeatedly criticized by the mining industry, the judiciary, advisory committees, and Congress . . . this program has suffered continual rebuffs. Restoring confidence in the MSHA dust-sampling program cannot be achieved with rules that ignore the latest and best science, technology, research and accepted risk assessment and medical practice.<sup>49</sup>

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<sup>47</sup> See John Heard, *Comment On: MSHA-2010-0007-0001 Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors* (June 20, 2011) ("The proposed rule . . . would implement massive, complex changes based on unproven technology and procedures that will create hundreds of thousands of inaccurate results and unjustified enforcement actions where no health risks exist"), available at <http://www.msha.gov/REGS/Comments/2010-25249/AB64-COMM-89.pdf> [hereinafter *Dust Rule Comment*].

<sup>48</sup> Eva Suarathana, et al., *Coal Workers' Pneumoconiosis in the United States: Regional Differences 40 Years After Implementation of the 1969 Federal Coal Mine Health and Safety Act*, 68 OCCUPATIONAL ENVTL. MED. 908, 908-913 (emphasizing the need for more study to identify the contributing factors to pneumoconiosis); Edward M. Green, Comments on Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors, Proposed Rule, e-mail to Roslyn B. Fontaine, Office of Standards, Regulations, and Variances, Mine Safety and Health Admin. 4 (June 20, 2011) (asserting that while continuous personal dust monitors can reliably measure relative differences in dust exposure, they should not be used to determine numeric compliance with any federal regulation.) <http://www.msha.gov/REGS/Comments/2010-25249/AB64-COMM-73.pdf>.

<sup>49</sup> *Dust Rule Comment*, *supra* note 48 at 5.

It is certainly true, as the lobbyists' comments suggest, that the coal industry has a long history of resistance to regulation aimed at limiting respirable dust exposure of coal miners.<sup>50</sup> Indeed for the better part of a century the industry challenged the very fact that inhalation of coal dust was the cause of black lung disease.<sup>51</sup>

Historically, with regard to reducing the incidence of black lung, the industry has generally demurred to MSHA rather than taking the initiative itself. Once again, the industry's response to rising incidence of black lung and the current MSHA proposal in response thereto has been to criticize the agency's efforts while counseling delay for further study of dust control technology.

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<sup>50</sup> See Brian C. Murchison, *Due Process, Black Lung, And The Shaping Of Administrative Justice*, 54 ADMIN. L. REV. 1025 (2002) Murchison explains the decades-long strategy of industry denial that coal dust had the capacity to harm miners:

By 1930, the "denial of coal workers' respiratory difficulties had triumphed in the United States," due to a host of factors that historians are still trying to understand. One factor was the stance of company physicians that inhaling coal mine dusts was harmless because the body was naturally equipped to expectorate "deposits of carbon" and thus purify itself. Another claim was that inhaling carbonaceous dusts was in fact beneficial to miners' health because it caused fibrotic formations which supposedly prevented tubercular bacilli "from getting a foothold" in the lungs. A third industry position was that the only real danger posed by either anthracite or bituminous mining was inhalation of "silicious dusts associated with sandstone, slate, and other minerals that occurred with coal deposits." According to industry doctors, miners with dust-induced lung disease must have inhaled dust containing rock dust, since inhaling particles of coal "posed no hazard at all." This effort to equate all mine dust disease with silicosis became the conventional wisdom; the only conceded effect of inhaling coal particles without significant silica was anthracosis, which coal interests insisted was not a disease but a discoloration of the lung.

Id. at 1040–41 (citations omitted).

<sup>51</sup> Id.

What the Virginia Coal Association lobbyist and many in the coal industry fail to acknowledge is that developing a methodology and technology to end the scourge of black lung afflicting the nation's coal miners need not depend on government regulation. The stark reality lobbyists choose to ignore is that the coal industry and individual coal companies have long possessed the power to act independently of government regulators. There are no impediments to the coal industry developing such methods and technology to protect miners from exposure to black-lung-causing respirable dust in the workplace. Delay in implementing new methodology and technology to reduce miners' exposure to respirable dust means benefits to companies through avoidance of compliance expenses and coal continued externalization of costs—in the form of continued suffering and death of miners and attendant impacts on their families and coalfield communities.

#### 4. Pattern of Violations Regulation

The federal mine safety and health act has long provided an enforcement mechanism MSHA could use to force compliance when a coal mine is found to have a “pattern of violations” or “POV” --- in other words, a poor safety record.<sup>52</sup> Once MSHA identifies a mine as having a POV, agency inspectors gain enhanced authority to order cessation of mining in all or part of a mine until compliance is achieved.<sup>53</sup> However, for thirty-two years MSHA never utilized the POV enforcement option as a deterrent to get the attention of managers of mines cited for serious and persistent health and safety violations.<sup>54</sup>

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<sup>52</sup> 30 U.S.C. § 814(e) (2012).

<sup>53</sup> *Id.* at § 814(e)(2).

<sup>54</sup> *See*, OFFICE OF THE INSPECTOR GENERAL, DEP'T OF LABOR, REPORT NO. 05-10-005-06-001, AUDIT OF MSHA PATTERN OF VIOLATION AUTHORITY 2 (Sept. 29, 2010); *available at* <http://www.oig.dol.gov/public/reports/oa/2010/05-10-005-06-001.pdf>. The Inspector General found:

“MSHA has not successfully exercised its POV authority in 32 years. Administration of this authority has been hampered by a lack of leadership and priority in the Department across various administrations. MSHA took

MSHA first moved to strengthen its POV regulations after the 2006 Sago, West Virginia mine explosion that resulted in the deaths of thirteen miners.<sup>55</sup> The Sago mine had numerous serious violations, but was never cited for having a POV.<sup>56</sup> MSHA's effort at strengthening the POV rule proved ineffective when many coal operators embraced a strategy of responding to most citations by lodging appeals with the federal Mine Safety and Health Review Commission ("MSHRC").<sup>57</sup> Coal

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13 years to finalize POV regulations. Those regulations created limitations on MSHA's authority that were not present in the enabling legislation and made it difficult for MSHA to place mines on POV status. For the next 17 years, MSHA Districts performed POV analyses based on individual interpretations of requirements, but never put any mine operator on POV status. In 2007, MSHA attempted to implement a standardized method based on quantitative data for identifying potential POV mines. However, (a) the process was unreliable and (b) the criteria were complex and lacked a supportable rationale."

available at <http://www.oig.dol.gov/public/reports/oa/2010/05-10-005-06-001.pdf>.

<sup>55</sup> *Id.* at 8 ("Following the fatal accidents at Sago, Darby, and Aracoma mines in early 2006, MSHA began work on developing a national POV screening process based on quantitative data. MSHA's Internal Review Report on the Sago mine accident had concluded that POV criteria were ineffective and recommended that MSHA revise its POV screening criteria.").

<sup>56</sup> MINE SAFETY & HEALTH ADMIN., INTERNAL REVIEW OF MSHA'S ACTIONS AT THE SAGO MINE WOLF RUN COAL COMPANY, SAGO, UPSHUR COUNTY, WEST VIRGINIA 39 (June 28, 2007), available at <http://www.msha.gov/readroom/FOIA/2007InternalReviews/Sago%20Internal%20Review%20Report.pdf>. (The Mine Safety & Health Administration is an agency of the U.S. Department of Labor. MINE SAFETY AND HEALTH ADMINISTRATION, <http://www.msha.gov/> (last visited Mar. 11, 2013).

<sup>57</sup> See generally *Putting Safety First: Strengthening Enforcement and Creating a Culture of Compliance at Mines and Other Dangerous Workplaces: Hearing Before the S. Comm. on Health, Ed., Labor & Pensions*, 112th Cong. (2010) (Statement of Joseph A. Main, Asst. Sec. of Labor for Mine Safety & Health), available at <http://www.msha.gov/MEDIA/CONGRESS/2010/20100427JoeMainTestimony.pdf> [hereinafter *POV Statement*]. Secretary Main testified that:

companies filed these appeals knowing that, under the then-existing POV rule, those violations could not be used in calculating whether a mine should be placed on a POV list and subjected to enhanced enforcement action.<sup>58</sup> Under that rule, the cited violations could not be factored into the POV calculus until each violation was fully and finally adjudicated.<sup>59</sup> A backlog of thousands of coal operator appeals resulted in years-long delay because of the inability of an understaffed and underfunded Review Commission to process the cases to final adjudication in a timely manner.<sup>60</sup>

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Even where the violation is obvious, operators have a huge incentive to contest the violation. A contest blocks MSHA from using the violation – even the obvious ones – to put the mine into a potential pattern of violations for an average 500 days after the case has been contested. For operators with troubling safety records, that may amount to 500 days without having to worry about being put into a “pattern of violations” status. In fact, the Upper Big Branch mine contested the majority of its serious violation citations. From 2007 to 2009, the mine contested 77% of its S&S [significant and substantial]” violations.”

*Id.* at 11.

<sup>58</sup> *Id.*

<sup>59</sup> *Id.* at 14. Secretary Main explained that:

Under current regulations, MSHA only considers violations that have become final orders of the FMSHRC. Citations and orders that are under contest, no matter how egregious, are not considered in establishing that a mine has a potential pattern of violations. Once a potential pattern is found, an operator has a notice period to reduce the number of S&S violations at its mine. If the operator fails to reduce the number of violations, only then are they placed in pattern of violations status. By the time the current process is over, mine operators are being considered for pattern of violations status based on violations that, in many cases, were written years ago.

*Id.*

<sup>60</sup> *Id.* at 11. In his testimony before a Senate Committee shortly after the Upper Big Branch mine disaster, the MSHA’s chief administrator explained how Massey Energy and other coal operators “gamed the system” to avoid POV designation:



After three decades of failing to effectively utilize the authority given it by the Mine Act, MSHA finally acted to alter the POV rule in an effort to render it an effective enforcement tool.<sup>61</sup> The impetus for this long overdue initiative was the 2010 Upper Big Branch (“UBB”) Mine explosion that had killed twenty-nine West Virginia miners.<sup>62</sup> The UBB mine had been cited hundreds of times for serious safety violations, but MSHA failed to make a pattern finding.<sup>63</sup> Had MSHA made such a

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Massey Energy employed a popular tactic at Upper Big Branch used by mines with troubling safety records to avoid potential pattern of violations status. Massey Energy contested large numbers of their significant and substantial citations. In Calendar Year 2009, the Massey Energy Company was assessed penalties that totaled in excess of \$13.5 million, and contested \$10.5 million of those penalties, or 78 percent. MSHA uses only final orders to establish a pattern of violations. It takes more than 600 days for the average contested citation to reach the “final order” stage from the day the citation is written. The delay is due largely to a more than 16,000 case backlog at the independent Federal Mine Safety and Health Review Commission (FMSHRC).

*Id.*

<sup>61</sup> Pattern of Violations, 76 Fed. Reg. 5,719-29 (Feb. 2, 2011) (to be codified at 30 C.F.R. pt. 104)

<sup>62</sup> Kyle W. Morrison, *The Need for Reform ... Again: The Worst Mining Disaster in Decades Spurs Questions of Oversight, Accountability*, NAT’L SAFETY COUNCIL (“Even though a full report from MSHA into the April 5 [UBB] blast may not come for several months, officials already have begun steps to improve oversight and mine compliance with current law . . . On MSHA’s latest regulatory agenda, the agency proposed a standard that would require mines to have a comprehensive health and safety management program, as well as another rule reinstating pre-shift examinations for violations in certain areas of mines.”), [http://www.nsc.org/safetyhealth/Pages/610Mining.aspx#.UOpKaWs8\\_s](http://www.nsc.org/safetyhealth/Pages/610Mining.aspx#.UOpKaWs8_s) (last visited Mar. 1, 2013).

<sup>63</sup> *POV Statement*, *supra* note 56, at 5-6. Secretary Main testified that:

Upper Big Branch mine again experienced a significant spike in safety violations in 2009. MSHA issued 515 citations and orders at the mine in 2009 and another 124 to date in 2010. MSHA issued fines for these

finding, inspectors could have ordered the UBB mine closed until compliance was assured.<sup>64</sup> However, the mine operator, Massey Energy, appealed ninety-two percent of all citations UBB received.<sup>65</sup> Those appeals were added to the MSHRC backlog of pending cases. Thus, the then-extant rule prevented MSHA from designating UBB as a mine with a POV and from using the enhanced enforcement power triggered by the designation to put a stop to the mine operators' flagrant violation of basic

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violations of nearly \$1.1 million; though, most of those fines are being contested by Massey. The citations MSHA has issued at Upper Big Branch have not only been more numerous than average, they have also been more serious. Over 39% of citations issued at Upper Big Branch in 2009 were for S&S [significant and substantial] violations. In some prior years, the S&S rate at Upper Big Branch has been 10-12% higher than the national average. In what is perhaps the most troubling statistic, in 2009, MSHA issued 48 withdrawal orders at the Upper Big Branch Mine for repeated actions that could significantly and substantially contribute to a hazard that the operator knew or should have known violated safety and health rules. Massey failed to address these violations over and over again until a federal mine inspector ordered it done. The mine's rate for these kinds of violations is nearly 19 times the national rate.

*Id.*

<sup>64</sup> *Id.* at 5.

<sup>65</sup> *Learning from the Upper Big Branch Tragedy: Hearing Before the H. Comm. on Educ. & the Workforce*, 112th Cong. 2 (Mar. 27, 2012) (statement of MSHA Administrator Joe Main), available at: [http://edworkforce.house.gov/uploadedfiles/03.27.12\\_main.pdf](http://edworkforce.house.gov/uploadedfiles/03.27.12_main.pdf) ("The UBB disaster underscored the need to address the backlog of cases at the Federal Mine Safety and Health Review Commission . . . . At the time of the disaster PCC/Massey was contesting 92 percent of the penalty dollars proposed by MSHA, adding to the backlog. In addition, because its cases were not being resolved in a timely fashion, the penalties did not have the intended deterrent effect on Massey's conduct. In fact, Massey had \$1.3 million in pending proposed penalties right before the explosion.").

mine safety rules—violations that investigators found contributed to the UBB explosion and the death of twenty-nine miners.<sup>66</sup>

MSHA's proposed new rule sought to forestall the strategy of some coal companies to file administrative appeals as a means to avoid MSHA application of POV enhanced enforcement sanctions.<sup>67</sup> It would also give MSHA the authority to determine when a pattern exists at a mine by including in the POV calculus those violations that are on appeal and have not been finally adjudicated by the MSHRC.<sup>68</sup>

Coal lobbyists objected to the proposed rule as a “guilty-until-proven-innocent approach” to mine safety law enforcement.<sup>69</sup> They also have complained the proposed rule no longer requires MSHA to issue a written warning to a mining operation giving the company time to come into compliance and avoid POV designation.<sup>70</sup> Finally, coal interests argued that the proposed rule was so ambiguous as to constitute a denial of due process and that it would prove to be unnecessarily costly in implementation.<sup>71</sup> Industry also challenged MSHA's estimate of the

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<sup>66</sup> J. Davitt McAteer et al., *Upper Big Branch: The April 5, 2010, Explosion: A Failure Of Basic Coal Mine Safety Practice: Report to The Governor*, NAT'L. TECH. TRANSFER CTR., (2010), available at

<http://nttc.edu/programs&projects/minesafety/disasterinvestigations/upperbigbranch/UpperBigBranchReport.pdf>. After an inquiry that continued for more than a year, the West Virginia Governor's Independent Investigation Panel reached the conclusion that “the explosion at the Upper Big Branch mine could have been prevented.” The report found that “the explosion was the result of failures of basic safety systems identified and codified to protect the lives of miners.” *Id.*

<sup>67</sup> See, e.g., Bruce Watzman, *RIN 1219-AB73; Comments on MSHA's Proposed Rule for Pattern of Violations*, NAT'L. MINING ASS'N (2011), <http://www.msha.gov/REGS/Comments/2011-2255/AB73-COMM-73.pdf>.

<sup>68</sup> Pattern of Violations, 76 Fed. Reg. 5,721 (Feb. 2, 2011).

<sup>69</sup> Loris, *Assault on Coal*, *supra* note 18, at 10; see also Watzman, *supra* note 66, at 2-7.

<sup>70</sup> Watzman, *supra* note 66, at 12.

<sup>71</sup> *Id.* at 6. See also David A. Gooch, *Comments on MSHA's Proposed Rule for Pattern of Violations*, COAL OPERATORS & ASSOC. (2011),

<http://www.msha.gov/REGS/Comments/2011-2255/AB73-COMM-30.PDF>.

benefits that would accrue if the proposed POV rule were to become effective.<sup>72</sup>

## B. *Clean Water Act and SMCRA Regulation*

### 1. Power Plant Cooling Water Intake Structures Regulation

Many power plants, including coal-fired plants use large volumes of water from streams, lakes, rivers, and oceans as “cooling water” in the process of condensing steam used to generate electricity.<sup>73</sup> The cooling water is ultimately returned to its original source.<sup>74</sup> The discharge of heated water into surface waters is regulated by section 316 of the Clean Water Act (“CWA”).<sup>75</sup> According to EPA estimates, every year electric power generating units kill hundreds of billions of aquatic organisms in the nation’s waters.<sup>76</sup>

Coal lobbyists oppose an EPA-proposed rule that would require changes to cooling water intake structures to implement “best technology

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<sup>72</sup> Waltzman, *supra* note 66, at 14.

<sup>73</sup> U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-12-635, EPA REGULATIONS AND ELECTRICITY: BETTER MONITORING BY AGENCIES COULD STRENGTHEN EFFORTS TO ADDRESS POTENTIAL CHALLENGES 15-16 (2012), <http://www.gao.gov/products/GAO-12-635> [hereinafter EPA REGULATIONS AND ELECTRICITY].

<sup>74</sup> *Id.* at 16 n.24.

<sup>75</sup> 33 U.S.C. § 1326(b) (2012).

<sup>76</sup> EPA REGULATIONS AND ELECTRICITY, *supra* note 72, at 16 (“Coal and other types of electricity generating units often draw in large volumes of water from nearby rivers, lakes, or oceans to use for cooling, which can damage aquatic life . . . generating units kill hundreds of billions of aquatic organisms in U.S. waters each year, including fish, crustaceans, marine mammals, and other aquatic life.”). *See also* U.S. EPA, *Environmental and Economic Benefits Analysis for Proposed Section 316(b) Existing Facilities Rule*, EPA 821-R-11-001, (2011), <http://water.epa.gov/lawsregs/lawsguidance/cwa/316b/upload/environbenefits.pdf>; *and see generally* National Pollutant Discharge Elimination System—Cooling Water Intake Structures at Existing Facilities and Phase I Facilities, 76 Fed. Reg. 22,174 (Apr. 22, 2011) (to be codified at 40 C.F.R. pt. 122, 125).

available" to minimize adverse impacts of the heated water on aquatic life.<sup>77</sup> According to one industry commentator, the proposed rule "imposes inflexible numeric requirements" and "fails the cost-benefit analysis test."<sup>78</sup> The proposed rule, industry advocates claim, ignores site-specific requirements, and alternative methods that power plants use to protect fish populations, as well as the capability of state regulators to manage § 316(b) requirements.<sup>79</sup>

## 2. Section 404 Stream Fill Permits

The United States Army Corps of Engineers ("Corps") administers §404 of the CWA with EPA guidance and oversight—including the power of EPA to veto certain regulatory actions.<sup>80</sup> The CWA allows EPA discretion to review and comment on coal companies' §404 permit applications.<sup>81</sup> EPA may veto issuance of such permits by the Corps when it determines use of such sites for disposal of mine waste would have an unacceptable adverse impact on one or more of various resources, including fisheries, wildlife, municipal water supplies, or recreational areas.<sup>82</sup>

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<sup>77</sup> The statutory basis for the proposed rule is Clean Water Act, specifically 33 U.S.C. §1326(b).

<sup>78</sup> Loris, *Assault on Coal*, *supra* note 18, at 6.

<sup>79</sup> *Id.*; see also NUCLEAR ENERGY INST., ISSUES IN FOCUS: WATER USE AND ELECTRICITY PRODUCTION 1 (2011),

[http://www.nei.org/corporatesite/media/filefolder/Issues\\_in\\_Focus\\_-\\_Water\\_Use.pdf](http://www.nei.org/corporatesite/media/filefolder/Issues_in_Focus_-_Water_Use.pdf).

<sup>80</sup> See 33 U.S.C. § 1344(c); see generally *Nat'l Mining Ass'n. v. Jackson*, 768 F. Supp. 2d 34, 38-41 (D.D.C. 2011) (explaining the CWA permitting scheme applicable to placement of fill material into waters of the United States).

<sup>81</sup> 33 U.S.C. § 1344(j) (2012).

<sup>82</sup> See Clean Water Act § 404(c), 33 U.S.C. § 1344(c). *But see*, *Mingo Logan Coal Co. v. EPA*, 850 F. Supp. 2d 133 (D.D.C. 2012) (concluding that EPA exceeded its authority under § 404(c) "when it attempted to invalidate an existing permit by withdrawing the specification of certain areas as disposal sites after a permit had been issued by the Corps under" § 404(a)); see also *Nat'l Mining Assn.*, 768 F. Supp. 2d at 49-50 (finding EPA's attempt to establish new process for reviewing § 404 permit applications invalid for failure of agency to utilize APA's notice and comment requirement).

EPA, in cooperation with the Corps, is responsible for developing and executing guidelines for evaluation of environmental impacts of valley fill activities outlined in permit applications.<sup>83</sup> Large scale coal strip mining operations, mountaintop removal (“MTR”) mines, must obtain section §404 permits to dispose coal mine spoil (waste) in valley fills that have already buried more than 2000 miles of headwater streams in central Appalachia.<sup>84</sup>

From 2005 to 2009 EPA and the Corps’ process for administering the CWA §404 permit program was the focus of federal district court litigation brought by environmental and conservation groups.<sup>85</sup> The district court issued injunctions curtailing the processing of §404 permit

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<sup>83</sup> 33 U.S.C. § 1344(b) (2012). EPA and the Corps jointly developed CWA § 404(b)(1) guidelines, identifying environmental criteria to be used by regulators to evaluate fill permit applications. Thus, the *Guidelines for Specification of Disposal Sites for Dredged or Fill Material* are codified at 40 C.F.R. § 230.1-230.98.

<sup>84</sup> See OFFICE OF INSPECTOR GEN., U.S. EPA, REPORT NO. 12-P-0081, CONGRESSIONALLY REQUESTED INFORMATION ON THE STATUS AND LENGTH OF REVIEW FOR APPALACHIAN SURFACE MINING PERMIT APPLICATIONS 2 (2011) [hereinafter EPA INSPECTOR GEN. REPT.], <http://www.epa.gov/oig/reports/2012/20111121-12-P-0083.pdf>; see also *Ohio Valley Envtl. Coal., Inc., v. U.S. Army Corps of Eng’rs*, 883 F. Supp. 2d 627 (S.D.W. Va. 2012). There the district court explained the context in which the Corps is asked to determine whether a § 404 fill permit should issue:

Surface coal mining operations recover horizontal seams of coal that are layered in mountains by removing the overburden above the seams to extract the coal. Federal law requires that the overburden be replaced to match the approximate original contour of the mountain. However, once the overburden is taken from its natural state and broken up, it, “swells’, perhaps by as much as 15-25%.” This excess overburden is disposed of in valley fills, often burying ephemeral, intermittent, and perennial streams near the mountaintop. The valley fills themselves are constructed with diversions and underdrain systems to control erosion and runoff, and to ensure stability of the fill. Ordinarily, a sediment pond is constructed below a valley fill to collect the flow of water as it comes off of a valley fill. . . . [T]he construction of the valley fill and the embankment to create the sediment pond both require a § 404 permit from the Army Corps.

*Id.* at 631-32 (internal citation omitted).

<sup>85</sup> See, EPA INSPECTOR GEN. REPT., *supra* note 83 at 8.

applications.<sup>86</sup> As the litigation proceeded over several years A backlog of the pending applications grew larger as the litigation proceeded over several years.<sup>87</sup> In early 2009, the United States Court of Appeals for the 4th Circuit reversed a district court opinion that had rescinded four §404 permits in West Virginia.<sup>88</sup> At the time of the Court of Appeals' decision, there were 108 pending §404 applications seeking to construct valley fills in Appalachian streams.<sup>89</sup> The EPA issued Enhanced Coordination Procedures ("ECP") in the summer of 2009. The ECP was intended to efficiently process the backlog of permit applications.<sup>90</sup> Additionally, the ECP was used to review both the environmental impacts of MTR mining and associated valley fills, as well as EPA's role in the CWA §404 permitting process.<sup>91</sup> Within a few months, the backlog of §404 permit applications was reduced from 108 to 79.<sup>92</sup>

Coal industry proponents have asserted that, in instituting the ECP, EPA abused its power to place holds on coal mine permit applications.<sup>93</sup> Industry lobbyists also criticized EPA's decision to revoke a Corps §404 permit issued in 2007 to a West Virginia mine.<sup>94</sup> A report issued by the

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<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> *Ohio Valley Envtl. Coal. v. Aracoma Coal Co.*, 556 F.3d 177, 217 (4th Cir. 2009); EPA INSPECTOR GEN. REPT., *supra* note 83, at 8.

<sup>89</sup> *See* EPA INSPECTOR GEN. REPT., *supra* note 83 at 8.

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> *Id.*

<sup>93</sup> MINORITY STAFF, S. COMM. ON ENV'T & PUB. WORKS, REPORT ON THE OBAMA ADMINISTRATION'S OBSTRUCTION OF COAL MINING PERMITS IN APPALACHIA 2 (2010) [hereinafter U.S. SEN. COMM. ENVIRON. & PUB. WORKS], available at [http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=ba11c7e3-2078-4e37-817c-04c72190be70](http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=ba11c7e3-2078-4e37-817c-04c72190be70) (Asserting that that EPA's failure to issue permits for 190 of 235 coal mining operations had "a deleterious effect on rural jobs, energy production and small businesses in Appalachia."); *see also*, *EPA Mining Policies: Assault on Appalachian Jobs-Part I Before the Subcomm. on Water Res. and Env't, H. Comm. on Transp. and Infrastructure*, 112th Cong. 4 (2011) (statement of Hal Quinn, Pres. Nat'l. Mining Ass'n.), available at [http://www.nma.org/pdf/cong\\_test/050511\\_quinn.pdf](http://www.nma.org/pdf/cong_test/050511_quinn.pdf).

<sup>94</sup> Steven Power & Kris Maher, *EPA Blasted as It Revokes Mine's Permit*, WALL ST. J., Jan. 14, 2011, available at

Senate minority stated that its “investigation found that the Obama Administration is using the Clean Water Act Section 404 permitting process to dismantle the coal industry in the Appalachian region”—echoing the coal and power industries’ claims that the Obama Administration was engaged in a war on coal.<sup>95</sup> The Senate minority report claimed “EPA’s delays in handling these permits are jeopardizing jobs in Appalachia and the energy security of the nation,”<sup>96</sup> “could result in the elimination of one out of every six coal mining jobs”<sup>97</sup> and “will have severe economic repercussions in rural communities.”<sup>98</sup> The report

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<http://online.wsj.com/article/SB10001424052748703583404576079792048919286.html>  
Such criticism is not surprising because, as one commentator observed “[t]he agency had vetoed a corps permit that authorized one of the largest mountaintop removal mining operations in Appalachia, disposing of more than 100 million cubic yards of spoil material and permanently burying more than seven linear miles of streams.” Richard Lazarus, *Poof!*, 29 ENVTL. L. FORUM 12 (2012), available at <http://www.law.harvard.edu/faculty/rlazarus/docs/columns/LazarusColumnRevisedMayJune12.pdf>. Professor Lazarus also noted that the “veto occurred only after years of litigation by environmentalists against the corps’ practice of routinely granting Section 404 permits for mountaintop mining, EPA’s repeated warnings that the corps was not adequately considering environmental effects, and the corps’ denial of EPA’s formal request that it revoke or modify the permit.” *Id.* “EPA said . . . it revoked the permit . . . because it concluded new scientific research on mountaintop-removal mining since then indicated the potential harm to streams and watershed areas surrounding the Spruce project could be significant.” Power & Maher, *supra* note 93. The revocation was only the second time the agency had taken such action in the 39-year history of the federal Clean Water Act. *Id.*; accord, U.S. EPA, *Final Determination of the U.S. Environmental Protection Agency Pursuant to § 404(c) of the Clean Water Act Concerning the Spruce No. 1 Mine, Logan County, West Virginia* 99 (Jan, 13, 2011), available at [http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/upload/Spruce\\_No-1\\_Mine\\_Final\\_Determination\\_011311\\_signed.pdf](http://water.epa.gov/lawsregs/guidance/cwa/dredgdis/upload/Spruce_No-1_Mine_Final_Determination_011311_signed.pdf). The EPA revocation action was subsequently reversed, however EPA appealed that decision. See, *Mingo Logan Coal Co. Inc. v. Env’tl. Prot. Agency*, 850 F. Supp. 2d 133 (D.D.C. 2012), *notice of appeal filed Mingo Logan Coal Co. v. EPA*, (D.D.C., No. 1:10-cv-00541, May 11, 2012).

<sup>95</sup> U.S. SEN. COMM. ENVIRON. & PUB. WORKS, *supra* note 92, at 2.

<sup>96</sup> *Id.* at 3.

<sup>97</sup> *Id.* at 5.

<sup>98</sup> *Id.* at 6.



also asserted “by preventing the production and use of a 2-year supply of America’s coal needs, EPA is putting electricity reliability for consumers at risk” and “directly imping[ing] on our national security.”<sup>99</sup> Moreover, the report stated “the Obama Administration’s permit obstruction could cause drastic increases in American energy prices due to decreases in supply.”<sup>100</sup>

The senate minority report concluded with the assertion that the minority staff’s investigation had identified the “Obama Administration’s broader agenda to drastically curtail coal mining in Appalachia.”<sup>101</sup> “For decades,” the minority report claimed, “the environmental community has politicized mountaintop mining by exaggerating its environmental impacts and stoking unfounded fear in mining communities” and “[o]ur investigation shows that the Administration is exploiting this fear as a means to block all coal mining operations in the Appalachian region.”<sup>102</sup>

In contrast, EPA’s Administrator explained that the Obama “administration pledged . . . to improve review of mining projects that risked harming water quality.” The identification of seventy-nine pending strip mining permit applications was “the first step in a process to assure that the environmental concerns raised by the . . . applications are addressed and that permits issued are protective of water quality and affected ecosystems.”<sup>103</sup> EPA promised to work with the Corps of Engineers and mining companies to “achieve a resolution of EPA’s concerns that avoids harmful environmental impacts and meets our energy and economic needs.”<sup>104</sup> A report of the EPA Inspector General indicated part of the delay in issuing permits was caused by coal company permit

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<sup>99</sup> *Id* at 9.

<sup>100</sup> *Id* at 10.

<sup>101</sup> U.S. SEN. COMM. ENVIRON. & PUB. WORKS, *supra* note 92, at 13.

<sup>102</sup> *Id*.

<sup>103</sup> Press Release, U.S. EPA, EPA Releases Preliminary Results for Surface Coal Mining Permit Reviews, (Sept. 11, 2009); *available at* <http://yosemite.epa.gov/opa/admpress.nsf/d0cf6618525a9efb85257359003fb69d/b746876025d4d9a38525762e0056be1b!OpenDocument&Highlight=2,mining> (statement of EPA Administrator Lisa Jackson)

<sup>104</sup> *Id*.

applicants' delay in providing necessary information to EPA and Corps permit reviewers.<sup>105</sup>

In any event, the prediction of EPA critics that very serious long-term adverse impacts would result from the "holds" placed by EPA on CWA §404 permit applications could not be documented at the time of preparation of this essay. While coal has lost part of its electric generation market share, coal mine employment has dipped only slightly.<sup>106</sup> Most economic experts attribute this declining share to the rise of unconventional gas as competition with coal for the electric power market and on the inefficiencies of very old coal-fired power plants.<sup>107</sup>

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<sup>105</sup> EPA INSPECTOR GEN. REPT., *supra* note 83, at 16. At times, an applicant does not provide all material necessary for the Corps to complete the process or for EPA to conduct its review. *Id.* The inspector General's report explained that the "regional staff said the Corps requests additional information from the applicant and waits for a response." *Id.* "Absent a timely response from the applicant, the Corps will administratively withdraw an application." *Id.* "Some mining companies submit permit applications for multiple projects." *Id.* "When the Corps requests additional information, the applicant may prioritize its pending applications and place some on hold." *Id.* "Regional staff also stated that delays may occur when one mining company purchases another company." *Id.* "Ownership changes result in changes to mine plans, which often delay processing." *Id.*

<sup>106</sup> Coal mining employment rose in Central Appalachia during the first three years of the Obama Administration. In the period 2010 through 2011 coal jobs increased by 3.7% in Kentucky, 6.4% in Ohio, 6.1% in Virginia and 10.5% in West Virginia. See, U.S.E.I.A., *Annual Coal Report 2011(2012)* at 26; available at: <http://www.eia.gov/coal/annual/pdf/acr.pdf> However, in the first two quarters of 2012 coal mining jobs declined slightly. See, Ken Ward Jr., *New data reflects coal layoffs, but no job collapse*, THE CHARLESTON GAZETTE (August 8, 2012) ("New data from the U.S. Mine Safety and Health Administration put coal employment at about 23,300 during the period from April to June, a decline of about 5 percent over the previous three months.").

<sup>107</sup> See, e.g., J.E. McCarthy, et al., *EPA's Regulation of Coal-Fired Power: Is a "Train Wreck" Coming?* 37 (Aug. 8, 2011) available at <http://www.lawandenvironment.com/uploads/file/CRS-EPA.pdf> [hereinafter *Train Wreck Coming?*] ("In short, the 'train wreck' facing the coal-fired electric generating industry, to the extent that it exists, is being caused by cheap, abundant natural gas as much as by EPA regulations."). See also John W. Rowe, *Energy Policy: Above All, Do*

### 3. Buffer Zone --- Stream Protection Rule

Coal lobbyists have also excoriated the Obama Administration's effort to resolve confusing and contradictory EPA, DOI and Army Corps of Engineers regulations and memoranda of understanding regarding disposal of coal mining wastes in Appalachian headwater streams.<sup>108</sup> Beginning in the early 1980s, a succession of regulations and memoranda of understanding of and between the EPA, Department of the Interior and Army Corps of Engineers sought to identify the extent to which the

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*No Harm*, EXELON CORPORATION 7 (Mar. 8, 2011), available at [http://www.exeloncorp.com/assets/newsroom/speeches/docs/spch\\_Rowe\\_AEI2011.pdf](http://www.exeloncorp.com/assets/newsroom/speeches/docs/spch_Rowe_AEI2011.pdf). [Hereinafter *Do No Harm*] (“Most plants that [will be retired] are over 50 years old [and] have not put on any pollution controls . . . They are typically very small – under 300 MWs – and extremely inefficient, have weak profit margins and low capacity factors. They are the equivalent of sending a 1959 Cadillac out to compete with a Chevy Volt.”).

<sup>108</sup> See, e.g., Manuel Quinones, *Industry, States Blast Obama Admin Stream Proposal*, N.Y. Times (Sept. 27, 2011) (“Critics spoke in near-apocalyptic terms about the Office of Surface Mining's effort to develop a new stream protection rule to replace George W. Bush-era regulations, saying it would kill thousands of jobs and jeopardize communities that depend on coal mining”). Courtney R., et al., *EPA's Regulatory Initiatives Impacting the Coal Industry*, Kentucky Coal Assn. (2012); available at: <http://www.kentuckycoal.org/documents/Stop%20the%20War%20on%20Coal.pdf> (“The expected rule could result in the loss of thousands of Appalachian coal industry jobs, with massive spillover economic losses. Moreover, permitting will be much more complex, time consuming, and more expensive.”). For Memoranda of Understanding (“MOU”) relating to stream protection and mountaintop removal mining, see, *Memorandum of Understanding Among the Dep't of the Army, Dep't of the Interior, and Env't. Prot. Agency 3* (June 11, 2009), available at [http://www.epa.gov/owow/wetlands/pdf/Final\\_MTM\\_MOU\\_6-11-09.pdf](http://www.epa.gov/owow/wetlands/pdf/Final_MTM_MOU_6-11-09.pdf); *Suspension of Nationwide Permit 21*, 75 Fed. Reg. 34,711, 34,712 (June 18, 2010); [MOU] Among The U.S. Office Of Surface Mining, U.S. Environmental Protection Agency, U.S. Army Corps Of Engineers, U.S. Fish And Wildlife Service, And West Virginia Division Of Environmental Protection For The Purpose Of Providing Effective Coordination In The Evaluation Of Surface Coal Mining Operations Resulting In Placement Of Excess Spoil Fills In The Waters Of The United States (August 1, 1999); available at: [http://water.epa.gov/lawsregs/guidance/wetlands/wv\\_mou.cfm](http://water.epa.gov/lawsregs/guidance/wetlands/wv_mou.cfm)

SMCRA and the CWA should be administered to ensure protection of surface waters running through or adjacent to surface and underground coal mines.<sup>109</sup>

In 1983, the Reagan Administration DOI promulgated what is commonly known as the “buffer zone” or “SBZ” rule, which prohibits coal mining operations within 100 feet of an intermittent or perennial stream.<sup>110</sup> The Reagan Administration’s buffer zone rule remained in effect for two and a half decades, until the last week of the George W. Bush Administration, when a new significantly weakened buffer zone rule went into effect.<sup>111</sup>

Upon assuming office, the Obama Administration was faced with lawsuits by conservation and environmental groups seeking to block implementation of the new Bush buffer zone rule.<sup>112</sup> This litigation was

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<sup>109</sup> For a detailed history of the buffer zone rule, *see* Excess Spoil, Coal Mine Waste, and Buffers for Perennial and Intermittent Streams 73 Fed. Reg. 75,814-85 (Dec. 12, 2008).  
<sup>110</sup> 30 C.F.R. § 816.57 (2009). The buffer zone rule was codified at 30 C.F.R. § 816.57. *See* Bragg v. Robertson, 72 F.Supp.2d 642 (S.D.W.Va. 1999), *vacated*, 248 F.3d 275 (2001). At issue in *Bragg* was the application of the equivalent West Virginia buffer zone rule that stated:

No land within one hundred feet (100') of an intermittent or perennial stream shall be disturbed by surface mining operations including roads unless specifically authorized by the Director. The Director will authorize such operations only upon finding that surface mining activities will 1) not adversely affect the normal flow or 2) gradient of the stream, 3) adversely affect fish migration or 4) related environmental values, 5) materially damage the water quantity or 6) quality of the stream and 7) will not cause or contribute to violations of applicable State or Federal water quality standards.

*Bragg*, 72 F.Supp.2d. at 646 (citing W.Va. Code St. R. (“C.S.R.”) title 38 § 2–5.2 (1999)).

<sup>111</sup> Excess Spoil, Coal Mine Waster, and Buffers for Perennial and Intermittent Streams 73 Fed. Reg. 75,814-85 (Dec. 12, 2008).

<sup>112</sup> Nine organizations challenged the validity of the rule in two complaints filed December 22, 2008, and January 16, 2009. *Coal River Mountain Watch, et al. v. Salazar*, No. 08-2212 (D.D.C.) and *National Parks Conservation Ass'n v. Salazar*, No. 09-115

settled based in part on the Obama Administration's agreement to consider revision of the 2008 rule, including its promise to determine whether that rule would adequately protect streams, aquatic ecology and downstream water quality.<sup>113</sup> In its Notice of Proposed rulemaking, the Department of Interior's Office of Surface Mining ("OSM") explained "[w]e have determined that revision of the [Bush Administration 2008] stream buffer zone (SBZ) . . . is necessary . . . to significantly reduce the harmful environmental consequences of surface coal mining operations in Appalachia, while ensuring that future mining remains consistent with Federal law."<sup>114</sup>

The Department of Interior's notice of proposed rulemaking sought public comments on ten possible approaches to improving protection of streams from the harmful impacts of filling streams with coal-mining wastes.<sup>115</sup> Those approaches included the alternative of keeping the 2008 Bush buffer zone rule in place.<sup>116</sup> The 2009 rulemaking proposal received more than 32,000 comments.<sup>117</sup> As of April, 2012, the DOI still had not decided upon which, if any, of the ten approaches to stream protection would be adopted in a final rule.

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(D.D.C.). *See*, Nat'l Parks Conservation Assn, v. Salazar, 660 F. Supp. 2d. 3 (2009) (court denied government's motion to remand and vacate newly-promulgated stream buffer zone rule on grounds that allowing Government to repeal a rule without public notice and comment and without judicial consideration of the merits would violate Administrative Procedure Act).

<sup>113</sup> Stream Buffer Zone and Related Rules, 74 Fed. Reg. 62,664 (Nov. 30, 2009).

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *See* OFFICE OF SURFACE MINING, DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES, at 2-10, *available at*

<http://wvgazette.com/static/coal%20tattoo/osmeis3.pdf> ("Alternative #1 represents the current state of the SMCRA regulations pertaining to each of the listed Principal Elements. As such, it is identified as the No Action Alternative, which, if adopted, means no changes in the regulations would be made, and these provisions would continue to apply.").

<sup>117</sup> Stream Protection Rule, Environmental Impact Statement, 75 Fed. Reg. 22,723 (Apr. 30, 2010).

Notwithstanding the fact that the Obama Administration had not made a decision regarding the form of a revised stream protection rule, coal industry critics attacked OSM's rulemaking proposal as if a decision to issue a rule had been made.<sup>118</sup> Coal supporters ignored the fact that more than 2000 miles of headwater streams in central Appalachia have been buried by coal processing wastes and mine spoil.<sup>119</sup> Similarly, industry attacks on stream protection regulatory initiatives failed to acknowledge valley fills and spoil placement in headwater streams

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<sup>118</sup> Based purely upon speculation, coal lobbyists claim that the "proposed federal rules would fundamentally change the federal-state relationship; . . . would impose additional permitting and reporting requirements and restrict various mining activities; removes flexibility in how companies reclaim mine sites." Critics also claimed that "[a]ccording to the OSM's own projections, the proposed rule could eliminate 10,749 jobs in Appalachia." Loris, *Assault on Coal*, *supra* note 18, at 8-9. See also NAT'L MINING ASSOC., STREAM BUFFER ZONE, [http://www.nma.org/pdf/tmp/011712\\_sbz.pdf](http://www.nma.org/pdf/tmp/011712_sbz.pdf); *Written Testimony of Bradley C. (Butch) Lambert Deputy Director Virginia Department of Mines, Minerals and Energy Before the House Energy and Mineral Resources Subcommittee re Oversight Hearing on "Jobs at Risk: Community Impacts of the Obama Administration's Effort to Rewrite the Stream Buffer Zone Rule"*, H. Comm. on Nat. Resources, 112TH CONG. (Sept. 26, 2011). *But see* Minority Staff Report, H. Comm. on Nat. Resources, *Molehills Out of Mountains, Minority Staff Rept.*, (2012) available at: <http://democrats.naturalresources.house.gov/sites/democrats.naturalresources.house.gov/files/StreamProtectionReport.pdf> (refuting coal industry criticisms of rule revisions); Ken Ward, Jr., *Coal Tattoo exclusive: About that OSMRE study*, THE CHARLESTON GAZETTE (Coal Tattoo Blog, Feb. 2, 2011) available at <http://blogs.wvgazette.com/coal-tattoo/2011/02/02/coal-tattoo-exclusive-about-that-osmre-study/> (refuting job loss statistics, and reporting the Interior agency's statement that "The current draft of the EIS isn't OSM's, and doesn't reflect our input or reviews. The document is a very early working draft. We have not adopted the numbers that are in the draft or any other aspects of the draft").

<sup>119</sup> U.S. EPA, *2010 News Releases: EPA Issues Comprehensive Guidance to Protect Appalachian Communities From Harmful Environmental Impacts of Mountaintop Mining*, (Apr. 1, 2010), <http://yosemite.epa.gov/opa/admpress.nsf/e77fdd4f5afd88a3852576b3005a604f/4145c96189a17239852576f8005867bd!OpenDocument>.

degrade downstream water quality and stream ecology.<sup>120</sup> Indeed some in the industry cavalierly dismiss the studies identifying these externalities:

... the eco-zealots at the EPA are determined to protect the valuable lives of those hardworking Mayflies and ensure that future Americans will eventually be able to visit the emptied hollers, overgrown mountains and boarded up storefronts of a new tourism-based Appalachian economy that will eventually, no doubt, romanticize their former, once vibrant, regional mining culture.<sup>121</sup>

At bottom, the industry's argument against EPA's examination of the externalized impacts of disposing of coal mining wastes in Appalachian headwater streams and the agency's efforts to internalize the costs is that it is too expensive to dispose of these wastes other than in headwater streams, and that the wastes have had no cognizable adverse impact that would justify EPA's regulatory efforts.

### *C. Clean Air Act Regulation*

#### 1. Cross-State Air Pollution Rule and Mercury Air Toxics Standards

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<sup>120</sup> See generally U.S. EPA, *A Field-Based Aquatic Life Benchmark for Conductivity in Central Appalachian Streams* (2011), available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=233809#Download>; Emily Bernhardt, et al., *How many mountains can we mine? Assessing the regional degradation of Central Appalachian rivers by surface coal mining*, 46 ENV. SCI. & TECH. 8115-22 (2012).

<sup>121</sup> Lee Buchsbaum, *Fight to the Finish: The EPA's not so funny April Fools' Day present to Appalachian coal producers*, COAL AGE (June 13, 2010) available at <http://coalage.com/index.php/features/496-fight-to-the-finish.pdf>. Others in the industry present civil arguments in opposition to EPA's effort to deal with the issue of conductivity damaging discharges to Appalachian streams. See, e.g., Letter from Karen Bennett, Vice President, Environmental Affairs, National Mining Association, to Paul Anastas, Assistant Administrator, Office of Research and Development, U.S. EPA, et al., at 6 (Sept. 3, 2010) ("... EPA's study is not consistent with EPA's standard methodology and, as a result, is not scientifically sound or defensible.") available at [http://www.nma.org/pdf/legal/092010\\_ex21.pdf](http://www.nma.org/pdf/legal/092010_ex21.pdf).

Two recent EPA rulemaking initiatives seek to substantially reduce the adverse health impacts of air pollution emitted from coal-fired power plants. In mid-July 2011, EPA finalized a rule known as the “Cross-State Air Pollution Rule” or “CSAPR.”<sup>122</sup> In February 2012, EPA issued a final Mercury Air Toxics Standards Rule (“MATS”) applicable to emissions of hazardous air pollutants from electricity generating plants including those fired by coal; the rule requires such facilities utilize Maximum Available Control Technology (“MACT”) to limit toxics emissions.<sup>123</sup>

The CSAPR rule required states to improve air quality by reducing emissions from those power plants that contribute to ozone or fine particle air pollution in other states.<sup>124</sup> It also required twenty-eight states to reduce annual sulfur dioxide (“SO<sub>2</sub>”) emissions, annual nitrogen oxide (“NO<sub>x</sub>”) emissions and ozone season NO<sub>x</sub> emissions with a goal of

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<sup>122</sup> Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208 (Aug. 8, 2011) (for general background see Cross State Air Pollution Rule (CSAPR), <http://www.epa.gov/airtransport/>). The CSAPR rule was intended to replace the Bush Administration EPA’s 2005 Clean Air Interstate Rule (“CAIR”). CAIR, 70 Fed. Reg. 25,162 (May 12, 2005). A December 2008 court decision maintained the requirements of CAIR in place while directing EPA to issue a new rule to implement Clean Air Act requirements concerning the transport of air pollution across state boundaries. *North Carolina v. Env’tl. Prot. Agency*, 531 F.3d 896, 929 (D.C. Cir. 2008); *North Carolina v. Env’tl. Prot. Agency*, 550 F.3d 1176, 1178 (D.C.Cir.2008) (on rehearing).

<sup>123</sup> National Emission Standards for Hazardous Air Pollutants from Coal and Oil-Fired Electric Utility Steam Generating Units, 77 Fed. Reg. 9,304 (Feb. 16, 2012) (codified at 40 C.F.R. pts. 60, 63). The MAT rule implements CAA § 112, 42 U.S.C. § 7412. Section 112 established a strict, detailed system intended to regulate stationary source emissions of hazardous air pollutants (“HAPs”). The provision includes provisions for National Emission Standards for Hazardous Air Pollutants (“NESHAPs”) to implement Maximum Available Control Technology (“MACT”) requirements. Some facets of the final rule are being reconsidered by EPA. *See Reconsideration of Certain New Source and Startup/Shutdown Issues: National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units*, 77 Fed. Reg. 71,323 (Nov. 30, 2012).

<sup>124</sup> *See* 76 Fed. Reg. 48,208, *supra* note 121.



attaining ozone and fine particle National Ambient Air Quality Standards (“NAAQS”).<sup>125</sup>

Based upon EPA scientific studies, a Government Accountability Office (“GAO”) Report summarized projected benefits of CSAPR including reduction of sulfur dioxide emissions by seventy-three percent and NO<sub>x</sub> emissions by more than fifty percent in covered states. The GAO reported these pollutant restrictions would, in turn, reduce asthma and related human health impacts.<sup>126</sup> By 2016, EPA estimated the final versions of CSAPR and MATS “could generate \$160 billion to \$405 billion in monetized annual benefits (in 2011 year dollars), preventing tens of thousands of premature deaths and reducing pollution-related illnesses.”<sup>127</sup>

Coal and power industry critics dispute EPA’s quantification of the costs and benefits of the CSAPR and MATS rules<sup>128</sup> claiming that, combined, the two rules would “remove [from service] more than [thirty-three] gigawatts (GW) of electricity generation-almost [ten] percent of the electricity generated by coal plants.”<sup>129</sup> The American Legislative

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<sup>125</sup> *Id.*

<sup>126</sup> EPA REGULATIONS AND ELECTRICITY, *supra* note 72, at 2.

<sup>127</sup> *Id.*

<sup>128</sup> See, e.g., Scott H. Segal, *ERCC Comments on Utility MACT*, ELECTRIC RELIABILITY COORDINATING COUNCIL, (Aug. 4, 2011) <http://www.electricreliability.org/news/ercc-comments-utility-mact> (“Put simply, EPA’s Utility MACT, when combined with the myriad other regulations proposed, enacted, or currently planned by the Agency, presents a near and present danger to the Nation’s economy and the reliability of the electric grid.”); Hal Quinn, National Mining Association President and CEO also reacted negatively to the proposed rule (“At every opportunity, EPA has chosen the most costly and economically damaging options over a more prudent and balanced approach for achieving continued emission reductions at our nation’s power plants.”) Press Release, National Mining Association, *EPA’s Utility MACT Is Bad for American Workers and the Economy*, (Dec. 21, 2011) available at <http://www.nma.org/index.php/press-releases/press-releases-2011/14-epa-s-utility-mact-is-bad-for-american-workers-and-the-economy>.

<sup>129</sup> Loris, *Assault on Coal*, *supra* note 25 at 2 (“EPA regulations could take an additional 75 GWs of coal generation offline, which would significantly raise electricity bills for

Exchange Council (“ALEC”) alleged EPA’s CAA rulemaking constituted a “regulatory train wreck.”<sup>130</sup> ALEC’s broad critique asserted:

EPA’s tsunami of redundant regulations with unattainable compliance deadlines seems more in keeping with an agenda of just eliminating the use of coal—the nation’s most abundant source of domestic energy—no matter the cost rather than maintaining steady progress in reducing emissions over time without damaging the economy.<sup>131</sup>

A Heritage Foundation analysis predicted catastrophic consequences if EPA’s regulatory initiatives were to be implemented:

These higher energy prices will also have rippling effects throughout the economy. As energy prices increase, the cost of making products rises. Higher operating costs for

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American consumers and threaten reliability of the electricity grid.” (citing, Institute for Energy Research, *EPA’s Latest Assault on Coal: New Regulations to Take Over 28 GW of Electricity Generating Capacity Offline*, (Oct. 4, 2011) available at <http://www.instituteforenergyresearch.org/wp-content/uploads/2011/10/EPAs-28-GW-Assault-on-Coal.pdf>). See also Benjamin Salisbury, et al., *Coal Retirements in Perspective-Quantifying the Upcoming EPA Rules*, FBR CAPITAL MARKETS (Dec. 13, 2010), <http://jlcny.org/site/attachments/article/388/coall.pdf>, and Metin Celebi, et al., *Potential Coal Plant Retirements Under Emerging Environmental Regulations*, THE BRATTLE GROUP (Dec. 8, 2010) [http://www.brattle.com/\\_documents/uploadlibrary/upload898.pdf](http://www.brattle.com/_documents/uploadlibrary/upload898.pdf).

<sup>130</sup> ALEC, *supra* note 17, at 12. See generally Steve Fine et al., *Potential Impacts of Environmental Regulation on the U.S. Generation Fleet*, Final Report, EDISON ELECTRIC INSTITUTE (Jan 2011), available at [http://www.pacificorp.com/content/dam/pacificorp/doc/Energy\\_Sources/Integrated\\_Resource\\_Plan/2011IRP/EEIModelingReportFinal-28January2011.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Integrated_Resource_Plan/2011IRP/EEIModelingReportFinal-28January2011.pdf) (analyzing the interactions among rules governing air quality, cooling water intakes, coal ash handling, and greenhouse gases); See also *Train Wreck Coming?*, *supra* note 106, at 3. (“[t]rain wreck” charts and related studies have been widely circulated on Capitol Hill, where they have stimulated concern . . . Several bills aimed at reducing the regulatory burden or requiring additional analyses of the combined rules’ impacts have been introduced, as have proposals to modify or delay implementation of specific EPA rules.”).

<sup>131</sup> ALEC, *supra* note 17, at 12.

businesses will be reflected in higher prices for consumers. Because everything Americans use and produce requires energy, consumers will take hit after hit. As prices rise, consumer demand falls, and companies will shed employees, close entirely, or move to other countries where the cost of doing business is lower. This results in fewer opportunities for American workers, lower incomes, less economic growth, and higher unemployment.<sup>132</sup>

The Congressional Research Service (“Service”) critically examined such allegations supporting the industry “EPA regulatory train wreck” theory. The Service found:

The primary impacts of many of the rules will largely be on coal-fired plants more than 40 years old that have not, until now, installed state-of-the-art pollution controls. Many of these plants are inefficient and are being replaced by more efficient combined cycle natural gas plants, a development likely to be encouraged if the price of competing fuel—natural gas—continues to be low, almost regardless of EPA rules.<sup>133</sup>

The Service reported that “while the requirements are stringent for those facilities lacking controls, fifty-six percent of existing coal-fired power plants already are in compliance” and that the new standards “are expected to level the playing field, bringing older, poorly controlled plants up to the standards being achieved by a majority of the existing units.”<sup>134</sup> Contrary to coal and power industry critics claims, EPA’s analysis concluded coal-fired generation in the near future “will decline about 2% compared to estimated generation in the absence of the rule.”<sup>135</sup>

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<sup>132</sup> Loris, *Assault on Coal*, supra note 18 at 2.

<sup>133</sup> *Train Wreck Coming?*, supra note 106, at Summary.

<sup>134</sup> *Id.* at 13.

<sup>135</sup> *Id.* (citing U.S. EPA, REGULATORY IMPACT ANALYSIS OF THE PROPOSED TOXICS RULE: FINAL REPORT, (Mar. 2011), at 8-17, available at <http://www.epa.gov/ttn/ecas/regdata/RIAs/ToxicsRuleRIA.pdf>. (Hereafter “Utility MACT RIA.”))

The Service report also questioned the methodology utilized by “EPA regulatory train wreck” theory proponents. Analyses by two industry-minded reports “assumed requirements that appear to be substantially more stringent than what EPA proposed.”<sup>136</sup> The Service opined that “the number of retrofits appears to be within the range of what the industry has accomplished in the past as a result of earlier regulations” if EPA’s analysis were accurate.<sup>137</sup>

The Clean Energy Group,<sup>138</sup> a coalition of power companies with 105 gigawatt of fossil fuel-powered electric generation capacity, commented that the MACT Rule provides the necessary certainty needed by the electric generation industry to proceed with major capital investments.<sup>139</sup> A representative of that industry group testified before a congressional committee conceding “[w]hile not perfect, the proposal is reasonable and consistent with the requirements of the Clean Air Act, that “the electric sector is well positioned to comply,” and that it “provides sufficient time to comply as well as the authority to accommodate special circumstances where additional time is necessary.”<sup>140</sup> The Institute of Clean Air Companies, representing the pollution control industry,

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<sup>136</sup> *Id.* at 15.

<sup>137</sup> *Id.*

<sup>138</sup> The Group is comprised of a coalition of electric power companies possessing more than 200 gigawatts of electric generating capacity including 105 GW of fossil-fuel fired capacity.

<sup>139</sup> *Train Wreck Coming?*, *supra* note 106 at 33 (citing *EPA Rulemakings Relating to Boilers, Cement Manufacturing Plants, and Utilities: Hearing Before the H. Comm. on Energy and Comm., Subcomm. on Energy and Power*, 112th Cong. 1 (Apr. 15, 2011) (statement of Michael J. Bradley, member of the Clean Energy Group); *available at* [http://assets.opencrs.com/rpts/R41914\\_20110808.pdf](http://assets.opencrs.com/rpts/R41914_20110808.pdf)).

<sup>140</sup> *Train Wreck Coming?*, *supra* note 106 at 33 (citing *EPA Rulemakings Relating to Boilers, Cement Manufacturing Plants, and Utilities: Hearing Before the H. Comm. on Energy and Comm., Subcomm. on Energy and Power*, 112th Cong. 1 (Apr. 15, 2011) (statement of Michael J. Bradley, member of the Clean Energy Group); *available at* [http://assets.opencrs.com/rpts/R41914\\_20110808.pdf](http://assets.opencrs.com/rpts/R41914_20110808.pdf)).

observed that the amount of generating capacity lost by old power plants going off-line could easily be replaced in the time allowed by the rule.<sup>141</sup>

## 2. National Ambient Air Quality Standards – Ozone

Section 109(b)(1) of the Clean Air Act mandates that EPA set primary national ambient air quality standards (“NAAQS”) for ozone as well as five other air pollutants considered harmful to public health and the environment.<sup>142</sup> EPA is also required by that provision to periodically review and update NAAQS to ensure they provide adequate health and environmental protection.<sup>143</sup> The G.W. Bush EPA promulgated a 75 ppb

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<sup>141</sup> See *Train Wreck Coming?*, *supra* note 106, at 33 (citing David C. Foerter, *EPA’s Proposed Utility Air Toxics Rule*, Presentation to Congressional Staff (May 9, 2011), at 6).

<sup>142</sup> Section 109(b)(1) of the CAA requires:

National primary ambient air quality standards, prescribed under subsection (a) of this section shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health. Such primary standards may be revised in the same manner as promulgated.

42 U.S.C. § 7409(b)(1) (2012). The “criteria” referred to are “air quality criteria” for pollutants established by EPA pursuant to section 108 of the CAA. 42 U.S.C. §7408 (2012). For background information regarding EPA activities relating to Ozone NAAQS see U.S. EPA Technology Transfer Network: *Ambient Air Quality Standards (NAAQS), Ozone (O<sub>3</sub>) Standards available at* [http://www.epa.gov/ttnnaqs/standards/o3/s\\_o3\\_index.html](http://www.epa.gov/ttnnaqs/standards/o3/s_o3_index.html). The other air contaminants for which EPA is required to establish primary NAAQS are particulate matter, nitrogen oxides, carbon monoxide, sulfur dioxide and lead. See 40 C.F.R. Part 50 (listing primary NAAQS).

<sup>143</sup> U.S. EPA Technology Transfer Network: *Ambient Air Quality Standards (NAAQS), Ozone (O<sub>3</sub>) Standards available at* [http://www.epa.gov/ttnnaqs/standards/o3/s\\_o3\\_index.html](http://www.epa.gov/ttnnaqs/standards/o3/s_o3_index.html).

NAAQS for ozone in 2008 after an extended rulemaking proceeding that included a court rejection of an earlier NAAQS rule and a remand.<sup>144</sup>

In January 2010, EPA announced that it would revisit the 2008 standard. It asked for public comment on a proposed new ozone standard of between 60 and 70 ppb.<sup>145</sup> Although EPA developed a final ozone standard of 65 ppb, in September 2011, President Obama asked the Administrator to withdraw the ozone proposal before the review process was completed, ordering the standard be reviewed in 2013 as part of the regular five-year review required by the Clean Air Act.<sup>146</sup>

Notwithstanding the fact that the proposed rule was withdrawn, critics of EPA continued to attack the agency for seeking to enforce the Bush 75 ppb ozone standard:

The massive costs of tightening the standard have outweighed the negligible environmental benefits in the past, and enforcing the 75 ppb standard will yield diminishing marginal returns—possibly to the vanishing point . . . it is clear and well established that improved

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<sup>144</sup> National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436 (Mar. 27, 2008) (Final Rule).

<sup>145</sup> See Federal Implementation Plans To Reduce Interstate Transport of Fine Particulate Matter and Ozone; Proposed Rule, 75 Fed. Reg. 45,210 (proposed Aug. 2, 2010). In support of its' action, EPA calculated the annual benefits of making ozone NAAQS more stringent "to include between 50 and 230 fewer premature mortalities, 690 fewer hospital admissions for respiratory illnesses, 230 fewer emergency room admissions for asthma, 300,000 fewer days with restricted activity levels, and 110,000 fewer days where children are absent from school due to illnesses." *Id.* at 45,346. See M.L. Bell, et al., *Ozone and short-term mortality in 95 U.S. urban communities, 1987-2000*, 292 J. AM. MED. ASS'N. 2372, 2372-2378 (2004). ("[R]esults indicate a statistically significant association between short term changes in ozone and mortality on average for 95 large US urban communities, which include about 40% of the total US population . . . The findings indicate that this widespread pollutant adversely affects public health.").

<sup>146</sup> See, e.g., Deborah Solomon & Tennille Tracy, *Obama Asks EPA to Pull Ozone Rule*, THE WALL ST. J. (Sept. 3, 2011); available at: <http://online.wsj.com/article/SB10001424053111904716604576546422160891728.html>.

economic well-being means that people are healthier and live longer. A tighter ozone rule will slow economic growth and reduce economic well-being.<sup>147</sup>

They argued the Bush-era ozone 75 ppb standard was “misguided” and that the 84 ppb ozone standard was “already more stringent than it needs to be and provides more than enough protection for citizens’ health.”<sup>148</sup> The criticism of the Obama EPA’s enforcement of the 75 ppb standard echoed those directed at the Bush EPA ozone rulemaking.<sup>149</sup>

Moreover, while vociferous power and coal industry critics attacked the Bush 77 ppb ozone NAAQS rulemaking and EPA enforcement of it on grounds the agency erroneously minimized the costs of lowering the standard, agency consideration of costs are clearly not what the CAA requires EPA to consider as determinative in setting ozone NAAQS.<sup>150</sup> As the Supreme Court has stated emphatically:

The EPA, “based on” the information about health effects contained in the technical “criteria” documents compiled under § 108(a)(2) [of the CAA] is to identify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an “adequate” margin of safety, and set the standard at that level. Nowhere are the costs of achieving such a standard

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<sup>147</sup> Loris, *Assault on Coal*, *supra* note 18 at 5-6.

<sup>148</sup> *Id.* at 5-6, 11.

<sup>149</sup> See H. Sterling Burnett & Joel Schwartz, *A Clean Air Regulation Hazardous to Health*, AMERICAN ENTERPRISE INST. (Oct. 22, 2007), available at <http://www.aei.org/article/energy-and-the-environment/a-clean-air-regulation-hazardous-to-health/>. (“EPA Administrator Stephen Johnson claims that a tougher ozone standard is needed to protect public health. Contrary to Johnson’s claim, current ozone levels are already so low as to have (at most) a tiny effect on Americans’ health. Indeed, the current standard provides safe air with plenty of room to spare.”).

<sup>150</sup> See, e.g., Loris, *Assault on Coal*, *supra* note 18, at 5-6. (“The massive costs of tightening the standard have outweighed the negligible environmental benefits in the past, and enforcing the 75 ppb standard will yield diminishing marginal returns—possibly to the vanishing point.”).

made part of that initial calculation . . . The text of § 109(b), interpreted in its statutory and historical context and with appreciation for its importance to *the CAA as a whole, unambiguously bars cost considerations from the NAAQS-setting process, and thus ends the matter for us as well as the EPA.*<sup>151</sup>

### 3. New Source Review – Coal-Fired Power Plants

The alleged Obama Administration’s war on coal is asserted to also include EPA New Source Review (“NSR”) of new coal-fired power plants and modification of existing plants. As one EPA critic explained:

What constitutes a significant modification is subjective under the rules. The amendment excludes routine maintenance, repair, and replacement, but what falls under the definition of significant modification remains murky, despite multiple administrative attempts to clarify the meaning. Plant upgrades can improve efficiency and reduce operational costs, thereby lowering electricity costs, increasing reliability, and providing environmental benefits. Nevertheless, NSR requirements for upgrades discourage these activities. Increasing the efficiency of a plant will cause it to run longer and consequently cause the plant's emissions to rise. NSR does not account for the emission reduction that would occur if a less efficient plant reduced its hours of operation to compensate for increases in operation of a more efficient plant.<sup>152</sup>

NSR was intended by Congress to prevent the states from permitting new facilities whose emissions would cause significant deterioration of air quality in areas of a state where ambient air quality complies with NAAQS (“attainment areas”). In areas where NAAQS are being violated,

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<sup>151</sup> Whitman v. American Trucking Ass’ns, 531 U.S. 457, 465, 471 (2001) (emphasis added).

<sup>152</sup> Loris, *Assault on Coal*, *supra* note 18.



NSR is mandated to insure air pollutant levels will be reduced so that NAAQS can be achieved.<sup>153</sup>

In attainment areas, the CAA prohibits construction and operation of new facilities and major modifications of existing facilities that would increase emissions above a specified threshold.<sup>154</sup> New plants and modifications of older ones must comply with CAA Prevention of Significant Deterioration (“PSD”) rules.<sup>155</sup> NSR mandates new plants must install equipment to achieve the lowest achievable emission rate (“LAER”), buy emission offsets, and/or provide opportunity for public involvement in non-attainment areas where NAAQS are not being met.<sup>156</sup>

While the Obama EPA’s implementation of NSR is attacked by industry commentators, and subsumed in their “War on Coal” and “Regulatory Train Wreck” theme, the complaint is more properly lodged against the Clean Air Act itself. The ambiguity of the term “modification” as used with regard to CAA New Source Review was recognized as problematic “early in the implementation of the Act” when “it became clear that the original definition of ‘modification’ - which remains unchanged to this day - raised numerous practical problems in its application.”<sup>157</sup> As one commentator has explained:

As a result of the fundamental conceptual difficulties with the definition of modification, decades of litigation ensued over what constituted “routine” maintenance, repair, and replacement, beginning . . . in 1991. In 1998, the EPA

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<sup>153</sup> Robert R. Nordhaus, *Modernizing The Clean Air Act: Is There Life After 40?*, 33 ENERGY L.J. 365, 370, 373-74 (2012) [Hereinafter *Modernizing*].

<sup>154</sup> CAA § 165, 42 U.S.C. § 7475 (1990); *Modernizing*, *supra* note 152, at 373-74.

<sup>155</sup> CAA § 173(a)(2), 42 U.S.C. § 7503(a)(2) (1990); *Modernizing*, *supra* note 152, at 373-74.

<sup>156</sup> CAA § 173(a), 42 U.S.C. § 7503(a) (1990).

<sup>157</sup> *Modernizing*, *supra* note 152, at 374-75; *see*, CAA §111(a)(4), 42 U.S.C. § 7411(a)(4) (1990) (defining “modification” as “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.”).

commenced its NSR “Enforcement Initiative” which is still ongoing. After twenty years of NSR litigation, resulting in a mix of EPA wins and losses and a number of company-specific settlements, there appears to be no clear, generally-applicable standard for what constitutes “routine maintenance, repair, and replacement.” What has become clear is that the CAA’s regulatory construct of “modification” is essentially unadministrable because of the difficulties in applying the routine maintenance and other exclusions, and the problems with defining what constitutes an emission increase. And, more importantly, the practical result of this aspect of the Act has been to provide strong disincentives for technological improvements at existing facilities.<sup>158</sup>

Indeed, Congress’ decided in 1970 to “grandfather” existing stationary sources and exempt them from NSR, resulting in four decades of operation of now old, antiquated and polluting coal-fired electric generation power plants.<sup>159</sup> “For the electric sector, these grandfathering policies have been uniquely dysfunctional: They have failed to effectively control coal-fired power plants (30% of the coal-fleet lacks modern air pollution control equipment) and they have also locked in thermally-inefficient 1960s coal combustion technology.”<sup>160</sup> As a recent report of the Congressional Research Service emphasized:

Besides the age of the plants and the cost of the fuel, a third factor that has resulted in lower cost is that many of the coal-fired plants, particularly the older ones, have been allowed to operate with little in the way of pollution control equipment. Coal is an inherently “dirty” fuel. Burning it produces sulfur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulates, mercury, acid gases, and other pollutants, in greater abundance than other fossil fuels. [C]oal-fired

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<sup>158</sup> *Modernizing*, *supra* note 152, at 374-75.

<sup>159</sup> *Id.* at 376. (“the 1970 grandfathering policies that exempted existing unmodified sources from NSPS and NSR remain largely unchanged to this day.”).

<sup>160</sup> *Id.* at 376.

power is a major or the major source of the air emissions of many of these pollutants.<sup>161</sup>

#### D. *Coal Combustion Waste Regulation*

As described above, coal combustion waste (“CCW”) also referred to as “coal ash” and “coal combustion residuals,” has long been exempted from regulation under the Resource Conservation and Recovery Act (“RCRA.”)<sup>162</sup> This waste is generated by the combustion of coal in power plants and captured by pollution control devices, like “scrubbers.”<sup>163</sup>

Potential environmental concerns about CCW pertain to structural failures of impoundments and their potential to release or leach contaminants into surface and ground water—such as occurred in 2008 at a Tennessee Valley Authority (“TVA”) power plant in Kingston, Tennessee. The TVA’s CCW disposal area released 1.1 billion gallons of coal fly ash slurry damaging or destroying nearby homes while the waste submerged 300 acres of land.<sup>164</sup> The CCW entered tributaries and the main branches of the Emory and Clinch rivers far beyond the TVA impoundment.<sup>165</sup>

Subsequent to the TVA Tennessee impoundment collapse, public clamor for establishment of national management criteria for disposal of CCW emerged for the first time. In 2010, EPA proposed to regulate the

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<sup>161</sup> See *Train Wreck Coming?*, *supra* note 106, at 5.

<sup>162</sup> *Id.* at 25.

<sup>163</sup> See, *North Carolina, ex rel. Cooper v. Tennessee Valley Authority*, 615 F.3d 291 at 296-97 (4th Cir. 2010) (“Scrubbers are large chemical plants—often larger than the power plants themselves—that remove SO<sub>2</sub>—from plant exhaust and cost hundreds of millions of dollars.”).

<sup>164</sup> Anne Paine & Colby Sledge, *Flood of Sludge Breaks TVA Dike: Collapse poses risk of toxic ash*, *THE TENNESSEAN*, (Dec. 24, 2008), at A1, available at <http://www.commondreams.org/headline/2008/12/24-1>.

<sup>165</sup> *Id.*

disposal of CCW.<sup>166</sup> EPA's proposal set forth two options for the management of coal ash. EPA identified the Resource Conservation and Recovery Act ("RCRA") as the statutory authority for each option.<sup>167</sup>

Like many other EPA regulatory initiatives regarding coal externalities, EPA's CCW disposal proposal appears on many power and coal industry lobbyists' lists of EPA war on coal transgressions. Lobbyists and industry think-tank commentators emphasize that, prior to the TVA Tennessee power plant release, EPA had never concluded coal ash exhibits characteristics of hazardous wastes under RCRA.<sup>168</sup> They argue the non-hazardous nature of CCW is buttressed by the fact there is a significant market for the reuse of CCW.<sup>169</sup> That CCW reuse market

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<sup>166</sup> Disposal of Coal Combustion Residuals From Electric Utilities, 75 Fed. Reg. 35,127-264 (proposed June 21, 2010).

<sup>167</sup> *Id.* Under the first proposal, the EPA would list these residuals as special wastes subject to regulation under subtitle C of RCRA, when destined for disposal in landfills or surface impoundments. Under the second proposal, EPA would regulate coal ash under subtitle D of RCRA, the section for non-hazardous wastes. *Id.*

<sup>168</sup> See generally Press Release, National Rural Electric Cooperative Association, Benefits of Coal Combustion Residual Materials (2011) (last visited Feb. 17, 2013), available at <http://www.nreca.coop/press/NewsReleases/Pages/BenefitsofCoalCombustionResidualMaterials.aspx> [hereinafter CCW Benefits]; But see U.S. EPA OFFICE OF THE INSPECTOR GEN., EVALUATION REPORT: EPA PROMOTED THE USE OF COAL ASH PRODUCTS WITH INCOMPLETE RISK INFORMATION REPORT NO. 11-P-0173, (Mar. 23, 2011), available at <http://www.epa.gov/oig/reports/2011/20110323-11-P-0173.pdf>. EPA's Inspector General was requested to evaluate whether the EPA "followed accepted and standard practices in determining that [CCW is] safe for the beneficial uses it had promoted." *Id.* at 1. The Inspector General found the EPA had promoted the reuse of CCW although it "did not follow accepted and standard practices in determining the safety of the 15 categories of [CCW] beneficial uses it promoted . . . EPA's application of risk assessment, risk screening, and leachate testing and modeling" said the report, "was significantly limited in scope and applicability. Without proper protections, [CCW] contaminants can leach into ground water and migrate to drinking water sources, posing significant public health concerns." *Id.* at 3.

<sup>169</sup> CCW Benefits, *supra* note 165. The National Rural Electric Cooperative, a power industry trade association asserts:

When properly managed, CCRs offer environmental and economic benefits without harm to public health and safety. Over the years, CCRs have been

would be destroyed, they assert, if EPA chose to regulate CCW as “hazardous” under RCRA.<sup>170</sup> Consequently, a huge amount of previously reused CCW will be subject to disposal rather than put to constructive use.<sup>171</sup>

Arguing the Tennessee CCW incident did not justify federal regulation of CCW, one commentator noted, “despite the magnitude of the accident, the Tennessee Department of Health found no adverse health effects caused by the spill.”<sup>172</sup> A power industry trade association has asserted that as much as eighteen percent of the nation's coal generation would risk closure if EPA were to classify CCW as “hazardous under” RCRA.<sup>173</sup> That trade association also predicted “regulation of coal ash as hazardous could present insurmountable hurdles to compliance, making it impossible to operate a coal-based power plant and comply with hazardous waste regulations.”<sup>174</sup>

The Congressional Research Service (“Service”) has examined complaints about EPA’s proposal to regulate CCW. The Service reported:

A tremendous amount of the material is generated each year— industry estimates that as much as 135 million tons were generated in 2009, making it one of the largest waste

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incorporated into productive, beneficial applications, such as roof shingles, wallboard, asphalt and bricks. For example, fly ash, a type of CCR, plays a critical role in highway construction because it cost-effectively and safely increases concrete durability. The volume of CCRs being recycled and put to beneficial use has increased steadily through time and now constitutes about 45 percent of all CCRs produced, displacing the use of raw materials.

*Id.*

<sup>170</sup> *Id.*

<sup>171</sup> *See Id.*

<sup>172</sup> Loris, *Assault on Coal*, *supra* note 18, at 5 (citing *Kingston Ash Recovery Project*, TENNESSEE VALLEY AUTHORITY (June 6, 2011), available at <http://www.tva.gov/kingston/pdf/Kingston%20Ash%20Recovery%20Project%20Fact%20Sheet%20Final%2006-06-2011.pdf>).

<sup>173</sup> *Id.* (citing CCW Benefits, *supra* note 165).

<sup>174</sup> CCW Benefits, *supra* note 165.

streams generated in the United States. Disposal of CCW onsite at individual power plants may involve decades-long accumulation of tons of dry ash (in a landfill) or wet ash slurry (in a surface impoundment) deposited at the site.

The Service further observed that, in addition to the threat of a CCW impoundment collapse such as occurred at the Tennessee TVA facility in 2008, a “more common threat associated with CCW management is the leaching of contaminants likely present in the waste, primarily heavy metals, resulting in surface or groundwater contamination.”<sup>175</sup> “This risk,” the researchers reported, “is particularly high at unlined surface impoundments which are likely in common use today.”<sup>176</sup>

The TVA incident also drew into question how CCW is managed and regulated.<sup>177</sup> The Service noted that CCW has long been exempt from federal regulation and “[s]tate management requirements generally apply only to CCW disposal in landfills, surface impoundment, or mines.”<sup>178</sup> The Service reported “[i]nconsistencies and deficiencies in state regulatory programs have been identified by EPA as one reason that national standards to regulate CCW are needed.”<sup>179</sup>

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<sup>175</sup> LINDA LUTHER, CONG. RESEARCH SERV., R41341, REGULATING COAL COMBUSTION WASTE DISPOSAL: ISSUES FOR CONGRESS 1 (2010), *available at*

<http://fpc.state.gov/documents/organization/148791.pdf>.

<sup>176</sup> JAMES E. MCCARTHY & CLAUDIA COPELAND, CONG. RESEARCH SERV., R41914, EPA’S REGULATION OF COAL-FIRED POWER: IS A “TRAIN WRECK” COMING? 25 (2011) *available at* [http://assets.opencrs.com/rpts/R41914\\_20110808.pdf](http://assets.opencrs.com/rpts/R41914_20110808.pdf).

<sup>177</sup> LUTHER, REGULATING COAL COMBUSTION WASTE DISPOSAL *supra* note 172, at 1.

<sup>178</sup> LINDA LUTHER, CONG. RESEARCH SERV., R40544, MANAGING COAL COMBUSTION WASTE (CCW): ISSUES WITH DISPOSAL AND USE 18 (2010) *available at* <http://www.fas.org/sgp/crs/misc/R40544.pdf>.

<sup>179</sup> *See* LUTHER, REGULATING COAL COMBUSTION WASTE DISPOSAL, *supra* note 172.

## III. THE “INVISIBLE” COMMUNITIES OF THE COALFIELDS

Central to the following discussion is an understanding of the extent to which coalfield communities have been largely invisible to the broader world.<sup>180</sup> More than 130 years ago, vast layers of coal lay beneath the surface of America’s coal-producing regions. Beginning in the late nineteenth century, thousands of miners toiled in oppressive serf-like conditions in coal-company-owned towns in the anthracite coalfields of northeastern Pennsylvania and the bituminous coalfields that spread across Appalachia and the Midwest.<sup>181</sup> The twentieth century saw coal mining evolve from labor-intensive pick-and-shovel digging to modern high-tech mechanized mining.<sup>182</sup>

American coal mining from the late nineteenth century featured coal extraction by the “conventional” “room and pillar” mining method that involved use of men wielding picks and shovels and sometimes explosives.<sup>183</sup> In the 1940s, mechanized “continuous mining” was

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<sup>180</sup> See generally BARBARA FREESE, *COAL: A HUMAN HISTORY* (2003) [hereinafter “FREESE”].

<sup>181</sup> See generally Patrick C. McGinley, *From Pick and Shovel to Mountaintop Removal: Environmental Injustice in the Appalachian Coalfields*, 34 ENVTL. L. 21, 24-28 (2004) [hereinafter *Injustice in the Coalfields*].

<sup>182</sup> VACLAV SMIL, *TRANSFORMING THE TWENTIETH CENTURY: TECHNICAL INNOVATIONS AND THEIR CONSEQUENCES* 159-162 (2006).

<sup>183</sup> Room and pillar mining:

extract[s] coal by cutting a series of rooms into the coalbed and leaving pillars of coal, to support the mine roof. As mining advances, a grid-like pattern is formed in the panel of coal, which is about 400 feet wide and more than half a mile long. Generally, the rooms are 20 to 30 feet wide and the pillars 20 to 90 feet wide; the height usually is the same as the coalbed thickness. When mining reaches the end of the panel, the direction of mining usually is reversed. During this “retreat” phase of mining, as much coal as possible [is recovered] from pillars in a systematic manner until the roof [collapses]. The area is abandoned [upon completion of this phase of the coal extraction]. [Approximately] 50 to 60 percent of the minable coal [in a seam] is recovered with room-and-pillar mining.

introduced in American mines.<sup>184</sup> As mines were mechanized after the Second World War, coal production increased dramatically while the number of miners dropped appreciably.<sup>185</sup>

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ENERGY INFO. ADMIN, COAL DATA: A REFERENCE 10-11 (1995), *available at* <ftp://ftp.eia.doe.gov/pub/coal/coallast.pdf>.

<sup>184</sup> *Id.* (“continuous mining . . . uses a machine called a continuous miner that combines cutting, drilling, and loading coal in one operation and requires no blasting. See Joel Darmstadter, *Productivity Change in U.S. Coal Mining*, (Resources For The Future Discussion Paper 97-40, July 1997) at 13; available at:

<http://www.rff.org/rff/documents/rff-dp-97-40.pdf>.

<sup>185</sup> I.H. Rim, LABOR MARKETS IN A GLOBAL ECONOMY: AN INTRODUCTION (1996), at 228. A 1947 text reported the enormous increase in coal production in United States mines over the preceding century:

[I]n the year 1923, 1,880,000 tons of bituminous coal were produced by mechanized mines; by 1931, the bituminous coal produced by mechanized mining had reached 47,562,000 tons, a growth of 25 fold in eight years. This latter figure represents somewhat less than 10 percent of the total coal mined, so that there remains still to be mechanized approximately 90 percent of our bituminous coal mines. The process of mechanization in this field is continuing.

Technocracy Inc., *Technocratic Study Course* 116 (online ed. 2005), *available at* [http://ia600304.us.archive.org/29/items/TechnocracyStudyCourse/etsc1\\_3.pdf](http://ia600304.us.archive.org/29/items/TechnocracyStudyCourse/etsc1_3.pdf)

[hereinafter *Technocratic Study Course*]. The 1947 text also indicated the per worker-hour increase over the preceding century:

The best available data indicate that 100 years ago [1847], one man could not mine on the average more than a ton of coal in one day of 12 hours; in other words, it took 12 man-hours to mine one ton of coal. In the industrial growth that followed, the coal mining industry . . . increased enormously until by 1918, we produced 670 million tons of coal in one year. During all this period, slowly at first, and then more rapidly as the production grew in size, we improved our coal mining technique. First steam pumps and power hoists were introduced; then blowing engines for the ventilation of the mines; explosives were used for breaking the coal and rendering more easy its extraction. Later, coal cutting machines and automatic loaders were introduced. More recently, large scale strip mining methods have been employed where giant steam shovels of eight and ten



At its zenith, employment in bituminous coal mines reached 705,000 men in 1923, falling to 140,000 by 1970 and to 86,057 by 2010.<sup>186</sup> Approximately 200 million tons of coal were produced in the United States in 1900; in 2005, strip and underground mining extracted more than a billion tons.<sup>187</sup> West Virginia has alone produced approximately 13.4 billion tons of coal over the last century.<sup>188</sup> An economic cycle of boom and bust has accompanied the American coalfield community's journey across the twentieth century and into the new millennium.<sup>189</sup> Moreover, during this period, tens of thousands of miners died in mine explosions and accidents, hundreds of thousands died of black lung disease, and countless others were injured or disabled by occupational respiratory disease.<sup>190</sup> Coal mining has visited large-scale damage to land and water resources as well. In the decade and a half

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tons per bucket-full strip off the overlying rock to depths of 50 or 60 feet. . . . Figured on the basis of coal mined, the average rate of production of all the coal mined in the United States is approximately six tons per man per eight-hour day. Stated in terms of man-hours, this means that it now takes eight man-hours on the average to mine six tons of coal, whereas, 100 years ago it required twelve man-hours to mine one ton of coal. Thus, the man-hours required per ton of coal mined has declined since 1830 from 12 to 1.33 man-hours per ton of coal.

*Id.* In 2003, an average of almost 7 tons per worker hour are produced by U.S. coal miners. COAL PRODUCTION IN THE UNITED STATES., *supra* note 16, at 9.

<sup>186</sup> KY. OFFICE OF ENERGY POLICY, 2007-2008 POCKET GUIDE KENTUCKY COAL FACTS 4 (10th ed. 2008), *available at* <http://www.kentuckycoal.org/documents/CoalFacts08.pdf>; ENERGY INFO. ADMIN., ANNUAL COAL REPORT 2011 26 (2012), *available at* <http://www.eia.gov/coal/annual/pdf/acr.pdf>.

<sup>187</sup> COAL PRODUCTION IN THE UNITED STATES., *supra* note 16, at 2.

<sup>188</sup> West Virginia Office of Miners Health Safety and Training, *Production of Coal and Coke in West Virginia*

1863 – 2011, *available at*: <http://www.wvminesafety.org/historicprod.htm>.

<sup>189</sup> Sean O'Leary, Ted Boettner, *Booms and Busts: The Impact of West Virginia's Energy Economy* (July, 2010); *available at*:

<http://www.wvpolicy.org/downloads/BoomsBusts072111.pdf>. *See also*, *Injustice in the Coalfields*, *supra* note 178 at 24-28.

<sup>190</sup> See Patrick C. McGinley, *Climate Change And The War On Coal: Exploring The Dark Side*, 13 Vt. J. Envtl. L. 255, 294-298, 303 (2011) [hereafter "Dark Side"].

between 1975 and 1990, advancing technological changes moved underground coal mining away from the dominant continuous mining (machine) method of coal removal.<sup>191</sup> Many coal companies embraced “longwall” mining technology to cut huge swaths, 1500 feet wide and a mile or more long, through coal seams using only one-tenth the workers employed in continuous mining.<sup>192</sup> Above ground, mountaintop removal (“MTR”) mining blasted through Appalachian ridges using explosives and then gouged coal from the broken mountaintops using twenty story tall “draglines” with shovel “buckets” big enough to hold 26 Ford Escorts. .<sup>193</sup>

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<sup>191</sup> See generally ENERGY INFO. ADMIN, COAL DATA: A REFERENCE 10-11 (1995), available at <ftp://ftp.eia.doe.gov/pub/coal/coallast.pdf>. This transition has been explained:

Two basic variations are used in room-and-pillar mining: (1) conventional mining, the oldest, which consists of a series of operations that involve cutting the coalbed so it breaks easily when blasted and then loading the broken coal; and (2) continuous mining, which uses a machine called a continuous miner that combines cutting, drilling, and loading coal in one operation and requires no blasting. Because of the steps involved, conventional mining requires a larger crew at the coal face—for example, 10 miners as compared with 6 for continuous mining. Generally, mining advances into the coalbed in steps of about 10 feet for conventional mining and about twice that in continuous mining. Since the 1950’s, continuous mining has increased and now accounts for 56 percent of the coal output from underground mines, whereas the share from conventional mining has fallen to about 12 percent.

*Id.* at 11.

<sup>192</sup> For a detailed description of the longwall mining method, see discussion *infra* at notes 52-54 and accompanying text.

<sup>193</sup> See, Penny Loeb, *Shear Madness*, U.S. News and World Rept. (August 3, 1997); available at: [http://www.usnews.com/usnews/culture/articles/970811/archive\\_007620.htm](http://www.usnews.com/usnews/culture/articles/970811/archive_007620.htm). In the very first first national media description of mountaintop removal, Loeb explained the gargantuan size of the central technological mechanism facilitating the new mining method:

The new equipment and mining methods contributed to a significant increase in worker productivity. Conversely, the increased efficiencies of mechanized mining caused a dramatic decrease in the number of coal mining jobs.<sup>194</sup> In 1979, 58,565 miners produced 112.3 million tons of coal in West Virginia; two decades later, 15,000 miners produced more than 160 million tons.<sup>195</sup> As explained below, the new

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This \$100 million machine weighs 8 million pounds and contains enough steel to build 2,700 cars. An enormous extension cord feeds it up to \$50,000 worth of electricity a month. The dragline's bucket could hold 26 Ford Escorts. It bites off 110 cubic yards of earth in a single scoop.”

Mountaintop removal mining is a method authorized by the federal Surface Mining Control and Reclamation Act as a variance to the general requirement that surface mines be returned to their approximate original contour. 515 (c)(2), 30 U.S.C. § 1265 (c)(2)(“Where an applicant meets the requirements of paragraphs (3) and (4) of this subsection a permit without regard to the requirement to restore to approximate original contour set forth in subsection 515(b)(3) or 515(d)(2) and (3) of this section may be granted for the surface mining of coal where the mining operation will remove an entire coal seam or seams running through the upper fraction of a mountain, ridge, or hill (except as provided in subsection (c)(4)(A) hereof) by removing all of the overburden and creating a level plateau or a gently rolling contour with no highwalls remaining . . .”).

<sup>194</sup> Joel Darmstadter, *Innovation and Productivity in U.S. Coal Mining*, in PRODUCTIVITY IN NATURAL RESOURCE INDUSTRIES: IMPROVEMENT THROUGH INNOVATION, Chap. 2, at 48 (Ralph David Simpson, ed., 1999). For example, in West Virginia, between 1975 and 2007 coal production increased by more than fifty percent during 1975-2007—from 109,048, 898 to 160,043,930 tons. *Id.* Conventional continuous miner operations in underground room and pillar mines employed significantly more miners than required in longwall mines. *Id.* The same is true with regard to mountaintop removal mines that replaced cadres of miners with huge mining equipment. Non-union coal mine employment has also seen a dramatic decline over the last three decades as coal company resistance to unionization has risen along with increased corporate profits. Eric Arnesen, 1 ENCYCLOPEDIA OF U.S. LABOR AND WORKING-CLASS HISTORY, at 1430-1434 (2007).

<sup>195</sup> The number of coal miners increased and by 2010 had increased to 21,091. U.S. ENERGY INFORMATION ADMINISTRATION, ANNUAL COAL REPORT 2010 (Revised, July 2012), <http://205.254.135.7/coal/annual/pdf/acr.pdf>. It has been suggested that increased productivity derived from new mining methods and equipment may be overstated because of the failure to consider externalized costs:

mining methods and equipment caused more extensive environmental damage than was possible by earlier mining methods.

Coal fueled the industrial revolution and America's defense through the nation's Twentieth Century wars. For many decades it provided half of the nation's electricity. Nonetheless, the contributions of coal miners and their communities to the nation's welfare have gone largely unrecognized by the larger public. Historically, if coalfield communities drew national attention at all, it has been for a short duration after mine disasters killed coal miners. The nation's image of coalfield residents has been shaded by media-promoted stereotypes generated by the likes of television's (still in syndication) *Beverly Hillbillies*, *Hee Haw*, *Green Acres*, the *Dukes of Hazard*, and the movie *Deliverance*—all of which demean the region's inhabitants.<sup>196</sup> Such pejorative media

From a conceptual point of view, the questions arises as to whether, and to what extent, some of the health-safety- environmental impacts of coal mining fit the notion of "externalities" -- at least for years preceding statutory requirements for dealing with such problems (see below). That is, were the costs of dealing with, or averting, these impacts borne by society at large or the affected individuals rather than being financially accounted for -- "internalized" -- in the operations of the mining firm? If the former, output and productivity of the firm and of the industry might, to some hard-to-quantify degree, be overstated because certain costly damages from coal mining failed to be reflected as an offset to the value of production.

*Id.* at 20.

<sup>196</sup> R.J. Harris, A COGNITIVE PSYCHOLOGY OF MASS COMMUNICATION 104 (2009). ("Among the most extremely stereotyped and unrealistic in the history of the airwaves [were] . . . *The Beverly Hillbillies* and *Green Acres*, then *Hee Haw* and the *Dukes of Hazard* . . . [a]ll portrayed rural [Appalachian] people as uneducated stupid rubes, uneducated totally lacking in common sense and worldly experience.") See generally Sandra L. Ballard, "Where Did Hillbillies Come From? Tracing Sources of the Comic Hillbilly Fool in Literature," in BACK TALK FROM APPALACHIA: CONFRONTING STEREOTYPES, (Dwight B. Billings, Gurney Norman, Katherine Ledford, eds.), 138-149. *DELIVERANCE* (Warner Bros. 1972) was nominated for an Academy Award (Best Picture 1972) ACADEMY OF MOTION PICTURE SCIENCES, *available at*

characterizations have continued in the twenty-first century.<sup>197</sup> Appalachian scholar John Solomon Otto has observed:

Even today, any mention of the Appalachian mountains conjures up images of “hillbillies,” log cabins, “shootin’ arns,” “feudin’,” “moon-shine,” “revenooers,” and dueling banjos in the popular mind. The southern “hillbilly” has become a stock character of popular culture, appearing in comic strips, television, fiction and movies.<sup>198</sup>

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[http://awardsdatabase.oscars.org/ampas\\_awards/DisplayMain.jsp?curTime=1344773876780](http://awardsdatabase.oscars.org/ampas_awards/DisplayMain.jsp?curTime=1344773876780); see also John C. Inscoc, *Deliverance*, THE NEW GEORGIA ENCYCLOPEDIA (2012) (“Both book and movie had much to do with confirming to a national audience the hillbilly stereotypes that had long plagued southern Appalachia. The film, in particular, stands as the most degrading depiction of southern mountaineers ever put on film and led to strong protests . . . by . . . Appalachian scholars.”), available at <http://www.georgiaencyclopedia.org/nge/ArticlePrintable.jsp?id=h-969#>.

<sup>197</sup> The MTV television cable network touts *Buckwild*, its’ new “reality” series as “an authentic comedic series following an outrageous group of childhood friends from the rural foothills of West Virginia who love to dodge grown-up responsibilities and always live life with the carefree motto, ‘whatever happens, happens.’” *About Buckwild*, MTV (Jan. 3, 2012), <http://www.mtv.com/shows/buckwild/series.jhtml>. In contrast, Joe Manchin, a United States Senator from West Virginia described the series as “play[ing] to ugly, inaccurate stereotypes” and complained that “[i]nstead of showcasing the beauty of our people and our state, [the series] . . . preyed on young people, coaxed them into displaying shameful behavior – and now [MTV is] profiting from it. Richard Simon, ‘*Buckwild*,’ new MTV reality show, draws wrath of W. Va. senator, LOS ANGELES TIMES (Dec. 11, 2012); available at <http://www.latimes.com/news/nation/nationnow/la-na-nn-mtv-buckwild-senator-objects-20121211,0,3519204.story>.

<sup>198</sup> J.S. Otto, *Hillbilly Culture: The Appalachian Mountain Folk in History and Popular Culture*, 24 SO. QUARTERLY 25-34 (1986), available at [https://docs.google.com/viewer?a=v&q=cache:oo5SbUgqE2IJ:webpages.charter.net/cors/o/power/hillbilly.doc+%22The+southern+hillbilly+has+become+a+stock+character+of+popular+culture%22&hl=en&gl=us&pid=bl&srcid=ADGEESgvx614\\_kWfAhIldnSkqbfuun7fC5qg4cB4LAAVbcNRq8tBZcaOtghb70E9DgbUayYcr2y2wckeRgyLUZP2mxFv9zi9eWiJQp064eZLZ\\_HPsOJIEkBzSNP\\_rpdf0HTQZpaCt&sig=AHIEtRkYh4oc3W3BEs7k6O2V8xyu7IXMQ](https://docs.google.com/viewer?a=v&q=cache:oo5SbUgqE2IJ:webpages.charter.net/cors/o/power/hillbilly.doc+%22The+southern+hillbilly+has+become+a+stock+character+of+popular+culture%22&hl=en&gl=us&pid=bl&srcid=ADGEESgvx614_kWfAhIldnSkqbfuun7fC5qg4cB4LAAVbcNRq8tBZcaOtghb70E9DgbUayYcr2y2wckeRgyLUZP2mxFv9zi9eWiJQp064eZLZ_HPsOJIEkBzSNP_rpdf0HTQZpaCt&sig=AHIEtRkYh4oc3W3BEs7k6O2V8xyu7IXMQ). Professor Otto elaborated on this phenomenon:

In 1934, Al Capp launched the “Li’l Abner” strip . . . set in the Kentucky mountains feature[ing] a comic “hillbilly” family—the Yokums. Though “Li’l

Otto emphasizes that “[d]espite his popularity, the ‘hillbilly’ has little basis in fact, and the hillbilly stereotype is bitterly resented by the contemporary inhabitants of the Southern Appalachian mountains—a region which includes West Virginia, eastern Kentucky, southwestern Virginia . . . .”—the heart of the central Appalachian coalfields.<sup>199</sup>

Stereotyping Appalachian people as ignorant, uneducated “hillbillies”, and worse, has been likened to the discrimination and derision based on race, gender, and ethnicity long plaguing the nation.<sup>200</sup>

The ugly stereotyping of Appalachians does not, however, explain the poverty and lack of economic and educational opportunity frequently found in a region often referred to by political and business leaders as the “Saudi Arabia of coal.”<sup>201</sup> The region’s massive coal reserves have

Abner" proved . . . popular. . . , it was the "Barney Google" comic strip which introduced the archetypal cartoon "hillbilly" "Snuffy Smith" . . . [the cartoon] led comic hero, "Barney Google, deep into the Kentucky mountains. There Google met the disreputable "Snuffy Smith" and his wife, Lowizie. She did all the plowing and housework, while "Snuffy" stole chickens, made "moonshine" whiskey, tangled with "revenooers," and slept off the effects of too much "corn squeezins" . . . In conjunction with "Li'l Abner," the "Snuffy Smith" comic strip portrayed "hillbillies" as the shiftless denizens of the Appalachian mountains, "Hillbillies" were poor, because they were lazy like "Snuffy Smith and not because they were the victims of complex demographic and economic circumstances.

*Id.* See also E. T. Arnold, *Abner Unpinned: Al Capp's Li'l Abner, 1940-1955*, 24 APPALACHIAN J. at 420-436. (1997).

<sup>199</sup> Otto, *supra* note 194, at 25.

<sup>200</sup> Brandon M. Stump, *From Reconstruction To Obama: Understanding Black Invisibility, Racism In Appalachia*, 112 W. VA. L. REV. 1095, 1107 (2010) (“While white Appalachians can never claim that societal prejudices have impacted their lives in the same way as those of their black counterparts, both white Appalachians and blacks were seen as inferior groups to a group of whites who believed they were superior.”).

<sup>201</sup> See, e.g., Eric Roston, THE CARBON AGE: HOW LIFE'S CORE ELEMENT HAS BECOME CIVILIZATION'S GREATEST THREAT 212 (2008) (“Coal industry officials have called the United States the ‘Saudi Arabia of coal at least since the 1973 oil crisis.’); Video Interview by Geoff Golvin with Tom Fanning, CEO, The Southern Co., *Fortune Magazine* (Nov. 9, 2010) (video) available at [http://money.cnn.com/video/news/2011/11/09/n\\_southco\\_fanning2.fortune/](http://money.cnn.com/video/news/2011/11/09/n_southco_fanning2.fortune/) (“The United

produced a century of significant profits for out-of-state investors, land holding companies, and corporate entrepreneurs.<sup>202</sup> In contrast, coalfield communities have not profited equitably from their positioning in the heart of an immense mineral bounty.<sup>203</sup> I have previously written about this irony:

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States is the Saudi Arabia of Coal.”); Rudy Giuliani, Statement during Republican Presidential debate in Boca Raton, Florida, POLITIFACT.COM (Jan. 25, 2008), <http://www.politifact.com/truth-o-meter/statements/2008/jan/25/rudy-giuliani/us-is-saudi-arabia-of-coal/> (“We have more coal reserves in the United States than they have oil reserves in Saudi Arabia.”); Press Release, U.S. Department of the Interior, Secretary Salazar: Administration’s Strategy Seeks Responsible Energy Development on All Fronts, (Nov. 11, 2009), [http://www.doi.gov/news/pressreleases/2009\\_11\\_09\\_releaseA.cfm?renderforprint=1&](http://www.doi.gov/news/pressreleases/2009_11_09_releaseA.cfm?renderforprint=1&) (“the United States is the Saudi Arabia of coal”); President Barack Obama, Obama Addresses Nation’s Governors About Energy Policy, WASH. POST, (Feb. 3, 2010) <http://projects.washingtonpost.com/obama-speeches/speech/177/> (“It’s been said that the United States is the Saudi Arabia of coal -- and that’s because, as I said, it’s one of our most abundant energy resources.”).

<sup>202</sup> Wendy B. Davis, *Out of the Black Hole: Reclaiming the Crown of King Coal*, 51 AM.U.L.REV. 905, 907 (2002). See also Tom D. Miller, *Absentees Dominate Land Ownership, West Virginia: Documents in the History of a Rural-Industrial State*, reprinted from HUNTINGTON HERALD-DISPATCH, Dec. 1, 1974 at 316-323, available at <http://www.as.wvu.edu/wvhistory/documents/104.pdf>; Bryan C. Banks, *High Above the Environmental Decimation and Economic Domination of Eastern Kentucky, King Coal Remains Firmly Seated on Its Gilded Throne*, 13 BUFF. ENVTL. L.J. 125, 133 (2006).  
<sup>203</sup> See RONALD D. ELLER, *UNEVEN GROUND: APPALACHIA SINCE 1945* (2008). Professor Eller observed:

The introduction of modern mining machinery reflected fundamental changes in the ownership structure of the coal industry, as a few large conglomerates came to dominate Appalachian coal production . . . arrival of the energy corporations gave new meaning to the long legacy of absentee ownership of Appalachian resources. Less productive mines could be closed with little regard for local economies, and the application of new technologies was disproportionately weighted to increase production rather than to improve the health and safety of miners. Distant corporate executives and international stockholders were even less concerned with the future of declining coalfield communities than their predecessors had been.

Travelers entering Williamson, the county seat of Mingo County, West Virginia, pass a faded road sign that reads: “Welcome to the Billion Dollar Coalfields.” The irony of the greeting is hard to escape. Driving into the town that lies in the heart of central Appalachia’s coal-producing region, one sees boarded-up stores and vacant and dilapidated buildings. Discouraging economic data and high unemployment in Mingo and other coal counties of southern West Virginia confirm what the eye sees: The billions of dollars of coal reserves mined from the region have only marginally benefited local people. After a century of mining in the “billion dollar coalfields,” local communities lack funds to upgrade aging schools; tens of thousands live below the federal “poverty line” and public services such as fire, police, sewage treatment, and libraries struggle to survive on “bare-bones” budgets.<sup>204</sup>

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*Id.* at 224-225. See generally R.D. ELLER, MINERS, MILLHANDS, AND MOUNTAINEERS: INDUSTRIALIZATION OF THE APPALACHIAN SOUTH 1880-1930 (1982) at 199-22.

<sup>204</sup> *Injustice in the Coalfields*, *supra* note 178, at 21. A recent study confirmed the extent to which West Virginia’s infrastructure has been decaying despite continued high level of coal production over the last two decades:

. . . West Virginia has slowly reduced spending on infrastructure projects over the past two decades. Between 1996 and 2006, West Virginia’s per capita spending on infrastructure had an average annual decline of 1.3 percent. As infrastructure investments declined, the list of critical infrastructure in need of replacement and repair has grown. Currently, 21 percent of West Virginians are not connected to the public water supply, and 45 percent are not connected to a public wastewater system. West Virginia also ranks 48th in the share of the population with broadband access at home. In addition, nearly one-third of the state’s bridges and major roads are in poor or mediocre condition and need significant investments to remain at an acceptable level of safety and efficiency. The West Virginia Department of Transportation projected a funding shortfall of nearly \$5 billion from 2009 to 2018 for improving road and bridge conditions.

Ted Boettner, et al., *Creating An Economic Diversification Trust Fund: Turning Nonrenewable Natural Resources Into Sustainable Wealth For West Virginia*, W.V. CENTER ON BUDGET AND POLICY, 2012 (hereinafter *Diversification*), at 8, available at [http://www.downstreamstrategies.com/documents/reports\\_publication/ds\\_economic\\_diversification\\_trust\\_fund.pdf](http://www.downstreamstrategies.com/documents/reports_publication/ds_economic_diversification_trust_fund.pdf).



In 2011, Mingo County coal mines employed approximately 1,200 miners who produced nearly 4 million tons of coal from underground facilities and roughly 8 million from surface mines.<sup>205</sup> Even with this significant level of coal mining jobs, the unemployment rate in Mingo County in 2011 was 9.4 percent; in 2012 that rate rose to 9.9 percent.<sup>206</sup> Should the county lose even half of those mining jobs, the economic impact on the local communities would be devastating.

More broadly, West Virginia ranked second in U.S. coal production in 2010.<sup>207</sup> Nevertheless, West Virginia's per capita gross state product ("GSP") ranked 47th that year; its per capita income, 47th; GSP per worker, 39th; median household income, 49th; share of population in poverty, 42nd; share of children in poverty, 40th; share of population with disability, 50th; and share of seniors in poverty, 35th.<sup>208</sup> Similar indications of economic distress are found throughout the central Appalachian coalfield region, notwithstanding coal's positive economic contributions to local economies.<sup>209</sup> A study of the costs and benefits of

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Even with this significant level of coal mining jobs, the unemployment rate in Mingo County in 2011 was 9.4 percent; in 2012 that rate rose to 9.9 percent. *Unemployment Rates by County in West Virginia, June 2012*, U.S. BUREAU OF LABOR STATISTICS, available at <http://data.bls.gov/cgi-bin/print.pl/ro3/wvlaus.htm>. Should the county lose even half of those mining jobs, the economic impact on the local communities would be devastating. But see, discussion at notes \_\_\_\_, infra and accompanying text, for examples of efforts of coalfield communities to diversify their economies.

<sup>205</sup> *West Virginia Mining Statistics 1996-2012*, W.VA. OFFICE OF MINERS' HEALTH SAFETY AND TRAINING, available at <http://www.wvminesafety.org/STATS.HTM#2011>.

<sup>206</sup> *Unemployment Rates by County in West Virginia*, U.S. BUREAU OF LABOR STATISTICS, June 2012, available at <http://data.bls.gov/cgi-bin/print.pl/ro3/wvlaus.htm>.

<sup>207</sup> *U.S. Coal production By State, & By Rank*, NATIONAL MINING ASS'N (Nov. 2010), available at [http://www.nma.org/pdf/c\\_production\\_state\\_rank.pdf](http://www.nma.org/pdf/c_production_state_rank.pdf) (citing U.S. Energy Information Administration, Quarterly Coal Report 2011, available at <ftp://ftp.eia.doe.gov/coal/qcr/0121103q.pdf>).

<sup>208</sup> *Diversification*, supra note 200, at 7.

<sup>209</sup> See e.g., *Diversification*, supra, note 200. McIlmoil and Hansen observe:

Coal mining has played an important role in local economic development in Central Appalachia, primarily due to the jobs and taxes that the industry has provided. In 2008, for instance, the coal industry employed 37,000 workers

Kentucky coal mining asserts the costs are much greater than the benefits.<sup>210</sup> This analysis estimated that, in 2006, the State of Kentucky provided the equivalent of a \$115 million subsidy to its coal industry – a figure that did not include many costly coal externalities:

These figures cover only a portion of the full costs of the coal industry to the state. We do not include the many externalized costs imposed by coal including healthcare, lost productivity resulting from injury and health impacts, water treatment from siltation caused by surface mining, water infrastructure to replace damaged wells, limited development potential due to poor air quality, and social spending associated with declines in coal employment and related economic hardships of coalfield communities. Some of these externalities impose additional costs directly to the state budget while others are borne by communities that mine and burn coal and by those outside the region.<sup>211</sup>

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directly and indirectly across the region, accounting for between 1% and 40% of the labor force in individual counties. Additionally, the coal severance tax generates hundreds of millions of dollars in state revenues across the region every year, with tens of millions of dollars being distributed to counties and municipalities. Despite these economic benefits, coal-producing counties in Central Appalachia continue to have some of the highest poverty and unemployment rates in the region, and due to the dependence on coal for economic development, any changes in coal production will have significant impacts on local economies.

Rory McIlmoil & Evan Hansen, *The Decline of Central Appalachian Coal and the Need for Economic Diversification*, DOWNSTREAM STRATEGIES, January 19, 2010, at 5.

<sup>210</sup> See Melissa Konty & Jason Bailey, *The Impact of Coal on the Kentucky State Budget*, MOUNTAIN ASSOCIATION FOR COMMUNITY ECONOMIC DEVELOPMENT, (June 25, 2009).

<sup>211</sup> *Id.* (“Report provides an analysis of the industry’s fiscal impact by estimating the tax revenues generated by coal and the state expenditures associated with supporting the industry . . . We estimate for Fiscal Year 2006 Kentucky provided a net subsidy of nearly \$115 million to the coal industry”). As explained above in the text, the study did not take into account many of coal’s negative externalities. *Id.*

A 2011 New York Academy of Sciences analysis emphasizes the economic costs of coal externalities:

Each stage in the life cycle of coal—extraction, transport, processing, and combustion—generates a waste stream and carries multiple hazards for health and the environment. These costs are external to the coal industry and are thus often considered “externalities.” We estimate that the life cycle effects of coal and the waste stream generated are costing the U.S. public a third to over one-half of a trillion dollars annually. Many of these so-called externalities are, moreover, cumulative. Accounting for the damages conservatively doubles to triples the price of electricity from coal per kWh generated, making wind, solar, and other forms of non-fossil fuel power generation, along with investments in efficiency and electricity conservation methods, economically competitive.<sup>212</sup>

The Academy’s report focused on coal’s multiple waste streams that, in turn, carry numerous health and environmental hazards, costing in the range of \$175 billion to \$520 billion yearly during coals life cycle.<sup>213</sup> However, like the Kentucky analysis quoted above, the Academy’s calculation of externalized costs failed to address the extraordinarily high non-economic and intangible costs created during coal’s life cycle. To fully appreciate the context in which the “war about coal” rages, one must comprehend the full measure of coal’s externalities visited upon these communities.

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<sup>212</sup> Paul R. Epstein, et al., *Full Cost Accounting for the Life Cycle of Coal*, 119 ANN. N.Y. ACAD. SCI. 73, 73-98 (2011) [hereafter, *Full Accounting*], available at

[http://solar.gwu.edu/index\\_files/Resources\\_files/epstein\\_full%20cost%20of%20coal.pdf](http://solar.gwu.edu/index_files/Resources_files/epstein_full%20cost%20of%20coal.pdf).

<sup>213</sup> *Id.* at 93.

## VI. EXTERNALITIES: COSTS OF COAL

It is not the purpose of this essay to delve deeply into coal's externalities, as this has been done previously.<sup>214</sup> Below, after a short discussion of coal's history, those externalities will be summarized so that the reader may gain a deeper understanding of the factual battleground upon which the war about coal is being fought.

A. *Longwall Mining*

As noted above, underground "longwall" mining cuts out large portions of coal seams—often 1,500 feet wide and a mile or more long.<sup>215</sup> The longwall method removes huge blocks of a coal seam that lies horizontally, hundreds of feet below the surface.<sup>216</sup> A large drum with cutting bits ("shears") rips coal from the seam.<sup>217</sup> Coalfield communities have frequently experienced significant subsidence damage to roads, homes, and other structures as a result of such mining.<sup>218</sup> In a case upholding a state law regulating coal mine subsidence, the Supreme Court

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<sup>214</sup> See Patrick C. McGinley, *Climate Change And The War On Coal: Exploring The Dark Side*, supra note \_\_.

<sup>215</sup> See generally S.S. PENG & H.S. CHIANG, *LONGWALL MINING* (1984). See also BARLOW BURKE, JR. ET AL., *MINERAL LAW: CASES AND MATERIALS* 316 (1994) [hereinafter BURKE].

<sup>216</sup> BURKE, supra note 211, at 316. Longwall mining uses a large drum with cutting bits ("shear") slice coal from the seam. *Id.* Miners, are protected from roof cave-ins by overhead hydraulic shields or "roof supports". *Id.* The roof supports move forward mechanically along the 1,000 to 1,500 foot wide longwall "face" as the shears cut into the coal. *Id.* As the mineral is cut by the shear bits, it drops onto a conveyer belt that runs parallel to the coal seam face. *Id.* The conveyor belt then carries the newly cut coal out of the mine to the surface for processing and transportation to market. *Id.* As the supports move forward, the overlying strata caves in, causing rock layers above to subside. *Id.*  
<sup>217</sup> *Id.*

<sup>218</sup> *Keystone Bituminous Coal Ass'n v. DeBenedictis*, 480 U.S. 470, 474-5 (1987). The Court upheld a Pennsylvania law prohibiting underground longwall and room and pillar mining where the extraction of coal might harm important public interests. *Id.*

of the United States defined subsidence and summarized the attendant harm:

Coal mine subsidence is the lowering of strata overlying a coal mine, including the land surface, caused by the extraction of underground coal. This lowering of the strata can have devastating effects. It often causes substantial damage to foundations, walls, other structural members, and the integrity of houses and buildings. Subsidence frequently causes sinkholes or troughs in land[,] which make the land difficult or impossible to develop. Its effect on farming has been well documented-many subsided areas cannot be plowed or properly prepared. Subsidence can also cause the loss of groundwater and surface ponds.<sup>219</sup>

Importantly, coalfield residents rely on well and spring water for domestic use far more often than urban and suburban dwellers.<sup>220</sup> Longwall mining frequently contaminates or drains those aquifers that provide rural families with domestic well and spring water supplies.<sup>221</sup>

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<sup>219</sup> *Id.*

<sup>220</sup> A 1980 report of the Environmental Protection Agency found that the majority of central Appalachian counties where coal production is the highest (Ohio, western Kentucky, southern West Virginia, and western Virginia) rely on ground water supplies. Some coal counties were found to rely on groundwater for more than ninety percent of their water needs. Jeffrey P. Sgambat, et al., *Effects of Underground Coal Mining on Groundwater in the Eastern United States*, U.S.EPA Rept. 600/7-80-120 (June 1980) at 50-63.

<sup>221</sup> For a discussion of the externalities of longwall coal mining, see generally ENERGY INFORM. ADMIN., LONGWALL MINING (Mar. 1995), available at <ftp://ftp.eia.doe.gov/coal/tr0588.pdf>; Schmid & Company, Inc., *The Increasing Damage from Underground Coal Mining in Pennsylvania*, 25-31 (2011), available at <http://www.schmidco.com/17April2011SchmidAct54Analysis.pdf>; Anthony Iannacchione1, et al., *The Effects of Subsidence Resulting from Underground Bituminous Coal Mining on Surface Structures and Features and on Water Resources*, 2003 to 2008, at I\_9-I\_10 (2011) (prepared for Pa. Dept. Env. Prot.), available at <http://www.schmidco.com/Act54/3rd%20Act%2054%20Report%20Part%201.pdf>; see also E. Perry, et al., *A Survey of Fish and Aquatic Habitat in Three Streams Affected by*

Another impact of longwall mining that has seldom received attention is the release of naturally occurring coal bed methane into the atmosphere. Coal bed methane is a potent greenhouse gas released during underground mining operations as coal is cut from seams and is exhausted from mines via ventilation shafts and degasification wells.<sup>222</sup> Longwall and other methods of underground mining release thirteen percent of the methane gas emitted annually by industrial sources, exacerbating the accumulation of gases that heat the earth's atmosphere.<sup>223</sup>

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*Longwall Mining in Southwestern Pennsylvania*, (2004), available at <http://www.publicintegrity.org/investigations/longwall/assets/pdf/Longwall2-Doc3.pdf>; Colin J. Booth, *Groundwater as a constraint of longwall mining*, RMZ-M&G 49, 49–52 (2003), available at [http://www.rmz-mg.com/letniki/rmz50/rmz50\\_0049-0052.pdf](http://www.rmz-mg.com/letniki/rmz50/rmz50_0049-0052.pdf). Cf. see, Don Hopey, *Consol Energy Sued for \$58 Million to Fix Greene Co. Damage*, PITTSBURGH POST-GAZETTE, Feb. 1, 2008, available at <http://www.post-gazette.com/stories/local/uncategorized/pennsylvania-says-mining-destroyed-lake-dam-in-park-378602/> (discussing state lawsuit against coal company claiming company lied about risks of mining under Ryerson Station State Park Dam, necessitating draining of Duke Lake, a popular swimming, boating and fishing spot).

<sup>222</sup> See *Reducing Coal Subsidies and Trade Barriers: Their Contribution to Greenhouse Gas Abatement*, 5 ENV'T & DEV. ECON. 457, 461 (1997), available at [http://pdf.wri.org/worldresources1996-97\\_bw.pdf](http://pdf.wri.org/worldresources1996-97_bw.pdf) [hereinafter *Reducing Coal Subsidies*] (citing World Resources Report 1996-1997 328). See also Jeff L. Lewin et al., *Unlocking the Fire: A Proposal for Judicial or Legislative Determination of the Ownership of Coalbed Methane*, 94 W. VA. L. REV. 563, 584–87 (1992) [hereinafter *Unlocking Fire*]. See also L. James Lyman, *Coalbed Methane: Crafting a Right to Sell From an Obligation To Vent*, 78 U. COLO. L. REV. 613, 615 (2007).

<sup>223</sup> See *Reducing Coal Subsidies*, *supra* note 218. Two decades ago one commentator warned:

Approximately two-thirds of the wasted methane is intentionally “vented” as part of the coal mining process. Such venting not only wastes the energy present in this methane, but also significantly contributes to the problem of global warming, as methane is a powerful greenhouse gas with twenty-three times more “radiative effect” than carbon dioxide. Increased methane concentrations in the atmosphere are believed to be responsible for fifteen to twenty percent of the recent increase in global temperatures.

*Unlocking Fire*, *supra* note 218, at 584–87.

## B. Mountaintop Removal Strip Mining

Modern coal strip mining utilizes so-called “mountaintop removal” mining methodology to blast through mountain ridge tops in Kentucky, West Virginia, and Virginia.<sup>224</sup> Explosives are a critical component of large-scale “MTR” mining.<sup>225</sup> Blasting breaks apart overlying rock strata. Coal is scooped from the seams by twenty-story tall “draglines” after overlying strata is removed.<sup>226</sup> Remaining is a huge amount of top and subsoil, rock and debris, known as “spoil.” Heavy equipment is used to shove the spoil into valleys at the head of hollows. Headwater streams located there are buried under hundreds of feet of spoil for distances up to several miles in length.

The accumulated spoil dumped into mountain hollows is referred to as “valley fill” in coal mining parlance.<sup>227</sup> These valley fills cover and

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<sup>224</sup> See, e.g., *Injustice in the Coalfields*, supra note 178 at 54–57.

<sup>225</sup> See, e.g., Sophia Yan, *In West Virginia, a Battle Over Mountaintop Mining*, TIME MAGAZINE (Mar. 12, 2010), available at: <http://www.time.com/time/health/article/0,8599,1971709,00.html> (“Some three million pounds of explosives are detonated each day in West Virginia for coal mining, according to the U.S. Geological Survey . . .”).

<sup>226</sup> Rudy Abramson, *New Coal Isn't Old Coal*, 20 APF REPORTER 1 (2001) (stating that “[t]he efficiency of [Appalachia’s] most productive mines pales beside that of mines in the West.”). . . Strip mining operations use draglines that take 200 cubic yard bites and dump coal or rock in to 400-ton trucks. *Id.* See Ken Ward Jr., *Strip-Mining Battle Resurfaces in State*, SUNDAY GAZETTE-MAIL, Mar. 22, 1998, at 1A, available at <http://wvgazette.com/static/series/mining/MINE0322.html> [hereafter *Strip-Mining Battle Resurfaces*] (explaining that “valley fills” contain huge amounts of waste rock, “enough . . . to fill 1.1 million railroad cars, a train that would stretch from Charleston [W. Va.] to Myrtle Beach, S.C., and back a dozen times.”). See also Ken Ward Jr., *Industry, Critics Look for Mountaintop Removal Alternative: Is There Another Way?*, SUNDAY GAZETTE-MAIL, June 6, 1999, at 1A, available at <http://wvgazette.com/static/series/mining/mining0606.html> (noting that “mountaintop removal mines use 240-ton trucks. Valley fills sometimes measure 100 million cubic yards or more.”).

<sup>227</sup> See *Bragg v. Robertson*, 72 F. Supp. 2d 642, 646 (S.D.W. Va. 1999) (describing mountaintop removal and valley fills), *rev'd sub nov.* *Bragg v. W. Va. Coal Ass'n*, 248 F.3d 275 (4th Cir. 2001).

obliterate the upper reaches of streams.<sup>228</sup> Water percolating through the spoil contaminates water quality miles downstream from the fills. MTR valley fills have already buried two thousand miles of Appalachian headwater streams.<sup>229</sup> Recent studies of watersheds downstream from MTR mines have documented water quality deterioration and diminished biodiversity while a concentration of metals pollutes soil and water.<sup>230</sup> One federal court weighing in on the impact from MTR valley fills found that the fills cause high levels of harmful conductivity in downstream watersheds:

At trial, Plaintiffs presented unrefuted evidence of a correlation between mining, elevated conductivity . . . and the loss of sensitive benthic macroinvertebrates in streams below valley fills. The testimony of Plaintiffs' experts was compelling, and the efforts by the Corps and Highland to discredit them were in vain. The Court is thoroughly convinced that large scale surface mining is strongly correlated with elevated levels of conductivity and the loss

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<sup>228</sup> *Id.*

<sup>229</sup> See U.S. EPA, *EPA Issues Comprehensive Guidance to Protect Appalachian Communities From Harmful Environmental Impacts of Mountain Top Mining* (Apr. 1, 2010), available at [http://water.epa.gov/lawsregs/guidance/wetlands/upload/2010\\_04\\_10\\_wetlands\\_guidance\\_appalachian\\_mtntop\\_mining\\_press\\_release.pdf](http://water.epa.gov/lawsregs/guidance/wetlands/upload/2010_04_10_wetlands_guidance_appalachian_mtntop_mining_press_release.pdf).

<sup>230</sup> M.A. Palmer et al., *Mountaintop Mining Consequences*, 327 SCI. 148, 148 (2010). (“current peer-reviewed studies and of new water-quality data from WV streams revealed serious environmental impacts that mitigation practices cannot successfully address. Published studies also show a high potential for human health impacts.”), available at <http://www.jacksonkelly.com/JK/pdf/Version%204.pdf>. See also, E. S. Bernhardt, et al., *How many mountains can we mine? Assessing the regional degradation of Central Appalachian rivers by surface coal mining*, 46 ENVTL. SCI. TECH. 8115 (2012) (“results [of study] provide little evidence that reclamation efforts are effectively reducing the water quality consequences of surface mining and suggest that each newly permitted surface coal mine is likely to increase the spatial extent of chemically altered and biologically impaired streams in the region.”).



of sensitive macroinvertebrates downstream of valley fills.<sup>231</sup>

Following a litigation-triggered “site visit,” another federal district court judge issued an opinion indicating the extent of MTR’s widespread surface impacts he observed:

[The flight] revealed the extent and permanence of environmental degradation this type of mining produces. . . . [T]he ground was covered with light snow, and mined sites were visible from miles away. The sites stood out among the natural wooded ridges as huge white plateaus, and the valley fills appeared as massive, artificially landscaped stair steps. Some mine sites were twenty years old, yet tree growth was stunted or non-existent. Compared to the thick hardwoods of

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<sup>231</sup> Ohio Valley Env'tl. Coal. Inc., v. U.S. Army Corps of Eng'rs, 883 F.Supp.2d 627, 645 (2012). However, notwithstanding this comment, the Court deemed itself bound by earlier precedent that required judicial deference to Corps of Engineers judgment regarding permit issuance. *See Id.* (citing Ohio Valley Env'tl. Coal. v. Aracoma Coal Co., 556 F.3d at 209 (4th Cir. 2009)). The court granted summary judgment to the Corps stating:

The Corps’ conclusion that the cumulative impacts of this project will be insignificant is very troubling . . . . However, even where the science is clear . . . that surface mining activities are strongly correlated with increases in conductivity and declining biodiversity, judicial review of the Corps’ decision is narrow. . . . In the complicated regulatory scheme governing surface mining operations, the Corps does not have primary responsibility for water quality. . . . It is not unreasonable for the Corps to rely on the expertise of the WVDEP, the agency with primary responsibility for water quality, in determining that impacts on water quality will be insignificant. The Corps has analyzed the cumulative impacts, “articulated a satisfactory explanation for its conclusion,” and thus has not acted arbitrarily or capriciously.

*Ohio Valley Env'tl. Coal. Inc.*, 883 F.Supp.2d at 645.

surrounding undisturbed hills, the mine sites appeared stark and barren and enormously different from the original topography.<sup>232</sup>

In granting a preliminary injunction to plaintiffs who filed suit to block the permitting of a huge new MTR mine the same judge concluded: If the forest canopy . . . is leveled, exposing the stream to extreme temperatures, and aquatic life is destroyed, these harms cannot be undone. If the forest wildlife are [sic] driven away by the blasting, the noise, and the lack of safe nesting and eating areas, they cannot be coaxed back. If the mountaintop is removed, even [coal company] engineers will affirm that it cannot be reclaimed to its exact original contour. Destruction of the unique topography of southern West Virginia, and of Pigeonroost Hollow in particular, cannot be regarded as anything but permanent and irreversible.<sup>233</sup>

A 2011 EPA report examined the impact of MTR valley fills on aquatic ecosystems in the Central Appalachia coalfields. It found that MTR valley fills “lead directly to five principal alterations of stream ecosystems”:

- 1) springs, and ephemeral, intermittent, and small perennial streams are permanently lost with the removal of the mountain

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<sup>232</sup> Bragg v. Robertson, 54 F. Supp. 2d 635, 646 (S.D. W. Va. 1999). The judge overflowed all MTR mines in West Virginia and travelled with the parties counsel and experts to surface mine locations prior to issuing the opinion. *Id.*

<sup>233</sup> *Id.* (Haden, J., granting preliminary injunction) Chief Judge Haden’s observations were an accurate depiction of the impact MTR has on vegetation and animal life. It has been estimated that as of 2007 MTR had destroyed over 300 square miles of Appalachian forest. Diana Kaneva, *Let’s Face Fact, These Mountains Won’t Grow Back: Reducing the Environmental Impact of Mountaintop Removal Coal Mining in Appalachia*, 35 WM. & MARY ENVTL. L. & POL’Y REV. 931, 933 (2011). The deforestation that occurs during the MTR process affects the biodiversity of the region. *Id.* at 965. For example governmental studies reveal a decrease in species of forest birds and amphibians which require a mature forest habitat in MTR affected areas, while grassland birds and reptiles which do not typically thrive in wooded areas grow in numbers. U.S. EPA, MOUNTAINTOP MINING/VALLEY FILLS IN APPALACHIA: FINAL PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT (2005), available at [http://www.epa.gov/region03/mtntop/pdf/mtm-vf\\_fpeis\\_full-document.pdf](http://www.epa.gov/region03/mtntop/pdf/mtm-vf_fpeis_full-document.pdf) [hereafter FINAL PROGRAMMATIC EIS 2005].

and from burial under fill, (2) concentrations of major chemical ions are persistently elevated downstream, (3) degraded water quality reaches levels that are acutely lethal to standard laboratory test organisms, (4) selenium concentrations are elevated, reaching concentrations that have caused toxic effects in fish and birds and (5) macroinvertebrate and fish communities are consistently degraded.<sup>234</sup>

### C. Coal Waste Externalities

New mining technology and methods have significantly increased the scale of coal waste generated during mining. In excess of 700 federally regulated waste impoundments are located in the United States, most in Appalachia.<sup>235</sup> Five coal

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<sup>234</sup> U.S. EPA, THE EFFECTS OF MOUNTAINTOP MINES AND VALLEY FILLS ON AQUATIC ECOSYSTEMS OF THE CENTRAL APPALACHIAN COALFIELDS, Report No. /600/R-09/138F, (2011), available at <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=225743#Download>. See also FINAL PROGRAMMATIC EIS 2005, *supra* note 229; T. TY LINDBERG, ET AL., CUMULATIVE IMPACTS OF MOUNTAINTOP MINING ON AN APPALACHIAN WATERSHED, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCE, (Dec. 12, 2011), available at <http://www.pnas.org/content/108/52/20929.short> (stating that “[i]ndividual mines profoundly impact stream water quality, community structure, and ecosystem functions immediately downstream of valley fills.”). It is very expensive to internalize the cost of mineral pollutants such as selenium discharged from MTR mines in violation of Clean Water Act water quality standards. Ken Ward Jr., *Alpha Agrees to \$50 Million for Selenium Treatment*, THE CHARLESTON GAZETTE COAL TATTOO BLOG (Dec. 12, 2011), available at <http://blogs.wvgazette.com/coalattoo/2011/12/12/alpha-agrees-to-50-million-for-selenium-treatment/> (coal company agreed (1) to construct selenium treatment facilities with estimated construction cost in excess of \$50 million, and (2) consented to pay civil penalties of \$4.5 million). See also *Ohio Valley Env'tl. Council v. Independence Coal Co., et al.*, (Consent Order, Dec. 12, 2011), available at <http://wvgazette.com/static/coal%20tattoo/AlphaSeleniumConsentDecree.pdf> (company agreed to abate selenium discharges from mountaintop removal mines).

<sup>235</sup> NATIONAL ACADEMY OF SCIENCES, COAL WASTE IMPOUNDMENTS: RISKS, RESPONSES, ALTERNATIVES 23-24 (2002) [hereafter “WASTE IMPOUNDMENTS”]; see generally Stanley J. Michalek et al., *Accidental Releases of Slurry and Water From Coal Impoundments Through Abandoned Underground Coal Mines* MINE SAFETY & HEALTH

waste impoundments failed over a twenty-year period, ending in 2000.<sup>236</sup> More than 90 million gallons of polluting “black water” found its way into Appalachian streams from these events.<sup>237</sup> In Eastern Kentucky in 2000, liquid coal slurry escaped from a waste impoundment spewing 300 hundred million gallons of the black water into an adjacent stream.<sup>238</sup> The waste was carried downstream from Kentucky into West Virginia suffocating more than a hundred miles of stream life.<sup>239</sup>

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ADMIN. (1996), available at

<http://www.msha.gov/S&HINFO/TECHRPT/MINEWASTE/ASDSO2.pdf> (background information on impoundments). Thicker coal seams in the West contain fewer impurities; most coal from Western coalfields is shipped with little or no cleaning.

WASTE IMPOUNDMENTS, *supra* note 231, at 23-24. Of the more than one billion tons of coal mined annually in the United States, more than 600 million tons are washed (processed) to some extent. Every year seventy to ninety million tons of slurry waste are disposed of in surface impoundments or injected underground as a water-coal slurry. *Id.*

<sup>236</sup> See WASTE IMPOUNDMENTS, *supra* note 231, at 27-30. See also Linda Evans, et al., *State of Failure: How States Fail to Protect Our Health and Drinking Water from Toxic Coal Ash*, EARTHJUSTICE REPORT 4-5 (2011), available at

<http://earthjustice.org/sites/default/files/StateofFailure.pdf>.

<sup>237</sup> WASTE IMPOUNDMENTS, *supra* note 231, at 27-31. “Black water” refers to the liquid waste contained in or released untreated from surface coal waste impoundments. See also Michalek, *supra* note 231.

<sup>238</sup> MINE SAFETY AND HEALTH ADMIN., INTERNAL REVIEW OF MSHA’S ACTIONS AT THE BIG BRANCH REFUSE IMPOUNDMENT, MARTIN COUNTY COAL CORPORATION, INEZ, MARTIN COUNTY, KENTUCKY 1, 3 (2003), available at

<http://www.msha.gov/MEDIA/PRESS/2003/Report20030113.pdf> [hereinafter INTERNAL REVIEW]; MINE SAFETY AND HEALTH ADMINISTRATION, REPORT OF INVESTIGATION (2000), available at

<http://www.msha.gov/impoundments/martincounty/martincountytext.pdf>.

<sup>239</sup> See INTERNAL REVIEW, *supra* note 234, at 1, 3. See also KY. ENVTL. QUALITY COMM., MARTIN COUNTY COAL SLURRY SPILL: THREE YEARS LATER,

<http://www.eqc.ky.gov/NR/rdonlyres/78642226-A465-4EDC-9D2C-8F673DCECC84/0/coalslurrytour.pdf> (Eight feet of slurry inundated twenty miles of streams and floodplains. The sludge containing measurable amounts of heavy metals including arsenic, mercury, lead, cadmium, copper, copper, and chromium that

Beyond the wastes generated during the mining and coal preparation process, coal burning electricity generation plants generate inorganic coal combustion waste (“CCW”). The Congressional Research Service recently reported that more than a billion tons of coal are burned every year in the United States. The CCW waste thus produced “likely contains certain hazardous constituents that EPA has determined pose a risk to human health and the environment, including such heavy metals as arsenic, beryllium, boron, cadmium, chromium, lead, and mercury, and toxic organics such as dioxins.”<sup>240</sup> Annually, 120 million tons of toxic waste<sup>241</sup> and more than two billion tons of carbon dioxide are created by coal-fired power plants in the United States.<sup>242</sup> On average, more than 500 coal-fired power plants in the U.S. each produce almost a quarter of a million tons of toxic wastes annually.<sup>243</sup> In over forty years, a power plant can generate more than nine million tons of CCW.<sup>244</sup>

Each year a total of seventy-six million tons of CCW is disposed of at power plants in more than 600 unlined impoundments and landfills.<sup>245</sup>

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contaminated water supplies of riverside communities in Kentucky and West Virginia. Cleanup costs were estimated to have reached \$58 million).

<sup>240</sup> LUTHER, MANAGING COAL COMBUSTION WASTE, *supra* note 175 at 2.

<sup>241</sup> Barbara Freese et al., *Coal Power in a Warming World: A Sensible Transition to Clean Energy Options* UNION OF CONCERNED SCIENTISTS 7 (2008), [http://www.ucsusa.org/assets/documents/clean\\_energy/Coal-power-in-a-warming-world.pdf](http://www.ucsusa.org/assets/documents/clean_energy/Coal-power-in-a-warming-world.pdf).

<sup>242</sup> See ENVTL. INTEGRITY PROJECT, GETTING WARMER: US CO2 EMISSIONS FROM POWER PLANTS EMISSIONS RISES 5.6% IN 2010 2 (2011), [http://www.environmentalintegrity.org/documents/CO2Report\\_2011RJD21811final.pdf](http://www.environmentalintegrity.org/documents/CO2Report_2011RJD21811final.pdf).

<sup>243</sup> *Environmental Impacts of Coal Power: Wastes Generated*, UNION OF CONCERNED SCIENTISTS (2012), [http://www.ucsusa.org/clean\\_energy/coalvswind/c02d.html](http://www.ucsusa.org/clean_energy/coalvswind/c02d.html) (“Waste created by a typical coal plant includes more than 125,000 tons of ash and 193,000 tons of sludge from the smokestack scrubber each year.”).

<sup>244</sup> *Environmental Impacts of Coal Power: Wastes Generated*, UNION OF CONCERNED SCIENTISTS (2012), [http://www.ucsusa.org/clean\\_energy/coalvswind/c02d.html](http://www.ucsusa.org/clean_energy/coalvswind/c02d.html) (“Waste created by a typical coal plant includes more than 125,000 tons of ash and 193,000 tons of sludge from the smokestack scrubber each year.”).

<sup>245</sup> Benjamin K. Sovacool & Kelly E. Sovacool, *Preventing National Electricity-Water Crisis Areas in the United States*, 34 COLUM. J. ENVTL. L. 333, 354 (2009).

It has been estimated that 240 of these structures were built above abandoned underground coal mines.<sup>246</sup> Concerns exist about the stability and structural integrity of CCW surface impoundments. The concerns are not irrational.<sup>247</sup> In 2008, a coal-fired power plant impoundment containing liquid coal combustion waste collapsed. More than a billion gallons of CCW slurry surged into a Tennessee River tributary.<sup>248</sup> The cost of cleanup of the contamination was estimated to exceed \$1.2 billion.<sup>249</sup>

Despite disposal risks and their toxic characteristics, for three decades coal and electric power industry lobbyists have successfully blocked federal regulation of coal processing and coal combustion wastes after gaining statutory exemptions for each.<sup>250</sup> Following the Tennessee

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<sup>246</sup> *Id.* at 355.

<sup>247</sup> *Id.* at 354-355.

<sup>248</sup> See Anne Paine & Colby Sledge, *Flood of Sludge Breaks TVA Dike*, THE TENNESSEAN, Dec. 24, 2008, <http://www.commondreams.org/headline/2008/12/24-1> (stating “[m]illions of yards of ashy sludge broke through a dike at TVA’s Kingston coal-fired plant . . . covering hundreds of acres . . . [a]bout 2.6 million cubic yards of slurry—enough to fill 798 Olympic-size swimming pools.”); see also Mark Harrison Foster, Jr., *Ash Holes: The Failure to Classify Coal Combustion Residuals As a Hazardous Waste Under RCRA and The Burden Borne by a Minority Community in Alabama*, 12 VT. J. ENVTL. L. 735 (2011) (EPA approved transportation and disposal of TVA CCW from the Tennessee impoundment collapse to predominately African American community in Alabama). The spill material included environmentally toxic levels of mercury, arsenic, and lead. See *id.* at 754.

<sup>249</sup> Associated Press, *Utility Raises Cleanup Cost in Tennessee*, N.Y. TIMES, Aug. 1, 2009, at A14, available at <http://www.nytimes.com/2009/08/02/us/02tennessee.html>.

<sup>250</sup> See LUTHER, MANAGING COAL COMBUSTION WASTE, *supra* note 175 at 13. In 1976, Congress enacted the Resource Conservation and Recovery Act, 42 U.S.C. § 6902 (2009) (“RCRA”), which purported to strictly regulate generation, storage, and disposal of hazardous wastes. *Id.* at 8. However, in 1980, mining and related industries pressured Congress to pass the “Bevill Amendment” that exempted solid wastes from the “extraction, beneficiation and processing” of ores and minerals from RCRA regulation. *Id.* at 12. The amendment directed EPA to conduct studies to determine the possible scope of regulation of the wastes. *Id.* While EPA has reported several times on the possibility of regulating coal processing and coal combustion wastes, they are still exempt from RCRA Subtitle C regulation. *Id.* at 13. Regulatory responsibility for CCW

CCW impoundment collapse, public pressure for regulation of these wastes grew. In 2010, EPA proposed a regulation.<sup>251</sup> Once again coal and power industry lobbyists sprang into action. Almost three years later EPA had not acted upon the proposed rule.<sup>252</sup>

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will continue to be a state responsibility barring EPA action to include them within RCRA's purview. See Steven G. Barringer, *The RCRA Beville Amendment: A Lasting Relief For Mining Wastes?*, 17 NAT'L RESOURCES & ENV'T 155 (Winter 2003); JAMES T. O'REILLY & CAROLINE BROUN, *RCRA AND SUPERFUND: A PRACTICE GUIDE*, § 2:49 (3rd ed. 2011); Cf. *Env'tl. Defense Fund v. EPA*, 852 F.2d 1316, 1318-24 (D.C. Cir. 1988) (detailing statutory and regulatory history of mining exemption; ordering EPA to determine if ore and mineral processing wastes fall within Beville Amendment's "mining waste exclusion").

<sup>251</sup> Hazardous and Solid Waste Management System, 75 Fed. Reg. 35,128 (June 21, 2010) (to be codified at 40 C.F.R. pts. 257, 261, 264, 265, 268, 271, 302); see also Matthew Pearl, *The Aftermath of the December 2008 Incident in East Tennessee Illuminates the Inadequate Regulation of Coal Ash Impoundments*, 16 U. BALT. J. ENVTL. L. 195, 199 (2009) (discussing legislation passed in response to the Tennessee Valley Authority CCW event).

<sup>252</sup> See Gabriel Nelson, *White House Gets an Earful on Power Plant Rule*, N.Y. TIMES, Mar. 14, 2011, <http://www.nytimes.com/gwire/2011/03/14/14greenwire-white-house-gets-an-earful-on-power-plant-rule-86449.html?scp=3&sq=coal%20ash&st=cse> (the proposed "rule has faced a backlash from companies that burn coal, or recycle the ash . . . . EPA has not moved forward with a final rule since receiving tens of thousands of comments."). For a discussion of recent developments relating to EPA regulation of coal wastes under RCRA, see: Karen Bennett & Brian E. Barner, *Environmental Update: Keeping the Issues Straight in the Mining Industry*, ROCKY MOUNTAIN MINERAL LAW FOUNDATION (July 21, 2012) ("EPA is currently facing multiple lawsuits filed by ENGOs, coal ash recyclers, and a utility association for failure to meet certain statutory deadlines for completing the review and revision of regulations under the Resource Conservation and Recovery Act ("RCRA") regarding the disposal of coal ash."), available at <http://www.jdsupra.com/legalnews/rocky-mountain-mineral-law-foundation-2-52257/>.

D. *Miner Health and Safety*

1. A Century of Loss of Life and Limb in American Coal Mines

Since the end of the nineteenth century more than 600 mine disasters have occurred in American coal mines.<sup>253</sup> In excess of 100,000 coal miners have died from mine roof falls, cave-ins, fires, explosions, and other causes in the nation's mines.<sup>254</sup> Several million miners suffered injuries, many were disabling.<sup>255</sup> A Mine Safety and Health Administration ("MSHA") historic report on injury trends in mining indicates that "[f]rom 1880 to 1910, mine explosions and other accidents

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<sup>253</sup> Regulators and historians arbitrarily define a mine "disaster" as an incident involving at least five deaths. *See*, Center for Disease Control, *NIOSH Mining: Coal Mining Disasters*, <http://www.cdc.gov/niosh/mining/statistics/discoal.htm> (last visited June 3, 2012) (listing coal mining disasters with 5 or more fatalities dating back to 1829). Among the disasters that gained the most public notoriety were: Monongah (500), Stag Canyon No. 9 (263), Cherry Mine (259), Mather (195), Centralia (111), Pond Creek No. 1 (91), Farmington (78), Willow Grove (72), Scotia (26), Finley Coal Nos. 15 & 16 (38), Wilberg (27), Jim Walter Resources No. 5 (13), No. 2, Dutch Creek No. 1 (15), Grundy Mining No. 21 (13), Robena No. 3 (37) and Blacksville No. 1 (9) (the numbers in the parentheticals represent the number of deaths reported). *Id.*

<sup>254</sup> *Historical Data on Mine Disasters in the United States*, MINE SAFETY AND HEALTH ADMIN. available at <http://www.msha.gov/MSHAINFO/FactSheets/MSHAFACT8.HTM> (last visited Mar. 3 2013).

<sup>255</sup> Six-hundred and five mining disasters have occurred in American coal mines since 1876 (defined as accidents in which five or more workers were killed). *Id.* Information found on the MSHA website documents the history of the carnage in America's coal and other mines from 1936 through 2007. *See* Mine Safety and Health Administration, *Injury Trends in Mining*, <http://www.msha.gov/MSHAINFO/FactSheets/MSHAFACT2.HTM> [hereafter *Mining Injury Trends*]. From 2008 through 2011 coal mining disabling and non-disabling injuries totaled 11,835 and 72 miners were killed. MINE SAFETY AND HEALTH ADMIN., *INJURY EXPERIENCE IN COAL MINING*, 2009 at 13 (IR 1348, 2011), available at <http://www.msha.gov/Stats/Part50/Yearly%20IR's/2009/Coal-2009-Annual-IR.pdf>; U.S. DEP'T OF LABOR, MINE SAFETY AND HEALTH ADMIN., *MINE INJURY AND WORKTIME, QUARTERLY* (2010) available at [http://www.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master\\_20105.pdf](http://www.msha.gov/Stats/Part50/WQ/MasterFiles/MIWQ%20Master_20105.pdf).



claimed thousands of victims” with the highest number of deaths occurring in 1907 when accidents claimed the lives of 3,242 miners.”<sup>256</sup>

MSHA records indicate that over the last nine decades of the 20th century mining deaths and serious injuries have slowly declined.<sup>257</sup> Annual coal mine fatalities fell from more than 1,500 per year in the late 1930s to an average of about 450 in the 1950s.<sup>258</sup> Average annual fatalities dropped to 140 in the 1970s.<sup>259</sup> By the 2001–2005 period, annual coal miner deaths fell to thirty.<sup>260</sup>

While coal mine safety has significantly improved over the last century, MSHA documented more than 170,000 miner injuries in the period of 1995 through 2008. The safest year in American coal mining history occurred in 2005, when an all-time low of twenty-three coal mining deaths were recorded.<sup>261</sup> Even as the number of fatalities in U.S.

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<sup>256</sup> *Mining Injury Trends*, *supra* note 251.

<sup>257</sup> *Id.* For comprehensive accounts of two of the most appalling mine disasters in U.S. history, See DAVITT J. MCATEER, *MONONGAH: THE TRAGIC STORY OF THE 1907 MONONGAH MINE DISASTER, THE WORST INDUSTRIAL ACCIDENT IN US HISTORY* (2007) (The December 6, 1907, explosion at a coal mine in Monongah, West Virginia killed more than 500 miners.) and BONNIE E. STEWART, *NO. 9: THE 1968 FARMINGTON MINE DISASTER* (2011) (The Farmington disaster triggered the enactment of the 1969 Federal Coal Mine Health and Safety Act—the first mine safety law with sufficient teeth to force coal operators to significantly improve conditions in the nation’s coal mines.).

<sup>258</sup> *Mining Injury Trends*, *supra* note 251. MSHA’s averages are based upon measuring the numbers of miner injuries against hours worked. *Id.*

<sup>259</sup> *Id.*

<sup>260</sup> *Id.* According to MSHA website data, the coal miner death rate decreased from about .20 fatalities per 200,000 hours worked by miners (or one death per million production hours) in 1970 to about .07 fatalities in 1977 and dropped still lower to an average of .03 fatalities for the 2001–2005 period. *Id.*

<sup>261</sup> *Id.* The lowest previous number of fatalities occurred in 2002 when 28 miners died. Thirty three miners died in 2007. *Id.* Even as injuries and fatalities among coal miners were declining, state legislatures were deaf to requests for adequate funds to enforce state mine safety laws. See, e.g., Ry Rivard, *Ex-regulator says agency unequipped*, CHARLESTON DAILY MAIL (Dec. 12, 2011) available at <http://dailymail.com/News/201112110119>.

When Upper Big Branch Mine Disaster investigators asked the Director of the West Virginia Office of Miners' Health, Safety and Training, if before the UBB explosion, he

mines dropped, MSHA loosened federal mine safety law enforcement in favor of giving “compliance assistance” to coal companies.<sup>262</sup> From 2008 through 2010, mining fatalities rose, with a total of seventy-two miners dying in that time span.<sup>263</sup> The worst mine disaster in forty years occurred in 2010 when twenty-nine miners were killed in an explosion at Massey Energy’s Upper Big Branch (“UBB”) mine in southern West Virginia<sup>264</sup>

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had adequate resources needed “to do the job” --- including manpower, equipment, material, Director Ron Wooten replied:

No. . . . And I think the record will bear this out, that in every appropriation cycle, every single legislative session that I was involved with, I asked for . . . more money for our inspectorate. I asked for more inspectors. I was told . . . inspections were important, but we'd never really held our feet to the fire. I asked the question -- I said, these inspections are legislative mandates; how can we not take them seriously? . . . It was as though -- in my opinion, if you were going to get anything, you had to blow something up first. That's just the way it was before the legislature was going to act or react to do something about resources. And I'm just being brutally honest, but that's the way I feel.

*Id.*

<sup>262</sup> CHRISTOPHER W. SHAW, UNDERMINING SAFETY: A REPORT ON COAL MINE SAFETY 25 (2008), available at <http://www.csrl.org/reports/UnderminingSafety.pdf>. See generally DEMOCRATIC STAFF, H. COMM. ON EDUCATION AND THE WORKFORCE, REVIEW OF FEDERAL MINE SAFETY AND HEALTH ADMINISTRATION’S PERFORMANCE FROM 2001 TO 2005 REVEALS CONSISTENT ABDICATION OF REGULATORY AND ENFORCEMENT RESPONSIBILITIES, (109th Congress, 2nd Sess., Jan. 31, 2006), available at <http://edlabor.house.gov/publications/minesafetyreport.pdf>.

<sup>263</sup> Mine Safety & Health Admin., *MSHA News Release: Mining Deaths Rise in 2010* (Jan. 13, 2011) available at <http://www.msha.gov/MEDIA/PRESS/2011/NR110113a.asp>.

<sup>264</sup> *Id.*; Emily Channell, *Coal Miner’s Slaughter*, 14 N. AM. DIALOGUE 12, 13 (Apr. 3, 2011), available at [http://sananet.org/NAD/NAD\\_14\\_1.pdf](http://sananet.org/NAD/NAD_14_1.pdf). During the previous two years MSHA had given Massey Energy Corporation, the mine’s owner company, 639 safety violation citations, which were ignored and not enforced. *Id.* at 18. Although MSHA claimed they “used the tools we have available,” there was “a clear record of blatant disregard for the welfare and safety of Massey miners.” *Id.* (quoting Senator of West Virginia Robert Byrd). Today, a federal criminal investigation continues. Mine Safety & Health Admin., *Statement by Solicitor of Labor M. Patricia Smith Regarding*

Obviously, there has been great progress over the last century during which time the number of coal miners maimed and killed in the nation's coal mines has dramatically declined. This progress, though commendable, belies the fact that preventable deaths and injuries continue at an unacceptable rate in the twenty-first century. For two generations there have been immediate legislative responses to U.S. mine disasters resulting in the strengthening of coal mine safety regulations.<sup>265</sup> Indeed,

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*Ongoing Investigation of Upper Big Branch Mine Explosion* (Jan. 14, 2011) available at <http://www.msha.gov/MEDIA/PRESS/2011/NS110118.asp>. See also Ken Ward Jr., *More UBB charges coming 'shortly'*, THE CHARLESTON GAZETTE, Oct. 10, 2012, available at <http://wvgazette.com/News/201210100304> ("Federal, state and independent investigations have blamed the worst U.S. coal-mining disaster in nearly 40 years on widespread safety violations, including a systematic failure by Massey management to comply with rules aimed at controlling the buildup underground of explosive coal dust."). See generally, GOVERNOR'S INDEPENDENT INVESTIGATION PANEL, REPORT TO THE GOVERNOR: UPPER BIG BRANCH 108 (May 2011), available at <http://www.nttc.edu/ubb/>. While most UBB miners willingly gave sworn testimony to government investigators, eighteen Massey Energy managers including Donald Blankenship the company Chairman and CEO and Chris Adkins the Executive Vice president asserted their fifth amendment privilege and refused to appear and answer questions. *Id.* at 5; see also *Industrial Homicide: The Report on the Upper Big Branch Disaster*, UNITED MINE WORKERS OF AMERICA (Oct. 25, 2011), available at <http://www.umwa.org/files/documents/134334-Upper-Big-Branch.pdf>; *Report Of Investigation, Fatal Underground Mine Explosion April 5, 2010, Upper Big Branch Mine-South, Performance Coal Company Montcoal, Raleigh County, West Virginia*, Id No. 46-08436, U.S. DEP'T. LABOR (Dec. 6, 2011), available at <http://www.msha.gov/Fatals/2010/UBB/FTL10c0331.pdf>; *Report Of Investigation Into The Mine Explosion At The Upper Big Branch Mine April 5, 2010*, WEST VIRGINIA OFFICE OF MINERS' HEALTH, SAFETY & TRAINING (Feb. 23, 2012), available at <http://www.wvminesafety.org/Upper%20Big%20Branch%20Mine%20Accident%20Report.htm>.

<sup>265</sup> Unfortunately history reveals that mine disasters have been the principal, if not the only, only impetus for stimulating politicians to enact mine safety legislation. See McGinley, *supra* note ---- at 298 ("History documents a mine disaster leading to new laws followed by another disaster cause-and-effect cycle. In this repeating cycle, a coal mine disaster is followed by strengthening of mine safety laws and enforcement, a lax

this cause and effect relationship between disasters and enactment of more stringent safety regulation has been described as legislation “written in the blood of coal miners.”<sup>266</sup> Although bills were introduced in Congress to address the regulatory failings identified as a result of the UBB explosion,<sup>267</sup> Congress has failed to bring the proposed legislation to a vote nearly three years after twenty-nine coal miners lost their lives at the UBB Mine.<sup>268</sup> MSHA, however, did respond to the UBB tragedy by

enforcement phase that includes industry resistance to regulation followed by another mine disaster, and so on.”)

<sup>266</sup> See, e.g., The Upper Big Branch Mine Disaster: Field Hearing Before the H. Comm. on Education and Labor, 111<sup>th</sup> Cong. 8 (2010), available at <http://www.nttc.edu/programs&projects/minesafety/disasterinvestigations/upperbigbranch/UBB%20Hearing%20E%20and%20Labor.pdf> (“It is a sad and infuriating reality that every piece of legislation ever passed that advanced mine safety has been written in the blood of coal miners.”) (statement of U.S. Representative Nick J. Rahall of West Virginia).

<sup>267</sup> See, e.g., Robert C. Byrd Mine and Workplace Safety and Health Act of 2012, S. 3443, 112<sup>th</sup> Cong. (2012), available at <http://www.govtrack.us/congress/bills/112/s3443/text>.

<sup>268</sup> Disturbingly, after the UBB mine disaster – the worst in 40 years – the coal industry opposed legislative proposals to improve mine safety. Congress, in turn, led by the House majority refused to enact legislation intended to forestall the types of outrageous coal operator conduct that was found to have occurred at the Upper Big Branch mine. See George Zornick, *Two Years After Upper Big Branch, Why Does Regulation Remain Weak?*, THE NATION (Apr. 10, 2012), available at <http://www.thenation.com/blog/167237/two-years-after-upper-big-branch-why-does-regulation-remain-weak#>. National Mining Association Spokesman Luke Poppovich found reports of violations of safety regulations at the Upper Big Branch Mine “sobering” but his association opposed legislative action because “[w]e do not see to date any evidence that MSHA lacks the authority it needs to prevent accidents like this one.” Jessica Y. Lilly, *Industry Sees No Reason for New Mine Safety Laws, Despite MSHA Report*, W.VA. PUB. RADIO (Dec. 15, 2011), available at <http://www.wvpubcast.org/newsarticle.aspx?id=23189>. While state and federal legislators have failed to act in the wake of the worst mine disaster in forty years, MSHA has stepped up federal enforcement “with industry and federal officials attributing the improvement to increased enforcement of regulations and better training by mining companies themselves.” Kris Maher, *Data Show Safety Levels Improving at Coal Mines*,

stepping up enforcement activities at mines with serious non-compliance records, albeit over industry opposition.<sup>269</sup>

As with other coal externalities, the public is largely ignorant of the significant costs of coal mine injuries and fatalities—excepting the short windows of national consciousness of risks coal miners face, brought home by intense media reporting of mine disasters.<sup>270</sup> Despite the relatively short-lived media attention given to mine disasters like the 2010 disaster at Upper Big Branch, it is important to recognize that far more injuries and loss of life occur in accidents involving only one or two individuals.<sup>271</sup> Neither the declining rates of injuries and death in American coal mines, nor the circumstances thereof, alter the fact that the resulting harm to miners' families and their communities is inestimable. As mine safety advocates often emphasize, “[n]o miner should have to die on the job just to earn a paycheck . . . all miners [should be able to] go

WALL ST. J., Sept. 16, 2011, A5 *available at* <http://online.wsj.com/article/SB10001424053111904491704576572831496880862.html>. Coal mine safety violations fell five percent per inspection hour through the first three quarters of 2011 compared with the 2010 violation rate. *Id.* Serious violations in 2011 fell by 12% - strongly suggesting that coal miners lives can be saved if mine safety laws are properly enforced. *Id.*; *see also* Joseph A. Main, Assistant Secretary of Labor for Mine Safety and Health, Remarks at the West Virginia Coal Association 39th Annual Mining Symposium Charleston, W. Va. (Feb. 2, 2012), *available at*

<http://www.msha.gov/Media/SPEECHES/2012/WVCoalSymposiumJMain02022012.pdf>.

<sup>269</sup> Maher, *supra* note 264 and quoted text; *see also* Main, *supra* note 264.  
<sup>270</sup> *See generally* DANIEL J. CURRA, DEAD LAWS FOR DEAD MEN: THE POLITICS OF FEDERAL COAL MINE HEALTH AND SAFETY LEGISLATION (1993). *See also* Jake Blumgart, *Dead Laws for Dead Men*, WORDPRESS (Nov. 21, 2012), <http://jakeblumgart.com/2012/11/21/dead-laws-for-dead-men/> (“coal mining is so far from the public eye that reform generally only comes in the wake of disaster, as the miners are briefly, tragically thrown into the headlines.”).

<sup>271</sup> *See Beyond Sago: One by One: Disasters Make Headlines, But Most Miners Killed on the Job Die Alone*, THE CHARLESTON GAZETTE, Nov. 5, 2006, *available at* <http://wvgazette.com/News/Beyond+Sago/200611050006> (discussing fact that more miners die individually than in the mine disasters that receive most media attention). *See also* MINE SAFETY & HEALTH ADMIN., *All Mining Fatalities by State* (Feb. 20, 2013) *available at* <http://www.msha.gov/stats/charts/allstates.pdf>.

home safe and healthy at the end of each shift.”<sup>272</sup> Miners who continue to be maimed and die in American coal mines constitute a negative externality that should not be tolerated in the twenty-first century.<sup>273</sup>

## 2. Black Lung Disease

As with other major coal externalities, the public is almost completely unaware of an insidious health hazard known as “black lung.” Black lung is the commonly used term for a lung disease whose medical name is “coal workers’ pneumoconiosis.”<sup>274</sup> Miners develop the disease

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<sup>272</sup> See, e.g., Letter from Joseph E. Main, Asst. Sec. for Mine Safety & Health, to The Mining Community (Oct. 15, 2012), available at <http://www.msha.gov/Fatals/Summaries/2012/3rdQuarter/2012Q3StakeholderLetter.pdf>.

<sup>273</sup> The concept of reducing injuries in U.S. coal mines to zero is not one embraced only by union safety officials or scholars. In a speech to the Utah Mining Association in August 2007, Consol Energy CEO Brett Harvey stated:

We need to change the paradigm and we need to change it now . . . . What industry must change is our incremental approach to safety improvement because it creates an unintended level of tolerance to accidents . . . . We will start with the premise that our normal state of operation is no accidents. An accident is an abnormality that is unacceptable. Accidents are an exception to our core values. Our approach means safety trumps everything else we do. It trumps production, it trumps profits, it trumps all other rules, policies or procedures . . . I firmly believe it is possible for CONSOL to achieve “zero-accidents” performance at every CONSOL facility and we intend to achieve those results within the next five years.

J. Brett Harvey, President and Chief Executive Officer CONSOL Energy Inc., Keynote Address, Utah Mining Association 92nd Annual Meeting Park City, Utah (Aug. 23, 2007), available at [http://www.nma.org/pdf/misc/083007\\_harvey.pdf](http://www.nma.org/pdf/misc/083007_harvey.pdf).

<sup>274</sup> Pathologists who observed that lungs of diseased miners appeared black instead of the natural pink color of healthy lung tissue coined the non-scientific descriptive term “black lung.” See *Black Lung Disease*, WEBMD, available at <http://www.webmd.com/a-to-z-guides/black-lung-disease-topic-overview> (May 4, 2010). Over time inhalation of coal-dust results in the accumulation of the foreign material in the lungs. See *id.* Miner’s risk of developing emphysema and chronic bronchitis increases as the dust accumulates in the organs. See *id.* Black lung presents in two forms: simple, which is known as coal

as a result of their inhalation of coal dust during work at coal mines. Symptoms of the disease include “progressive dyspnea, chest discomfort, and cough, sometimes dramatically accompanied by the expectoration of copious quantities of black, inky sputum.”<sup>275</sup> The malady can be debilitating and is often fatal. A recent comprehensive investigative report on the resurgence of black lung described the horror of the disease:

Black lung leaves miners' lungs scarred, shriveled and black. They struggle to do routine tasks and are eventually forced to choose between eating and breathing. “No human being should have to go through the misery that dying of [black lung] entails,” said Dr. Edward Petsonk, who treats patients with black lung and works with NIOSH. “It is like a screw being slowly tightened across your throat. It is really almost a diabolical torture.”<sup>276</sup>

Doctors treating miners in Great Britain first identified black lung disease in the mid-19th Century.<sup>277</sup> Disturbingly, for a century, coal industry and government officials in the United States generally refused to recognize that inhalation of coal dust led to the lung disorder; indeed, the very existence of the disease was denied.<sup>278</sup> Some coal industry officials, politicians, and even medical doctors claimed inhalation of coal dust

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workers' pneumoconiosis (“CWP”), and complicated, referred to as progressive massive fibrosis (PMF). *Id.* Miner’s risk of incurring chronic obstructive pulmonary disease or “COPD” also increases with inhalation of coal dust. *Id.*

<sup>275</sup> Greg Wagner, *Black Lung: Anatomy of a Public Health Disaster*, 340 NEW ENG. J. MED. 1770 (1999) (book review).

<sup>276</sup> Chris Hamby, *The new face of black lung*, THE CHARLESTON GAZETTE, July 7, 2012, available at <http://wvgazette.com/News/blacklung/201207070066?page=2&build=cache>

<sup>277</sup> See ALAN DERICKSON, BLACK LUNG: ANATOMY OF A PUBLIC HEALTH DISASTER 6 (1998) [hereinafter BLACK LUNG]. However, it was not until 1937 that the disease was recognized in the United Kingdom as a compensable occupational medical condition. See BARBARA ELLEN SMITH, DIGGING OUR OWN GRAVES: COAL MINERS AND THE STRUGGLE OVER BLACK LUNG DISEASE 4 (1987).

<sup>278</sup> See Brian C. Murchison, *Due Process, Black Lung, And The Shaping Of Administrative Justice*, 54 ADMIN. L. REV. 1025, 1038-48 (2002) [hereinafter *Shaping Administrative Justice*] (illustrating the difficulties faced by former miners in receiving compensation for black lung).

posed no health threat at all.<sup>279</sup> One noted scholar has observed, “[i]t is clear in retrospect that denial of the dangers of mine dust shortened the lives of hundreds of thousands of anthracite and bituminous coal miners.”<sup>280</sup>

Black lung disease has killed and injured far more coal miners than mine disasters and fatal and disabling accidents.<sup>281</sup> One occupational health law expert observed that “. . . black lung condemn[s] thousands of miners to live out their days crippled by the devastating effects of progressive, chronic lung disease.”<sup>282</sup> Black lung’s toll is stunning.

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<sup>279</sup>*Id.* at 1040. Murchison explains:

By 1930, the “denial of coal workers’ respiratory difficulties had triumphed in the United States,” due to a host of factors that historians are still trying to understand. One factor was the stance of company physicians that inhaling coal mine dusts was harmless because the body was naturally equipped to expectorate “deposits of carbon” and thus purify itself. Another claim was that inhaling carbonaceous dusts was in fact *beneficial* to miners’ health because it caused fibrotic formations which supposedly prevented tubercular bacilli “from getting a foothold” in the lungs. A third industry position was that the only real danger posed by either anthracite or bituminous mining was inhalation of “silicious dusts associated with sandstone, slate, and other minerals that occurred with coal deposits.” According to industry doctors, miners with dust-induced lung disease must have inhaled dust containing rock dust, since inhaling particles of coal “posed no hazard at all.” This effort to equate all mine dust disease with silicosis became the conventional wisdom; the only conceded effect of inhaling coal particles without significant silica was anthracosis, which coal interests insisted was not a disease but a discoloration of the lung.

*Id.* at 1040–41 (citations omitted).

<sup>280</sup> BLACK LUNG, *supra* note 273, at xii.

<sup>281</sup> David C. Vladeck, *The Failed Promise of Workplace Health Regulation*, 111 W. VA. L. REV. 15, 19 (2008) (citing Gardiner Harris and Ralph Dunlop, *Dust, Deception & Death: Why Black Lung Has Not Been Wiped Out; Despite Laws, Hundreds are Killed by Black Lung*, LOUISVILLE COURIER-JOURNAL, Apr. 19, 1998, at A1 available at [http://www.courier-journal.com/cjextra/dust/frame\\_cheat.html](http://www.courier-journal.com/cjextra/dust/frame_cheat.html) and *Black Lung*, LOUISVILLE COURIER-JOURNAL (1998) available at <http://www.courier-journal.com/cjextra/blacklung/index.html> (a series of articles and videos examining the devastating impact of Black Lung on coal miners and their families)).

<sup>282</sup> Vladeck, *supra* note 277, at 19.



Government records reveal that 104,722 miners died in coal mine accidents from 1900 to 2010.<sup>283</sup> Black lung-induced death claimed four times as many miners during that period.<sup>284</sup> Prior to the 1969 enactment of the first federal law aimed at reducing black lung, at least 365,000 miners died of the disease.<sup>285</sup>

Ultimately, it was not the overwhelming medical/scientific evidence of the catastrophic affect of coal dust inhalation that finally triggered government regulation. Rather, in 1969, after a decade-long grassroots crusade by coal miners and black lung widows, a reluctant Congress and president were forced to address the disease and its cause.<sup>286</sup>

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<sup>283</sup> *Id.* at 16 (citing MINE SAFETY & HEALTH ADMIN., COAL FATALITIES FOR 1900 THROUGH 2010, <http://www.msha.gov/stats/centurystats/coalstats.asp> (last visited June 3, 2012)).

<sup>284</sup> Vladeck, *supra* note 277, at 16 & n.4.

<sup>285</sup> *Id.*

<sup>286</sup> See, Ronald D Eller. UNEVEN GROUND: APPALACHIA SINCE 1945 (2008) at (hereafter “UNEVEN GROUND”), See also, ROBERT GOTTLIEB, FORCING THE SPRING: THE TRANSFORMATION OF THE AMERICAN ENVIRONMENTAL MOVEMENT 358-359 (1993). A grassroots movement of miners and widows of miners who had died from black lung disease formed the first protest group in the Spring of 1967. See *id.* The group called itself the “organization of the living dead men trying to help each other.” *Id.* at 358. In November, 1968, the Farmington Mine exploded in West Virginia, killing seventy-eight miners. *Id.* The Farmington disaster “intensified national concern about occupational hazards and provided the black lung protesters with a direct opportunity to influence policy debates within the West Virginia Legislature and the U.S. Congress.” *Id.* at 358-359. A few weeks later, thousand of miners and widows of miners who had died from black lung marched on the West Virginia Capitol to demand legislation to assist miners afflicted with black lung. *Id.* Later that year, Congress enacted the first federal legislation directed at reducing miner exposure to respirable coal dust and mandating compensation for disabled black lung victims, miners’ widows, and their families. *Id.* at 359. See also *Shaping Administrative Justice*, *supra* note 274, at 1026-1027. Professor Murchison describes the essence of the history of the grassroots uprising:

. . . the story of black lung disease . . . bridges the realms of public health, politics, and law . . . [f]rom the perspective of politics, it is the story of workers who moved from passive frustration about occupational disease to militancy about legislative solutions. With only vacillating union support, miners in the late 1960s

The Federal Coal Mine Safety and Health Act of 1969 (“1969 Act”) sought to limit miners’ workplace exposure to coal dust.<sup>287</sup> Under the law, MSHA’s mandate was to,

provide, to the greatest extent possible, that working conditions in each underground coal mine are sufficiently free of respirable dust to permit each miner the opportunity to work underground during the period of his entire life without incurring any disability from pneumoconiosis or any other occupation-related disease during or at the end of such period.<sup>288</sup>

Thus, dust mitigation measures required by the 1969 federal legislation significantly reduced, but did not terminate, the scourge of black lung among the nation’s coal miners.<sup>289</sup> By 2004, another 123,000 miners were estimated to have died as a result of inhalation of coal dust.<sup>290</sup>

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used the pressure of strikes to force state and federal officials to recognize what miners had long known: that dusts in both anthracite and bituminous mines can grievously impair breathing function and even cause premature death.

*Id.* See also P.S. BARTH, THE TRAGEDY OF BLACKLUNG: FEDERAL COMPENSATION FOR OCCUPATIONAL DISEASE (1987); J.R. NELSON, BLACKLUNG: A STUDY OF DISABILITY COMPENSATION POLICY FORMATION (1985).

<sup>287</sup> Federal Mine Safety and Health Act of 1977, 30 U.S.C. § 842(b)(2) (2012) (“[E]ach [mine] operator shall continuously maintain the average concentration of respirable dust in the mine atmosphere during each shift to which each miner in the active workings of such mine is exposed at or below 2.0 milligrams of respirable dust per cubic meter of air.”); Federal Law also requires miners and their widows/families to receive compensatory benefits if it can be proven that a miner contracted black lung while working in coal mines. Black Lung Benefits Act (BLBA), 83 STAT. 792 (2006) (codified as amended at 30 U.S.C. § 901) *invalidated by* W. Va. CWP Fund v. Stacy, 671 F.3d 378 (4th Cir. 2011), *cert. denied*, 133 S.Ct. 127 (2012).

<sup>288</sup> 30 U.S.C. § 841(b) (2012).

<sup>289</sup> M.D. Attfield et al., *Changing Patterns of Pneumoconiosis Mortality—United States, 1968–2000*, CENTER FOR DISEASE CONTROL (July 23, 2004), <http://www.cdc.gov/MMWR/preview/mmwrhtml/mm5328a1.htm>.

<sup>290</sup> See CHRISTOPHER W. SHAW, UNDERMINING SAFETY: A REPORT ON COAL MINE SAFETY 7–8 (2008), *available at* <http://www.csrl.org/reports/UnderminingSafety.pdf>; *see*

While the incidence of black lung disease declined substantially for a time, the prevalence of the disease has been increasing for more than a decade and a half.<sup>291</sup> Although the law was intended to minimize miner exposure to coal dust in the workplace and consequently black lung disease, modern coal mining technologies have continued to expose miners to black lung disease.<sup>292</sup> Young and experienced miners are being diagnosed with the disease in growing numbers.<sup>293</sup>

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also Brenda Wilson, *The Quiet Deaths Outside the Coal Mines*, NPR, (Apr. 16, 2010) <http://www.npr.org/templates/story/story.php?storyId=126021059>.

<sup>291</sup> Joby Warrick, *Into the Darkness*, WASH. POST MAGAZINE, Jan. 21, 2007, <http://www.washingtonpost.com/wpdyn/content/article/2007/01/16/AR2007011601066.html?nav=emailpage>. See Vladeck, *supra* note 277, at 17 & n.8; Gardiner Harris & Ralph Dunlop, *Dust, Deception and Death: Why Black Lung Has Not Been Wiped Out*, LOUISVILLE COURIER-JOURNAL, Apr. 19, 1998, at A1, available at <http://courier-journal.com/cjextra/dust/>. (“Every year, black lung disease kills almost 1,500 people who have worked in the nation’s coal mines. It’s as if the Titanic sank every year, and no ships came to the rescue. While that long-ago disaster continues to fascinate the nation, the miners slip into cold, early graves almost unnoticed.”); See MSHA News Release, *Nation’s Coal Miners Take Advantage of Labor Department’s Free Chest X-Rays* (June 9, 2009), <http://www.msha.gov/media/press/2000/nr000609.htm> (The National Black Lung Association similarly estimates that black lung claims the lives of 1,500 coal miners each year).

<sup>292</sup> See Howard Berkes, *Republican Lawmakers Seek To Block Funding On Black Lung Regulation* NAT’L PUB. RADIO (July 17, 2012, 11:37 AM), available at <http://www.npr.org/blogs/the-two-way/2012/07/17/156908140/republican-lawmakers-see-to-block-funding-on-black-lung-regulation> [hereinafter *Block Funding*] (“[D]ata from the National Institute for Occupational Safety and Health (NIOSH) also shows that diagnoses of the worst stages of the disease have quadrupled since the 1980’s in eastern Kentucky, southwestern Virginia and southern West Virginia.”).

<sup>293</sup> One indication that coal companies were ignoring the danger of exposing their workers to dangerous levels of coal dust surfaced with MSHA’s 2006 report that, over a five year period, U.S. coal mines had been cited for more than 6,000 violations of airborne coal dust rules each year. Ken Ward Jr., *Beyond Sago: Coal Mine Safety in America: Coal Dust Most Common Violation; Mines Averaging 6,000 Citations for it Each Year*, THE CHARLESTON GAZETTE, Dec. 17, 2006, at 1B. The continued danger to miners posed by coal dust exposure was revealed by autopsy reports of miners killed at Massey Energy’s Upper Big Branch Mine explosion. More than seventy percent of the deceased miners were found to have complex black lung disease. See Chris Hamby, *Autopsies of Massey Miners Reveal Black Lung*, HUFF POST GREEN (May 19, 2011),

In 1995, The National Institute for Occupational Safety and Health (“NIOSH”) first confirmed this trend and emphasized respirable dust standards had be strengthened.<sup>294</sup> Although government regulators and the coal industry view black lung as a condition acquired by exposure to coal dust in underground mines, recent scientific studies reveal that miners exposed to coal dust while working at surface mines are much more prone to contract the disease than previously reported.<sup>295</sup> Notwithstanding NIOSH’s findings, and the urgency they suggested, MSHA did not move to tighten respirable coal dust standards until 2009. In that year, MSHA

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[http://www.huffingtonpost.com/the-center-for-public-integrity/autopsies-massey-miner-black-lung\\_b\\_864174.html](http://www.huffingtonpost.com/the-center-for-public-integrity/autopsies-massey-miner-black-lung_b_864174.html).

<sup>294</sup> NAT’L. INST. OCCUP. SAFETY & HEALTH, U.S. DEP’T OF HEALTH & HUMAN SERVICES, NIOSH Pub. No. 95-106, CRITERIA FOR A RECOMMENDED STANDARD: OCCUPATIONAL EXPOSURE TO RESPIRABLE COAL MINE DUST iii (1995), *available at* <http://www.cdc.gov/niosh/pdfs/95-106a.pdf>. The National Institute of Occupational Health and Safety (NIOSH) found that “[e]pidemiological studies have clearly demonstrated that miners have an elevated risk of developing occupational respiratory diseases when they are exposed to respirable dust over a lifetime at the current MSHA permissible exposure limit . . . of 2 mg/m<sup>3</sup>. The exposure limit of 1 mg/m<sup>3</sup> recommended in this document is based on an evaluation of health effects data, sampling and analytical feasibility, and technological feasibility.” *Id.* The NIOSH report warned that the “recommended exposure limit . . . does not insure that miners exposed at this concentration over a lifetime will have a zero risk of developing occupational respiratory diseases.” *Id.* NIOSH recommended additional protective measures including limiting worker exposure through “engineering controls and work practices” and “frequent monitoring of worker exposures, and . . . participation of miners in . . . medical screening and surveillance program.” *Id.*; *see also* NIOSH, *A Review of Information Published Since 1995 on Coal Mine Dust Exposures and Associated Health Outcomes* (Draft Rept. 2010), *available at* <http://www.cdc.gov/niosh/review/peer/HISA/expandashealth-pr.html> (giving summary of reports since 1995).

<sup>295</sup> A. Scott Laney et al., *Pneumoconiosis and Advanced Occupational Lung Disease Among Surface Coal Miners — 16 States, 2010–2011*, 61 MORBIDITY & MORTALITY WKLY. REP. 431, 432 (2012), *available at* <http://www.cdc.gov/mmwr/pdf/wk/mm6123.pdf> (“This analysis indicates that some currently working surface coal miners with little or no underground mining experience suffer from severe preventable respiratory disease, even though surface miners are thought to work in conditions less dusty than the confined work spaces of underground miners.”).

began an “End Black Lung: ACT NOW” campaign.<sup>296</sup> In 2010, the agency finally proposed a rule aimed at lowering miners’ exposure to coal dust.<sup>297</sup>

The coal industry, however, almost uniformly objected to the proposed rule on a number of grounds, which include the assertion that it will not reduce the incidence of black lung.<sup>298</sup> A coal industry executive

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<sup>296</sup> MINE SAFETY AND HEALTH ADMIN., END BLACK LUNG ACT NOW!, <http://www.msha.gov/S&HINFO/BlackLung/Homepage2009.asp> (last visited June 3, 2012). See also Erica Peterson, *MSHA’s Proposed Rules Cut Dust Limits, Require Personal Dust Monitors*, W. VA. PUBLIC BROAD. (Oct. 15, 2010) <http://www.wvpubcast.org/newsarticle.aspx?id=17097> (The new rule addresses many previously identified problems with existing federal mining regulations, including updating methods for measuring coal dust so that sampling will more accurately reflect working conditions. If implemented, the new rule would require miners to wear personal dust monitors if they work in high dust-concentration areas.).

<sup>297</sup> Lowering Miners’ Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors, 75 Fed. Reg. 64,412, (proposed Oct. 19, 2010) (to be codified at 30 C.F.R. 70, 71, 72, 75, 90). See *supra* notes 45–49 and accompanying text, for a discussion of coal industry objections to this regulatory initiative. One commentator placed MSHA’s failure to act on NIOSH’s 1995 recommendations in perspective:

For 15 years, the scientific evidence has been telling us that US coal miners are exposed to levels of respirable dust that cause disease, but under the current federal mine safety regulations, these exposure levels are legal. That needs to change. Not only is it ethically the right thing to do, but it is also the law of the land: “. . . to the greatest extent possible, the working conditions in each underground coal mine are sufficiently free of respirable dust concentrations in the mine atmosphere to permit each miner the opportunity to work underground during the period of his entire adult working life without incurring any disability from pneumoconiosis or any other occupation-related disease during or at the end of such period.

Celeste Montforton, *No Matter What Mining Industry Reps Say, MSHA’s Proposed Rule to Address Black Lung is Easily Achievable*, SCI. BLOGS: THE PUMP HANDLE (July 19, 2011) (quoting 30 U.S.C. § 841(b)), available at [http://scienceblogs.com/thepumphandle/2011/07/no\\_matter\\_what\\_mining\\_industry.php](http://scienceblogs.com/thepumphandle/2011/07/no_matter_what_mining_industry.php).

<sup>298</sup> See discussion at notes 48–52, *supra* and accompanying text See also, comments of National Mining Assn., Alliance Natural Resources Co., Alpha Natural Resources, Co., Arch Coal Inc., BHP Billiton New Mexico Coal Co., Murray Energy Corporation, Peabody Energy Co., Alliance Natural Resources, Illinois Coal Association, Indiana Coal

testified at a Congressional hearing typifying the industry's response to MSHA's proposal to tighten respirable dust standards. In attacking the proposal, he used the rhetoric associated with the industry's war on coal campaign—that government attempts to regulate coal's externalities would cause catastrophic job losses and economic dislocation in the coalfields:

Workers at businesses we supply will also see their jobs be destroyed if we don't stop the regulatory wave that's crushing the American economy. . . MSHA has proposed a Respirable Dust Standard that is unachievable in underground mine settings, and continues to be unable to produce the relevant data that they claim creates the causation basis for their rule. Day to day, our company sees the impacts of how MSHA is being used as a tool to stop coal mining.<sup>299</sup>

The National Mining Association, the nation's most influential coal trade association, countered MSHA's proposed rule with suggested

Council, Rosebud Mining Co., Virginia Surface Mining Assn., submitted to Docket: MSHA-201 0-0007 *Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors*; available at:

<http://www.msha.gov/REGS/Comments/2010-25249/CoalMineDust.asp> (public comments involved in the *Lowering Miners' Exposure to Respirable Coal Mine Dust Including Continuous Personal Dust Monitors Proposed Rule* ( 2010-25249) ).

*See also, e.g., Testimony of George Ellis President Pennsylvania Coal Association, MINE SAFETY & HEALTH ADMIN. 9* (Feb. 8, 2011) (“What evidence does MSHA have to show that the . . . standard that has been used to protect Part 90 miners for the past 40 years is no longer adequate? This appears to be a case of arbitrarily cutting the standard in half, since the proposed standard will be reduced by that amount? The rule also appears to include a variety of 30 C.F.R. Part 75 changes that bear no rational relationship whatsoever to preventing CWP.”), available at

<http://www.msha.gov/REGS/Comments/2010-25249/Transcripts/GeorgeEllisWashingtonPa.pdf>.

<sup>299</sup> *EPA's Appalachian Energy Prematorium: Job Killer or Creator? Hearing before the Subcomm. on Reg. Affairs, Stimulus Oversight & Gov't Spending of the H. Comm. on Oversight & Gov't Reform, 112th Cong. (July 14, 2011)* (prepared statement of Tom Mackell, President, E. Fairfield Coal. Co.), available at [http://oversight.house.gov/wp-content/uploads/2012/01/7-14-11\\_Mackell\\_RegAffairs\\_EPA\\_Testimony.pdf](http://oversight.house.gov/wp-content/uploads/2012/01/7-14-11_Mackell_RegAffairs_EPA_Testimony.pdf). *But see* Montforton, *supra* note 293 (“Respirable dust concentrations at Mr. Mackell's underground coal mines are comparable to the situation nationwide. MSHA's enforcement data indicates that the vast majority of coal mine operators are already complying with the 1.0 milligram standard.”).

alternatives, but has not been able to summon adequate support in the Senate to override MSHA's proposed rule by substantive legislation.<sup>300</sup>

As coal industry executives and lobbyists were gearing up to resist the proposed rule, investigators reported that autopsies of the miners killed by the 2010 explosion at the Upper Big Branch mine found almost three quarters of them had black lung disease. This percentage was more than twenty times higher than what MSHA and the industry had claimed to be the average for all underground coal miners.<sup>301</sup> The autopsies revealed that both old and young UBB miners had acquired the disease—a few were as young as twenty-five. Five had been working in coal mines less than ten years.<sup>302</sup> The West Virginia Governor's Independent Investigation Panel on the UBB explosion asserted that “the victims at UBB constitute a random sample of miners . . . the fact that 71 percent of them show evidence of CWP is an alarming finding given the ages and work history of these men.”<sup>303</sup>

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<sup>300</sup> See *Block Funding*, *supra* note 288. The National Mining Association accused MSHA of being “unwilling to consider seriously the constructive proposals we have made to address this problem directly and improve miner’s health.” NMA’s proposals include (1) requiring the use of “air helmets” used in other occupations to provide workers with fresh air; (2) allowance of companies to rotate miner to allow for early detection of respiratory impairment; (4) adopt a weekly cumulative dose limit rather than MSHA’s current shift-by-shift approach to dust exposure (and recognize that longer work periods affect exposure); (5) address the alleged localized nature of the black lung problem (using NIOSH x-ray surveillance data) by revising the rule so that it addresses local conditions rather than MSHA’s proposed general requirement that would be applicable nationwide; and (6) Complete the additional research and development needed to ensure integrity of personal dust monitors. *Id.*

<sup>301</sup> GOVERNOR’S INDEPENDENT INVESTIGATION PANEL, *supra* note 260. See also Hamby, *supra* note 289.

<sup>302</sup> *Id.*, *supra* note 260.

<sup>303</sup> *Id.* at 32. Dr. Edward Petsonk, a nationally recognized black lung expert indicates that in 2003 researchers identified an increase in the incidence of the disease and since then documented the doubling of cases. See *Most Upper Big Branch Mine Disaster Victims Had Black Lung Disease*, HAZARDEX (July 9, 2012), <http://www.hazardexonthenet.net/article/51666/Most-Upper-Big-Branch-mine-disaster-victims-had-black-lung-disease.aspx?AreaID=2>. Of great concern is the frequency of the most severe type ---progressive massive fibrosis, which is incapacitating and fatal. *Id.*

Convincing, robust evidence exists showing that coal miners, in increasing numbers, continue to be exposed to crippling levels of respirable dust in American mines.<sup>304</sup> Notwithstanding the evidence, MSHA's efforts to tighten dust exposure standards have stalled in the face of coal industry lobbying and political intransigence in Congress.<sup>305</sup> Indeed, to deter MSHA from moving forward with its proposed respirable dust rule, the House of Representatives added a provision to the 2012 House budget bill to block the agency's use of appropriated funds to implement new black lung regulations pending issuance of a Government Accountability Office ("GAO") report. The GAO was charged with examining the validity of research that indicates the doubling of black lung disease over the previous ten years.<sup>306</sup>

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"Researchers have identified hot spots of new cases, many in a triangular region of Appalachia stretching from eastern Kentucky through southern West Virginia and into southwestern Virginia." *Id.*

<sup>304</sup> See, e.g., Howard Berkes, *As Mine Protections Fail, Black Lung Cases Surge*, NAT'L PUB. RADIO (July 09, 2012) <http://www.npr.org/2012/07/09/155978300/as-mine-protections-fail-black-lung-cases-surge> ("Incidence of the disease has doubled in the last decade, according to data analyzed by [an] epidemiologist . . . at the National Institute for Occupational Safety and Health"). See also *supra* note 288 and accompanying text.

<sup>305</sup> Dave Jamieson, *Black Lung Disease: Life-Saving Rules, Technology Stymied By Politics, Experts Say*, THE HUFFINGTON POST, Aug. 18, 2012, [http://www.huffingtonpost.com/2012/08/18/black-lung-disease-politics\\_n\\_1799340.html](http://www.huffingtonpost.com/2012/08/18/black-lung-disease-politics_n_1799340.html) (quoting occupational safety advocate Celeste Montforton: "If this rule, for political reasons, doesn't move forward, then we have a whole generation of miners who will have been exposed to coal dust because people play politics with people's lives.").

<sup>306</sup> In their FY 2012 appropriations bill, members of the majority party on the House Appropriations subcommittee (possessing jurisdiction over the Labor Department) would prohibit MSHA from using any funds to develop, promulgate, enforce or otherwise implement a new rule to protect miners from exposure to respirable coal dust. *A Bill Making Appropriations for the Departments of Labor, Health and Human Services, and Education, and Related Agencies for the Fiscal Year Ending September 30, 2012, and for Other purposes*, 112th Cong. at 36, available at [http://appropriations.house.gov/UploadedFiles/FY\\_2012\\_Final\\_LHHSE.pdf](http://appropriations.house.gov/UploadedFiles/FY_2012_Final_LHHSE.pdf) ("SEC. 122. None of the funds made available by this Act may be used to continue the development of or to promulgate, administer, enforce, or otherwise implement the Lowering Miners' Exposure to Coal Mine Dust, Including 22 Continuous Personal Dust Monitors



In the summer of 2012, before the GAO report was expected to be released in August, the House majority proposed another appropriations rider that would block funding for the proposed MSHA dust rule during fiscal year 2013.<sup>307</sup> MSHA's proposed rule continues to stall although the comment period ended in mid-2011. MSHA has not published a rule or otherwise announced what action it will take or when.<sup>308</sup>

A recent in-depth report by National Public Radio and The Center for Public Integrity explored the failure of government regulators to enforce the 1969 Act as well as the coal industry's resistance to, and worse, its intentional cheating to avoid compliance with mine dust regulatory standards:

Throughout the coalfields of Appalachia, in small community clinics and in government labs, it has become

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regulation . . . being developed by the Mine Safety and Health Administration of the Department of Labor.”). *See also* Ken Ward Jr., *Dust Reforms Stalled by Years of Inaction*, THE CHARLESTON GAZETTE, July 7, 2012, <http://wvgazette.com/News/montcoal/201207070075>.

<sup>307</sup> *Block Funding, supra*, note 288. The bill stated:

None of the funds made available by this Act may be used to continue the development of or to promulgate, administer, enforce, or otherwise implement the Lowering Miners' Exposure to Coal Mine Dust, Including 20 Continuous Personal Dust Monitors regulation (Regulatory Identification Number 1219-AB64) being developed by the Mine Safety and Health Administration of the Department of Labor.

*Id.* Sen. Tom Harkin of Iowa, chairman of the Labor, Health and Human Services, and Education Committee, issued a statement arguing that:

The lives and health of miners and their families should not be a partisan issue . . . Last year, [the House Majority] required a GAO study to examine the science underlying the increased incidence of black lung, but now, they are attempting to kill the proposed rule without even waiting for the results of the study they requested.

*Id.*

<sup>308</sup> *Lowering Miners' Exposure to Respirable Coal Mine Dust, Including Continuous Personal Dust Monitors*, 76 Fed. Reg. 30,878-901 (May 27, 2011) (to be codified at 30 C.F.R. Pts. 70, 71, 72, 75, & 90) (“ACTION: proposed rule; extension of comment period.”).

clear: Black lung is back. The disease's resurgence represents a failure to deliver on a 40-year-old pledge to miners in which few are blameless . . . The system for monitoring dust levels is tailor-made for cheating, and mining companies haven't been shy about doing so. Meanwhile, regulators often have neglected to enforce even these porous rules. Again and again, attempts at reform have failed. A[n] analysis of databases maintained by the federal Mine Safety and Health Administration found that miners have been breathing too much dust for years, but MSHA has issued relatively few violations and routinely allowed companies extra time to fix problems.<sup>309</sup>

Externalization of some black lung costs can be quantified. Since 1969, the federal government has administered a compensation program for victims of black lung paid in part by coal company fees.<sup>310</sup> Coal miners can prove entitlement to black lung disability payments if they can show their disability resulted from exposure to respirable dust during the course of their mine employment. From 1969 through 2004, black lung benefits paid to almost one million miners totaled more than \$41 billion.<sup>311</sup> If identification of many of the harmful externalities produced during each

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<sup>309</sup> Chris Hamby, *Black lung surges back in coal country*, CTR. FOR PUBLIC INTEGRITY (July 7, 2012), available at <http://www.iwatchnews.org/2012/07/08/9293/black-lung-surges-back-coal-country>.

<sup>310</sup> See *Usery v. Turner Elkhorn Mining Co.*, 428 U.S. 1, 8-12 (1976) (highlighting the origins of the black lung program and the system it creates). See also Donald T. DeCarlo, *The Federal Black Lung Experience*, 26 HOW. L. J. 1335 (1983).

<sup>311</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, GAO 08-628T, FEDERAL COMPENSATION PROGRAMS: PERSPECTIVE ON FOUR PROGRAMS FOR INDIVIDUALS INJURED BY EXPOSURE TO HARMFUL SUBSTANCES, BEFORE SUBCOMMITTEES OF THE H. COMM. ON THE JUDICIARY, 111th Cong., (2008), at 2 (Statement of Anne-Marie Lasowski, Acting Director Education, Workforce, and Income Security Issues); available at <http://www.gpo.gov/fdsys/pkg/GAOREPORTS-GAO-08-628T/html/GAOREPORTS-GAO-08-628T.htm>. As one black lung program expert has emphasized, mine "owners have managed to cap and partially off-load their liability for black lung disease on both the companies that buy coal and the American people." *Vladeck, supra* note 277, at 40.

stage of coal's life cycle does not enlighten and trouble the previously uninformed, certainly quantifying the cost of black lung should do so.

Identifying the billions in benefits paid to disabled coal miners, their widows and children should drive home at least one aspect of the colossal price paid by miners and their families to power the nation. But, the less readily quantifiable harm and the intangible costs that the coal life cycle externalizes onto coal mining communities are more easily ignored. Despoiling the environment where mining families live, fouling drinking water and the air, dewatering springs and wells, subsiding homes, blasting that shakes foundations, avoidable injuries and deaths of mine workers, flooding and landslides and loss of forest habitat do not come to mind when the average American flips on a light switch or powers up a computer.

That said, it seems appropriate to observe that the misery and death that accompanies coal workers' pneumoconiosis and the horror of wives and children watching a coal miner slowly suffocate from black lung disease is, perhaps, the most insidious of coal's many externalities. Ten thousand deaths in a decade from a wholly preventable occupational disease are incomprehensible—as is the coal industry's failure to act decisively to put an end to black lung disease and its strident resistance to regulation that seeks to accomplish that goal.

Empirical studies of coal's extensive externalities continue to be ignored as the coal industry and its supporters attack government regulators, the miners' union, and environmentalists for waging a job-killing, coalfield community destroying war on coal. As it has for a century, the coal industry's response to the demonstrable negative externalized costs of coal is to deny and/or minimize, while ignoring demands that these costs be internalized.

## V. THE POST-WAR-ON-COAL FUTURE OF COALFIELD COMMUNITIES

### A. *Return To A Status Quo Economy?*

All wars eventually come to an end. The outcome of “war on coal”—or more accurately—the “war about coal,” is predictable. No

doubt coal will continue to be mined in the region for decades, albeit, likely at reduced levels of productivity. Competition from shale gas and renewables will increase. Economically minable coal seams and coal mine employment will decline.<sup>312</sup> Most central Appalachian coalfield communities will survive in this post-war-on-coal environment. How they survive and what their future will look like remains to be seen.<sup>313</sup>

The coal industry will certainly incur costs if proposed Obama administration regulatory constraints on coal mining, disposal of coal-related wastes and coal combustion are employed. Such regulation will force internalization of previously externalized costs and the per-ton cost of coal will increase. Internalization of the costs of these harmful externalities will create a more level playing field for coal's energy market competitors.<sup>314</sup> However, even if every Obama regulatory proposal were implemented, there is meager evidence such regulation would trigger the catastrophic economic and social upheaval predicted by coal industry lobbyists and supporters.

Whatever the eventual outcome of the political and public relations "war" about coal, neither side of the conflict has had much to offer

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<sup>312</sup> One caveat to the projection of a future of declining coal production and attendant job losses in Central Appalachia is the potential for significant increases in coal exports from the region to foreign markets. See e.g., Keith Johnson, *U.S. Coal Finds Warm Embrace Overseas*, WALL ST. J., Feb. 6, 2013 ("U.S. coal is finding a ready market in countries where natural gas is three to five times more expensive"), available at <http://online.wsj.com/article/SB10001424127887323644904578271830563979920.html>.

<sup>313</sup> The level of future coal productivity is expected to be influenced primarily by the fuel's ability to compete with low-priced shale gas and by the growing contribution of renewable energy to the portfolio of electricity generators. As noted above, coal's electric generation market share declined from more than fifty percent to thirty four percent in less than half of a decade. This deterioration was demonstrably in reaction to the availability of cheap shale gas prior to implementation of any "war on coal" regulatory initiatives. See discussion at *supra* note 3, and accompanying text.

<sup>314</sup> Other energy sources also have externalities that should be identified and internalized so that the cost of electricity will truly reflect, as much as possible, true costs. See generally, JOHN E. IKERD, *SUSTAINABLE CAPITALISM: A MATTER OF COMMON SENSE* 69 (2005) ("The purpose of internalizing the externalities is to force economic decision-makers to consider the full economic impact their decisions have upon others.").

coalfield communities. Having incited anger and fear of lost jobs and economic collapse among residents of the towns and villages of the region, the coal industry offers more of the same: a narrow coal-based economy buffeted by cycles of boom and bust.<sup>315</sup> A recent government study of economically distressed Pike County, Kentucky, found:

[L]ocal residents and officials have a dim view of environmental regulations. Many residents view regulatory agencies, such as the EPA, and environmental activists as ill-informed and a threat to their community and livelihood. While most acknowledge the importance of protecting natural resources, few view current coal practices as environmentally unsound. Both residents and community leaders fear that increased regulation will be the death knell of the coal industry and will drive their community and the surrounding region into perpetual despair. Local residents, in fact, have a difficult time imagining a future without coal.<sup>316</sup>

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<sup>315</sup> Reflecting on war on coal rhetoric, West Virginia Senator Jay Rockefeller has observed:

Carefully orchestrated messages that strike fear in the hearts of West Virginians and feed uncertainty about coal's future are the subject of paid television ads, billboards, break room bulletin boards, public meetings, letters and lobbying campaigns. A daily onslaught declares that coal is under siege from harmful outside forces, and that the future of the state is bleak unless we somehow turn back the clock, ignore the present and block the future.

158 CONG. REC. S4316 (daily ed. June 20, 2012) (statement of Sen. Rockefeller), *available at* <http://www.gpo.gov/fdsys/pkg/CREC-2012-06-20/pdf/CREC-2012-06-20-senate.pdf> [hereinafter Rockefeller Senate Floor Speech].

<sup>316</sup> TIM EZZELL, ET AL., STRATEGIES FOR ECONOMIC IMPROVEMENT IN APPALACHIA'S DISTRESSED COUNTIES: AN ANALYSIS OF TEN DISTRESSED AND FORMERLY DISTRESSED APPALACHIAN COUNTIES 80 (2012) [hereinafter 2012 A.R.C. REPT.], *available at* [http://www.arc.gov/research/researchreportdetails.asp?REPORT\\_ID=98](http://www.arc.gov/research/researchreportdetails.asp?REPORT_ID=98). This Appalachian Regional Commission Report found: "The culture of coal permeates all aspects of life in Pike County, [Kentucky located] . . . at the heart of the Appalachian

It is not surprising many coalfield citizens believe the goal of the Obama administration and environmentalists is to destroy the coal industry and the economy of those communities whose residents rely on coal for their livelihoods.<sup>317</sup> It is difficult to explain to them that there can be economic life in the Appalachian coalfields as coal declines. As one former miner and union organizer involved in the region's economic diversification movement explained:

[Coal industry propaganda] . . . makes it harder for us to try to explain to the guys . . . . What we're trying to do is not shut the mines down or do away with jobs. We're trying to make you see that your jobs aren't gonna be here, and we want to move forward and make future [sic], if not for you, your children might maybe want to stay here in the mountains and stuff. This didn't happen overnight . . . the situation we're in. So I mean, it goes without saying that this very bad situation that we're in is not gonna be fixed overnight, either.<sup>318</sup>

At bottom then, the coal industry offers a chance for miners to keep their jobs if they stand against the national administration in Washington and its "war on coal." The status quo option appears a better offer to miners and

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coal industry." *Id.* The County describes itself as "America's Energy Capital," a phrase it has trademarked. The report describes the close identification Pike County residents have with coal mining:

Cars are adorned with stickers and license plates that identify their occupants as "Friends of Coal." The county courthouse features displays of carved coal and local officials embellish their offices, and lapels, with symbols of their allegiance. Residents commonly wear shirts and hats proclaiming their loyalty to the coal industry. Throughout the area, the coal miner is portrayed as an iconic folk hero, a depiction that reflects local pride along with a measure of shared defiance.

*Id.*

<sup>318</sup> Michelle Chen, *Coal Communities at the Pivot of Dirty Industries and Clean Energy*, THE HUFFINGTON POST (Nov. 26, 2012), available at [http://www.huffingtonpost.com/michelle-chen/coal-communities-at-the-p\\_b\\_2174165.html](http://www.huffingtonpost.com/michelle-chen/coal-communities-at-the-p_b_2174165.html).

their families when compared to the Obama administration's failure to directly address coalfield citizens and offer them a specific plan to deflect the impact of jobs lost in a declining coal economy.<sup>319</sup>

The administration's efforts to reduce coal's destructive externalities sharply contrasts with its failure to meaningfully engage on the issue of coalfield communities' economic future. The administration has failed to put forward a plan to assist coal communities in diversifying their economy or even initiate a serious conversation about their future. This silence sends a strong message that their inhabitants are invisible to Washington politicians and bureaucrats—as they have been for the better part of the last century.

Despite the strong cultural and economic connections coalfield communities have to coal mining and a coal-based economy, it is obvious to objective observers that coal is in decline and that this downward trend could have serious economic consequences. A leading media champion of the coal industry in West Virginia has accepted this new reality:

Coal is, for better or worse, a major part of who we are. That fact makes the following so very difficult for many of us to grasp: We must expand our economy. Whether it's

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<sup>319</sup> The Obama administration has made proposals for economic development that could generate jobs in coalfield communities. See The Appalachian Regional Development Initiative ("ARDI"). ARDI is as a partnership including the ARC and 13 federal agencies "working to strengthen and diversify the Appalachian economy and better coordinate federal efforts in the Appalachian Region."

[http://www.arc.gov/program\\_areas/index.asp?PROGRAM\\_AREA\\_ID=24](http://www.arc.gov/program_areas/index.asp?PROGRAM_AREA_ID=24). The initiative was launched in November 2010 by a memorandum of understanding.

<http://www.arc.gov/images/appregion/ARDIMOU.pdf>.

Another federal undertaking, the Economy, Energy and Environment Initiative ("E3") has a goal to "bring together federal agencies, states and local communities for a broad discussion on how to connect respective programs to deliver responsive, coordinated solutions in a manufacturing environment," see <http://www.e3.gov/about/index.html>. These federal programs, have been "top down" efforts with little local community collaboration. Like so many Washington programs these have failed to effectively communicate to coalfield citizens specific plans to replace *their* mining-related jobs in *their* communities with new well paying employment opportunities.

topological limitations or politicians and bureaucrats willing to put ideology over science, mining coal is going to get harder, more expensive and more labor-intensive. Hopefully, industry leaders will rise to the challenge and continue to expand and innovate in effective, but environmentally conscious, ways. But we must have a clear grasp on what's ahead, and that means that this state needs to do more to encourage investment. Changing a mindset is one thing, but our elected leaders need show some real leadership and get their heads out of the sand . . . . Looking beyond coal may not be popular, but honesty is an important part of this debate. While we must never marginalize what has been the cornerstone of our economy, we have to be realistic about what we're facing. We need to do all we can to give the next generation of West Virginians the chance to make a life for themselves and their families.<sup>320</sup>

How other politicians, public policy-makers, and civic leaders of the region respond to the challenge of a declining coal industry remains to be seen.

### B. *Planning For Diversification of Coalfield Communities*

Coal has long put bread on the table and money in the pockets of miners and their families while providing revenue for their communities.<sup>321</sup> Like those in coal-rich Pike County Kentucky, many coalfield leaders see no alternatives to a coal-driven economy:

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<sup>320</sup> *W.Va. Citizens Need to Look Beyond Coal*, THE STATE JOURNAL (Oct. 14, 2011), available at

<http://www.statejournal.com/story/15696138/wva-citizens-need-to-look-beyond-coal>

<sup>321</sup> Even today coal's contribution is significant. See, MCILMOIL & HANSEN, *supra* note 205, at 10-19. ("In 2008, for instance, the coal industry employed 37,000 workers directly and indirectly across the region, accounting for 1% to 40% of the labor force in individual counties . . . [T]he coal severance tax generates hundreds of millions of dollars



Local [P]oliticians and other community leaders “view energy, long the staple of the local economy, as the path to future growth.” The county’s development strategy is largely based on energy extraction, production and research. To their credit, local leaders are taking a broad-based approach to energy, one that includes renewable sources. Coal, however, remains king in Pike County and mining remains a key element in the local development strategy.<sup>322</sup>

Kentucky state agency reports for 2013 show employment in eastern Kentucky mines (including those in Pike County) fell from 13,608 in December 2011 to 9,540 in December 2012. During the same period, eastern Kentucky coal production dropped to 49.4 million tons — its lowest level since 1965.<sup>323</sup> Pike County Judge Executive Wayne T. Rutherford faulted federal regulations and the “war on coal,” but predicted another boom would be coming. “The short term on coal doesn’t look good for us or anybody else,” he admitted, but “[l]ong term, it looks great.”<sup>324</sup>

That community leaders and politicians cling to the hope of another coal boom while ignoring a declining coal-related job base is not a new phenomenon in the region.<sup>325</sup> Past experience indicates that, during

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in state revenues across the region every year, with tens of millions of dollars being distributed to counties and municipalities.”) *Id.*

<sup>322</sup> 2012 A.R.C. Rept., *supra* note 312 at 80.

<sup>323</sup> James Bruggers, *Kentucky coal production, employment plummet*, [http://www.courier-journal.com/article/20130403/BETTERLIFE04/304030121/Kentucky-coal-production-employment-plummet?nclick\\_check=1](http://www.courier-journal.com/article/20130403/BETTERLIFE04/304030121/Kentucky-coal-production-employment-plummet?nclick_check=1) (“Eastern Kentucky production peaked at 131 million tons in 1990 and has declined by 53.5 percent since 2000.”)

<sup>324</sup> *Id.*

<sup>325</sup> Today, industry leaders predict dire consequences for coal as a result of the Obama administration’s “war,” while alternatively presenting an optimistic future ahead. *See* Press Release, National Mining Association, Global Outlook is Positive for U.S. Coal and Minerals Mining, (Jan. 28, 2013) (statement of Hal Quinn, National Mining Association President & CEO), *available at* <http://www.nma.org/index.php/press-releases-2013/540-global-outlook-is-positive-for-u-s-coal-and-minerals-mining-says-nma-ceo>. *But see* Ken

catastrophic bust times in coal's century-long boom-bust economic cycle, neither the coal industry nor political leaders advocated economic diversification when faced with huge devastating job losses.<sup>326</sup> For

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Ward, Jr., *'War on coal': Industry predicts good times ahead?*, THE COAL TATTOO BLOG, THE CHARLESTON GAZETTE (Jan. 29, 2013), available at <http://blogs.wvgazette.com/coalattoo/2013/01/29/war-on-coal-industry-predicts-good-times-ahead/>. Ward cautions that "casual readers of the write-ups about the National Mining Association's outlook for the new year should be wary, especially if they live in the coalfields of Appalachia and see the NMA's review as a sign that a huge coal rebound is just around the corner." *Id.* Caution is appropriate, he explains, because "NMA's overall projections for coal production in the coming years aren't all that different from those issued previously by the U.S Energy Information Administration and the International Energy Agency." *Id.* As discussed above, the USEIA and the IEA predict a substantial decline in central Appalachian coal production and the IEA foresees a continuing loss of coal markets over the next two and a half decades – by which time natural gas will nearly overtake coal in the "primary energy supply mix." *Id.*

<sup>326</sup> An exception to the general non-responsiveness of political leaders was the creation of the Appalachian Regional Commission ("ARC"). In 1963 President John F. Kennedy created the President's Appalachian Regional Commission ("PARC") and directed it to draw up a comprehensive economic development program for the Appalachian Region. See APPALACHIA: A REPORT BY THE PRESIDENT'S APPALACHIAN REGIONAL COMMISSION (1964) available at <http://www.arc.gov/about/ARCAppalachiaAREportbythePresidentsAppalachianRegionalCommission1964.asp>.

The resulting program outlined in the PARC's 1964 Report was endorsed by the Conference of Appalachian Governors and utilized by President Lyndon B. Johnson as the foundation for the Appalachian Regional Development Act ("ARDA") passed early in 1965 by a diverse bipartisan coalition. The ARC was a component of what President Johnson called the "War on Poverty" – a central part of his "Great Society" program. See, Lyndon B. Johnson, Great Society Speech, (May 7, 1964) in PUBLIC PAPERS OF THE PRESIDENTS OF THE UNITED STATES, LYNDON B. JOHNSON, Book I (1963-64), at 704-707, available at <http://www.h-net.org/~hst306/documents/great.html>. The Act created the Appalachian Regional Commission ("ARC") which survives today. The scope of ARC's jurisdiction extends to counties in upstate New York and Pennsylvania through counties in Maryland, southeastern Ohio, West Virginia, Virginia, Kentucky, Tennessee, The Carolinas, southward to Georgia, Alabama and Mississippi. 40 U.S.C. §14102. The ARC is credited with a degree of success over the four decades since its creation. See generally ELLER, *supra* note 199 ("As much as any other Great Society program, the ARC played a vital role in the modernization of Appalachia during the decades after the waning of the antipoverty crusade."). See also, James P. Ziliak, *The Appalachian Regional Development Act and Economic Change*, CTR. FOR POVERTY RESEARCH., 16

example, during the period 1950-1960 more than 230,000 mining jobs were lost, mostly in Appalachia.<sup>327</sup> Appalachian historian Ron Eller described the impact of coal bust on the region's economy of the time:

Changes in the coal industry had been at the core of central Appalachia's economic distress since World War II. The introduction of new technologies had given rise to massive unemployment in the underground mines and to the emergence of surface mining practices that left the landscape scarred and degraded. Rural families could see the truckloads of coal that poured from expanding strip mine operations while their sons and daughters were forced to migrate out of state for jobs and while those who remained struggled to survive on charity and government handouts.

Later, a mid-1970's coal boom was followed by yet another bust period. From 1983-2003 more than 79,000 Appalachian mining jobs were eliminated because of competition from low priced oil and additional mechanization of underground and strip mines.<sup>328</sup> This boom cycle caused thousands of miners, who had left the region to find work, to return to their mountain homes only to find themselves unemployed as the cycle turned from boom to bust.<sup>329</sup>

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Sept. 16, 2010), *available at* <http://www.irp.wisc.edu/newsevents/workshops/2011/participants/papers/12-Ziliak.pdf>. The relative success of the ARC has been a matter of debate. *See, e.g.*, John Alexander Williams, *APPALACHIA A HISTORY* (2002) ("In effect the ARC has become another government agency preoccupied with the perpetuation of its existence, while its supporters constitute an interest group like most of the others that contend for preferment in Washington"); *See also*, ELLER, *supra* note 199, at 191-193, 207-211.

<sup>327</sup> *Coal and Jobs in the United States*, SOURCEWATCH, *available at*: [http://www.sourcewatch.org/index.php?title=Coal\\_and\\_jobs\\_in\\_the\\_United\\_States](http://www.sourcewatch.org/index.php?title=Coal_and_jobs_in_the_United_States).

<sup>328</sup> Richard Bonskowski, et al., *Coal Production in the United States*, U.S. ENERGY INFORMATION ADMIN. (Oct. 2006) at 8; *available at*: [ftp://ftp.eia.doe.gov/coal/coal\\_production\\_review.pdf](ftp://ftp.eia.doe.gov/coal/coal_production_review.pdf).

<sup>329</sup> Some historians and social scientists studying the Appalachian coal-based economic boom-bust phenomenon have drawn a parallel to historic oppression of colonial powers who exploited the natural resource bounty of their colonies without fairly compensating

At the end of the 1980s coal mine employment in Appalachia dropped to an all-time low.<sup>330</sup> Looking back at this period twenty years later, Professor Eller remarked that this “downturn represented more than another bust in the long boom-bust-cycle that had shaped the history of the

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subjugated colonial populations. This scenario is described as the “internal colonialism” model:

Applied to the Appalachian experience, the internal-colonialism model has been used to examine the process by which dominant outside industrial interests established control of a region's economic resources and political structure and prevented autonomous development of a subordinate internal colony. In other words, a region such as Appalachia, rich in natural resources but lacking political power, became a virtual resource colony to the industrial centers of the United States.

John D. Fowler, *Appalachia's Agony: A Historiographical Essay On Modernization And Development In The Appalachian Region*, 72 THE FILSON CLUB HISTORY Q. 305, 315 (1998). See also, David E. Whisnant, MODERNIZING THE MOUNTAINEER: PEOPLE, POWER, AND PLANNING IN APPALACHIA (1994) at 266-84.

<sup>330</sup> Professor Eller describes the context in which this massive loss of coalfield jobs occurred:

After the expansive years of the coal boom in the 1970s, energy prices plummeted in the early 1980s, and the subsequent glut of oil sent the world economy into decline. Appalachia was slower to recover from the recession of 1981-1982, and the region's economy remained sluggish throughout the remainder of the decade. Coal exports from the mountains rose from 49 million tons in 1973 to 104 million tons in 1981 but plummeted to 73 million tons by 1983. Although mechanization would increase productivity in the late 1980s, it provided employment for fewer miners. The number of operating mines declined once again, and many out-migrants who had come back to the region to work in the mines in the 1970s now found themselves unemployed and unable to return to their factory jobs in the Midwest because of the flight of American steel and manufacturing companies offshore. At the end of the decade, the number of working miners in Appalachia reached an all-time low. The most recently hired workers, often women miners, were the first to lose their jobs.

ELLER, *supra* note 199, at 210.

region for more than a century.”<sup>331</sup> “The new unemployment was structural” Eller observed “and jobs in coal mining . . .and other industries would never return.”<sup>332</sup>

Notwithstanding the loss of tens of thousands of jobs and structural change in the coalfield economy, the reaction of most political and civic leaders was to hope for a resurgence in coal production – another coal boom. Little or no thought was given then (or now) moving away from heavy dependence on coal toward economic diversification.

While there may be significant reserves of coal left in Appalachia, they lie in thinner, deeper, seams that are much more expensive to mine.<sup>333</sup> Coal boosters, however, conveniently ignore the realities of the coming exhaustion of central Appalachia coal, an eventuality that coalfield residents do not widely recognize. The expectation that well-paying coal

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<sup>331</sup> *Id.* at 212.

<sup>332</sup> *Id.*

<sup>333</sup> See, e.g., *Quarterly Coal Report July – September 2012*, U.S. ENERGY INFORMATION ADMIN., (Dec. 20, 2012) (“The upward trend of coal prices primarily reflects an expectation that cost savings from technological improvements in coal mining will be outweighed by increases in production costs associated with moving into reserves that are more costly to mine.”) available at <http://www.eia.gov/coal/production/quarterly/>. It has been reported that:

The cost of mining coal has been going up. Although it’s commonly said that the United States is the Saudi Arabia of coal with more than 200 years worth of reserves, digging up those coal reserves and delivering them to customers has been getting more expensive. That’s because of rising costs of transportation, explosives, wages — and geology. In most areas, companies first dig coal from areas that are easiest to access and that have the thickest, richest seams. Over time, however, it becomes more expensive to mine — and more difficult to do so profitably. That’s particularly true in central Appalachia, where the political fight over the reasons for the coal industry’s woes have been most intense.

Steven Mufson, *Cost of mining coal continues to climb*, WASH. POST, Oct. 25, 2012, available at [http://www.washingtonpost.com/business/economy/cost-of-mining-coal-continues-to-climb/2012/10/24/d15666ca-1931-11e2-bd10-5ff056538b7c\\_print.html](http://www.washingtonpost.com/business/economy/cost-of-mining-coal-continues-to-climb/2012/10/24/d15666ca-1931-11e2-bd10-5ff056538b7c_print.html).

mining jobs will return and support coalfield communities well into the future is fading with the expanding recognition that increased competition from other fuels and depletion of the region's minable coal reserves negatively impact the coal market.<sup>334</sup>

While the great majority of political leaders in Appalachia joined the war on coal chorus, a few have broken ranks, warning their colleagues and coal executives to cast aside the provocative, anti-regulation rhetoric and challenging them to return to a reality-based analysis of coal's future. Among these few are West Virginia's long-serving United States Senators, Jay Rockefeller and Robert C. Byrd, for decades among the coal industry's most articulate advocates. Senator Rockefeller recognized coal miners and their families "understandably worry that a way of life and the dignity of a job is at stake" and that "[c]hange and uncertainty in the coal industry is unsettling."<sup>335</sup> Rejecting the industry's war on coal mantra, Rockefeller observed "[t]he reality is that many who run the coal industry today" prefer to "attack false enemies and deny any real problems than find solutions."<sup>336</sup> Rockefeller feared this denial of "the inevitability of change in the energy industry" would unfairly leave "coal miners in the dust."<sup>337</sup>

Similarly, Senator Byrd sought to distinguish fact from fantasy in the debate about coal's future in the region. He emphasized "[t]he greatest threats to the future of coal do not come from possible constraints on mountaintop removal mining or other environmental regulations, but rather from rigid mindsets, depleting coal reserves, and the declining

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<sup>334</sup>ROBERT C. MILICI & KRISTIN O. DENNEN, PRODUCTION AND DEPLETION OF APPALACHIAN AND ILLINOIS BASIN COAL RESOURCES, 10 (U.S. Geological Survey Prof. Paper, 1625-F, 2009) ("It appears that when the four counties in the Appalachian Basin (Greene County in Pennsylvania, Pike County in Kentucky, and Boone and Mingo Counties in West Virginia) that collectively produced about 113 million tons in 2005 are depleted within the next few decades, the Appalachian Basin, in its entirety, will enter into a period of steep decline unless large blocks of economically recoverable coal remain in the deep, unmined part of the basin") *available at* <http://pubs.usgs.gov/pp/1625f/downloads/ChapterH.pdf>.

<sup>335</sup> *Id.*

<sup>336</sup> *Id.*

<sup>337</sup> *Id.*

demand for coal as more power plants begin shifting to biomass and natural gas as a way to reduce emissions.”<sup>338</sup>

Looking beyond coal industry rhetoric and the current upheaval in coal markets, the Senator saw the potential for developing a diversified Appalachian economy. “West Virginia has a running head-start as an innovator” and “[l]ow-carbon and renewable energy projects . . . [are] already under development in West Virginia, including . . . the largest wind power facility in the eastern United States,” a bio-fuel refinery, several large wood pellet plants and major dams that could be retrofitted to generate a substantial amount of electricity.<sup>339</sup> Looking to a new energy future, Senator Byrd warned West Virginians that they have a choice “to anticipate change and adapt to it, or resist and be overrun by it.”<sup>340</sup> “One thing is clear,” Byrd cautioned, “the time has arrived for the people of the Mountain State to think long and hard about which course they want to choose.”<sup>341</sup>

Importantly, there are other citizens and leaders in coal communities who see clearly the looming threat posed by depletion of economically mineable reserves, increased competition from other fuels, and attendant declining coal production. Some look to a future that includes responsible coal mining, while others advocate for the end of the most damaging forms of coal extraction like mountaintop removal.<sup>342</sup> These disparate views, however, merge in a consensus goal of a diversified and sustainable economy shorn of coal’s negative and costly externalities. One commentator describes this awakening in coalfield communities as an emerging “paradigm shift in Appalachia . . . led by

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<sup>338</sup> Press Release, Senator Robert C. Byrd, Coal Must Embrace the Future (Dec. 3, 2010), available at <http://e360.yale.edu/images/digest/byrd-coal.pdf> [hereinafter Embrace the Future].

<sup>339</sup> *Id.*

<sup>340</sup> *Id.*

<sup>341</sup> *Id.*

<sup>342</sup> See e.g., Laura Bozzi, *Beyond Mountaintop Removal: Pathways For Change In The Appalachian Coalfields*, 4 DUKE FORUM FOR LAW & SOCIAL CHANGE 115, at 116 (2012) (discussing the “JOBS Project and its Pyrolysis Proposal”) (hereinafter *Pathways for Change*) available at <http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1029&context=dfllsc>.

progressive citizens, researchers, entrepreneurs, and organizations who have realized that Appalachia's economy must be more diverse and sustainable for Appalachia to make the drastic improvements it needs and deserves.<sup>343</sup>

There is, indeed, solid evidence of a paradigm shift as Appalachians begin to appreciate the overarching need to diversify local coalfield economies. This recognition accompanies a nascent, but growing, realization that communities of the region need no longer be held hostage to the entrenched view of coal mining as the only feasible economic engine. More importantly, proposals and plans are being formulated to make economic diversity a reality for central Appalachia.

### ***C. Shifting The Paradigm: Proposals For Diversifying The Central Appalachian Economy***

For the first time in the region's history serious economic diversification proposals are blossoming from a variety of sources. Advocates of diversification include environmental protection advocates, organized labor, politicians with close ties to the coal industry, economists and local community organizations. The following discussion, although not intended to be exhaustive, identifies some of emerging creative and interesting ideas and proposals aimed at creating a sustainable economy in Central Appalachia.<sup>344</sup>

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<sup>343</sup> Randal A. Strobo, *The Shape Of Appalachia To Come: Coal In A Transitional Economy*, 4 DUKE FORUM FOR LAW & SOCIAL CHANGE 91, 105 (2012) (hereinafter *Shape of Appalachia*) available at <http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1028&context=dfisc>.

<sup>344</sup> See, e.g., John Todd, et al., *Beyond Coal: A Resilient New Economy for Appalachia*, 1 Solutions Journal 45 (Aug., 2010); available at: <http://www.thesolutionsjournal.com/node/706>; David Orr, et al., *Economic Diversification in Central Appalachia: Ideas for a New Energy Economy*, Final Rept., Cent. Appal. Diversity Proj. (2010); available at: [http://www.natcapsolutions.org/CAPP/CAPP\\_Report\\_final.pdf](http://www.natcapsolutions.org/CAPP/CAPP_Report_final.pdf) It is beyond the scope of this essay to provide critical analysis of these proposals.



Among these are a proposal to create a permanent mineral severance tax trust fund<sup>345</sup> and suggestions for growing “green collar” jobs<sup>346</sup> through creation of a sustainable forestry industry,<sup>347</sup> reclamation of abandoned coal mines and abatement of water pollution,<sup>348</sup> development of new industries focused on renewable energy,<sup>349</sup> enhancement of regional energy efficiency<sup>350</sup> and by creating a market for

<sup>345</sup> See generally, *Diversification*, *supra* note 200.

<sup>346</sup> Green-collar jobs have been rather vaguely defined as:

. . . jobs that have a direct, positive impact on the environment have become known as green jobs; they include jobs at all levels of the earnings and skills spectrum, from professional-level employment of managers, architects and engineers, to jobs in the skilled trades, which are often referred to as green-collar jobs. . . . Green jobs are not necessarily new jobs, but often traditional jobs in industries and companies that are adapting to new markets and opportunities available in a clean energy economy.

Alan Hardcastle, *2008 Green Economy Jobs in Washington State*, WASH. ST. UNIV.

EXTENSION ENERGY PROGRAM 8 (2009), available at

[http://www.energy.wsu.edu/documents/Green\\_Jobs\\_Report\\_2008\\_WEXVersion.pdf](http://www.energy.wsu.edu/documents/Green_Jobs_Report_2008_WEXVersion.pdf).

The origin of the term “green collar jobs” can be traced to Alan T. Durning’s book: *GREEN COLLAR JOBS: WORKING IN THE NEW NORTHWEST* (1999). The book was written in the context of the depletion of the vast old growth forest of the Pacific Northwest and the accompanying loss of thousands of forest products industry jobs. The author posed the same basic question that coalfield communities face today: “what can the Northwest do to help its hard-pressed rural areas sustain their economies without high-volume resource extraction?” *Id.* at 3.

<sup>347</sup> *Shape of Appalachia*, *supra* note 335, at 111-14.

<sup>348</sup> Evan Hansen & Anne Hereford, *Creating Green Jobs and Economic Diversification in Central Appalachia by Reclaiming Polluting Coal Mines*, DOWNSTREAM STRATEGIES (Feb. 12, 2010) (hereinafter *Creating Green Jobs*); available at

<http://appalachiantransition.net/sites/ati/files/essays/Hansen%20Essay%20FINAL.pdf>.

<sup>349</sup> See e.g., EVAN HANSEN ET AL., *THE LONG-TERM ECONOMIC BENEFITS OF WIND VERSUS MOUNTAINTOP REMOVAL COAL ON COAL RIVER MOUNTAIN, WEST VIRGINIA* (2008), available at

[http://www.downstreamstrategies.com/documents/reports\\_publication/Wind\\_vs\\_mountain\\_top\\_removal\\_coal](http://www.downstreamstrategies.com/documents/reports_publication/Wind_vs_mountain_top_removal_coal)

[Coal\\_River\\_Mtn\\_Dec2008.pdf](http://www.downstreamstrategies.com/documents/reports_publication/Wind_vs_mountain_top_removal_coal_Coal_River_Mtn_Dec2008.pdf).

<sup>350</sup> See e.g., Marilyn Brown, et al., *Energy Efficiency in Appalachia: How Much More is Available, At What Cost, and By When?* APPALACIAN REG’L COMM’N., 4 (May 2009),

biomass fuel production.<sup>351</sup> Opportunities also exist for economic diversification in “the arts, education and workforce development, entrepreneurship, environmental restoration, health and community-based services, housing, infrastructure, philanthropy, sustainable agriculture, and telecommunications.”<sup>352</sup>

The proposed permanent mineral severance tax trust fund is an approach used elsewhere to promote diversification of mineral resource extraction economies.<sup>353</sup> A number of states have created similar funds that are being utilized successfully.<sup>354</sup> An awareness of the finite non-renewable limits of mineral resources and their inevitable exhaustion prompted fund enabling legislation intended to provide funding to support diversification and wean state economies from over reliance on mineral extraction.<sup>355</sup> According to proponents, such a fund “help[s] ensure a continued source of revenues for state and local governments, and would help build better infrastructure and create programs to strengthen the state’s workforce.”<sup>356</sup>

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available at [http://www.arc.gov/assets/research\\_reports/EnergyEfficiencyinAppalachia.pdf](http://www.arc.gov/assets/research_reports/EnergyEfficiencyinAppalachia.pdf).

<sup>351</sup> See e.g., *Pathways For Change*, *supra* note 334, at 133-137 (discussing the “JOBS Project and its Pyrolysis Proposal”).

<sup>352</sup> *Shape of Appalachia*, *supra* note 335, at 105, citing, APPALACHIAN TRANSITION, available at: <http://appalachiantransition.net/>. Two Kentucky citizens organizations, the Mountain Association for Community and Economic Development based in Berea (“MACED”) and Kentuckians for the Commonwealth (“KFTC”) cooperated in establishing the “Appalachian Transition Initiative” whose focus is “a more just, sustainable[,] and prosperous future in Central Appalachia.” *Id.* The Appalachian Transition Initiative maintains a website that provides information about and links to its research, plans, proposals, ideas, research, and success stories relating to individuals and organizations seeking to develop a diversified, sustainable Appalachian economy, see, Appalachian Transition, <http://appalachiantransition.net/>.

<sup>353</sup> See *Diversification*, *supra* note 200.

<sup>354</sup> *Id.*, at 9 – 13. States with funds of some type include Alaska, Montana, New Mexico, Utah, North Dakota, and Wyoming.

<sup>355</sup> *Id.* at 1.

<sup>356</sup> *Id.* at 14.

A fund proposed for West Virginia would require a one percent severance tax increase.<sup>357</sup> Revenues would be invested in a manner similar to that employed by public pension funds.<sup>358</sup> The annual return on the invested monies would be available for economic diversification, infrastructure, and related projects.<sup>359</sup> The proposal envisions five percent of the fund principal be withdrawn and spent on such projects. The remaining ninety-five percent would remain in the fund for investment and would grow the fund's principal from earned interest and yearly deposits of additional severance tax revenue.<sup>360</sup> The creation of a permanent trust fund would "generate substantial revenues for economic development and other beneficial uses far into the future" and, importantly, the fund's principal would increase in perpetuity even if coal mining and coal and natural gas extraction were to end after 2035.<sup>361</sup>

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<sup>357</sup> *Id.*

<sup>358</sup> *Id.*

<sup>359</sup> *Diversification, supra* note 200, at 14.

<sup>360</sup> *Id.* at 14-15 ("Investment of the principal should follow "prudent investor" guidelines in order to maximize the earnings available for programmatic use or reinvestment into the fund"). *Id.* at 14. Authors of the proposal project that:

Based on this projection and assuming an annual withdrawal of five percent, the permanent fund would allocate, for economic diversification purposes, \$31 million through 2015, \$583 million through 2025, and more than \$2 billion through 2035. Over this 22-year period, the average amount available for the state to invest each year would be \$92 million. In 2035, more than \$3.7 billion would remain in the permanent fund as a result of the revenues generated from coal and natural gas extraction.

*Id.*

<sup>361</sup> *Id.* at 14. The sustainability of the proposed fund in perpetuity is explained by its proponents:

The method by which income is withdrawn from the fund is critical. A percent of market value withdrawal schedule is typically used by endowment funds meant to operate in perpetuity. . . . One of the greater benefits of the permanent fund is that the principal and the annual investments will continue to grow even in the absence of new infusions of revenue, as long as the annual rate of return is greater than the five percent withdrawn each year. In other words, as long as the average rate of

Plans for developing “green collar” jobs include a proposal to develop a sustainable forest products industry. The focus of this initiative is the one million acres of land stripped of coal over three or more decades. Instead of achieving re-forestation as the approved post-mining land use, many coal operators “reclaimed” the mined land with invasive grasses and legumes vegetation, an approach to reclamation that was “easier, cheaper and quicker.”<sup>362</sup> Such vegetation controlled erosion but left the land virtually useless.<sup>363</sup> The result, according to one commentator was creation of “moonscapes” and “invasive grasslands [that] have become ubiquitous across central Appalachia.”<sup>364</sup>

Reforestation of orphaned lands with native hardwoods is seen as a source of jobs and a means to provide additional benefits, including sequestration of carbon, improved habitats, water quality, and overall environmental quality of an area.<sup>365</sup> The Appalachia Regional Reforestation Initiative (“ARRI”) is leading this reforestation proposal. Appalachian states, the U.S. Department of Interior’s U.S. Office of

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return continued to exceed five percent, the permanent fund would grow in perpetuity even if all extraction of coal and natural gas ceased.

*Id.* at 15.

<sup>362</sup> *Shape of Appalachia, supra* note 335, at 113 (citing Patrick Angel et al., *Forest Reclamation Advisory No. 1: The Appalachian Regional Reforestation Initiative* (Dec. 2005), available at [http://arri.osmre.gov/PDFs/Pubs/FRA\\_No.1.7-18-07.Revised.pdf](http://arri.osmre.gov/PDFs/Pubs/FRA_No.1.7-18-07.Revised.pdf)). See also, Aaron E. Maxwell, et al., *Modeling Critical Forest Habitat in the Southern Coal Fields of West Virginia*, 2012 Internat’nl J. of Ecol., at 1 (2012). (“Throughout the Central Appalachians of the United States resource extraction primarily from coal mining has contributed to the majority of the forest conversion to barren and reclaimed pasture and grass. The loss of forests in this ecoregion is significantly impacting biodiversity at a regional scale.”); available at: <http://www.hindawi.com/journals/ijeco/2012/182683/>

<sup>363</sup> *Id.* at 113 (citing Sarah L. Hall et al., *Topsoil Seed Bank of an Oak-Hickory Forest in Eastern Kentucky as a*

*Restoration Tool on Surface Mines*, 18 RESTORATION ECOLOGY No. 6, 834, 834–35 (2010).

<sup>364</sup> *Shape of Appalachia, supra* note 335, at 113.

<sup>365</sup> *Id.* at 112 (citing APPALACHIAN REGIONAL REFORESTATION INITIATIVE, GREEN FOREST WORKS FOR APPALACHIA 4 (2009), available at [http://arri.osmre.gov/Partnerships/green\\_forest\\_works/gfw.shtm](http://arri.osmre.gov/Partnerships/green_forest_works/gfw.shtm) [hereinafter ARRI]).

Surface Mining, the coal industry, academics, and researchers cooperate in ARRI's effort to seek restoration of high quality forests on reclaimed strip mined lands in the Eastern coalfields.<sup>366</sup> ARRI has initiated a "Green Forest Works for Appalachia" program, calling for planting 125 million trees on 175,000-stripped acres over five years and the attendant creation of 2,000 permanent jobs.<sup>367</sup>

Another job-creating proposal involves reclamation of thousands of unreclaimed, previously-mined lands that discharge significant amounts of pollutants into the regions' streams and rivers. According to a 2009 EPA report, more than 38,000 miles of streams in the central Appalachian region have been identified as impaired or threatened.<sup>368</sup> Many of these polluted waters run through coal-producing counties and the sources of their impairment are unreclaimed coal mines effluent discharges. According to Department of the Interior's Office of Surface Mining estimates, 511 million dollars will be required to complete reclamation of abandoned mine lands contributing to stream pollution. Approximately 2.5 billion dollars will be needed to reclaim all abandoned mined lands. This job-creating proposal recognizes:

While many old, polluting coal mines have been reclaimed, a huge amount of work remains to be done. Through reclamation of these sites, thousands of jobs will be created for engineers who design these projects, contractors who build them, and water quality technicians who monitor them. Perhaps more importantly, when they are complete, now-polluted streams will be turned from liabilities into

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<sup>366</sup> *Id.* at 112. ARRI's reforestation methodology uses native species to restore forests to their tree and plant species composition their pre-mining condition. According to ARRI, the same methodology applied to future mine reclamation ARRI will comply with SMCRA permit requirements and be cost-effective. Importantly, ARRI posits that the new forests will provide added value to landowners and provide protection of watershed, improved habitat for wildlife as well as other environmental services. *Id.* (citing, Jim Burger, et al., *Forest Reclamation Advisory No. 2: The Forestry Reclamation Approach*, 1 (2005), available at [http://arri.osmre.gov/PDFs/Pubs/FRA\\_No.2.7-18-07.Revised.pdf](http://arri.osmre.gov/PDFs/Pubs/FRA_No.2.7-18-07.Revised.pdf)).

<sup>367</sup> *Id.* at 113.

<sup>368</sup> *Creating Green Jobs*, *supra* note 340, at 3.

economic assets that can then help diversify economies and encourage the introduction of basic services in local communities across the region.<sup>369</sup>

Extrapolating from the results of a successful Pennsylvania program aimed at abating mining pollution in the West Branch of the Susquehanna River watershed, advocates of this job creation concept approach expect major job growth if a similar program were initiated in central Appalachia.<sup>370</sup>

Taking action to enhance the region's energy efficiency also offers the potential for developing sustainable central Appalachian jobs. A 2000 Appalachian Regional Commission ("ARC") report found that, within fifteen years, a program to create energy efficiency could generate 60,000

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<sup>369</sup> *Creating Green Jobs*, *supra* note 340, at 1. This proposal emphasizes the cost of water pollution and the benefits derived from abating harmful discharges:

While waterways are important community resources, polluted streams and rivers can be liabilities. Money is needed to restore them, and until they are restored, they are a drain on local economies, year after year. They hold back local development because people will generally avoid rivers that are visibly polluted, that smell, and that do not provide a suitable environment for recreation . . . . In addition to the jobs generated by designing, building, and maintaining the treatment systems, the resulting clean streams will help diversify local economies, leading to even more jobs and benefits for local communities. Businesses will be attracted to communities that can provide a high quality of life for employees or to rivers that can provide clean source water for drinking and for industrial processes. Individuals that seek out homes in close proximity to outdoor amenities will find communities with clean water attractive. Fishing and boating opportunities will improve.

*Id.* at 2, 11.

<sup>370</sup> *Id.* at 11. ("On a per-dollar basis, about 13 jobs would be created for every million dollar capital investment, and about 12 jobs for every million dollars spent on operations and maintenance. Translating these averages to Central Appalachia, if \$511 million is required to remediate water-related AMLs (abandoned mine lands) across the region, this would AMLs—whether or not they cause water problems—is about five times greater.")

new jobs.<sup>371</sup> Moreover, according to a different ARC report, the region also has significant potential renewable resources including wind, solar, small impact hydro, geothermal, biomass and biofuels.<sup>372</sup>

There are many other possible routes to a diversified economy that may evolve over time. State governments could use their power of condemnation to acquire large tracts of surface lands owned by land-holding companies that have been flattened and coal removed by mountaintop removal mining.<sup>373</sup> Those lands could be developed for sustainable forestry, which could contribute to an expanded forest products industry in the region. Robust funding and adequate staffing of public education and local health clinics are initiatives that would create a

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<sup>371</sup> *Shape of Appalachia*, *supra* note 335, at 106 (“Thus, there is great potential for Appalachia to diversify its economy, create a more sustainable economy, improve its environmental conditions, and improve the health of its citizens by investing in and developing energy efficient policies”) (citing MARILYN BROWN, ET AL., ENERGY EFFICIENCY IN APPALACHIA: HOW MUCH MORE IS AVAILABLE, AT WHAT COST, AND BY WHEN? 114 (May 2009) (hereinafter BROWN), *available at* [http://www.arc.gov/assets/research\\_reports/EnergyEfficiencyinAppalachia.pdf](http://www.arc.gov/assets/research_reports/EnergyEfficiencyinAppalachia.pdf). A program creating thousands of jobs developing energy efficiency in the region would be accompanied by more than \$27 billion in annual consumer energy savings in two decades. BROWN, at xvi.

<sup>372</sup> CTR. FOR BUS. AND ECON. RESEARCH, ENERGY EFFICIENCY AND RENEWABLE ENERGY IN APPALACHIA: POLICY AND POTENTIAL, 3-10 (2006), *available at* [http://www.arc.gov/assets/research\\_reports/arc\\_renewable\\_energy\\_full.pdf](http://www.arc.gov/assets/research_reports/arc_renewable_energy_full.pdf).

<sup>373</sup> When condemnation is used by the government to acquire real property the Fifth and Fourteenth Amendments require “just compensation” be paid the land owner. U.S. Const. Amends. V and XIV. In West Virginia tens of thousands of acres of land in the southern coalfield counties are owned by “land holding companies.” *See* ELLER, *supra* note 199. Historically, real property taxes of companies holding huge tracts of surface and minerals has been extraordinarily low. *See* ELLER, *supra* note 199, at 166. (“In fourteen West Virginia counties, twenty-five companies owned 44 percent of the surface land, yet they were assessed for only 20 percent of the area taxes . . . . On the whole, in central Appalachian counties, only 48 percent of total revenue came from local sources, compared with 65 percent nationally.”) Supposedly based on the fair market value, Government tax appraisals (supposedly at fair market value) can be viewed as establishing very low per-acre cost of just compensation, making condemnation of those lands for development economically feasible.

healthier workforce that is better educated to meet the demands of twenty-first century business and industry. Tax incentives, like those used to attract inner-city redevelopment could be utilized to reach a similar goal in mining communities. SMCRA's permit variance procedure allows mountaintop removal mining in lieu of returning the site to its approximate original contours, if and only if, the permit applicant proposes an industrial, commercial, residential, agricultural or a public facility development. This important SMCRA requirement has been largely ignored when regulators permit MTR mines. Requiring such development as a condition precedent to approving MTR mining would promote the statutes' goal of sustainable development on flattened mountaintops.<sup>374</sup>

All feasible possibilities can and should be pursued by coalfield community leaders in cooperation with State and Federal officials. Of course, funding and seed money for local projects are necessary to support the movement to diversify the region's economy.

## VI. CONCLUSION

At the beginning of the second decade of the twenty-first century, awareness of the new economic reality is slowly emerging among knowledgeable central Appalachian community leaders. Coal mining and its use to generate electricity will continue for decades while lower cost

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<sup>374</sup> In order to qualify for a variance from the AOC requirement, SMCRA requires that a mountaintop removal permit applicant propose a postmining land use that falls in one of five specific categories: industrial, commercial, agricultural, residential, or public facility (which includes recreational facilities). 30 U.S.C. § 1265(c)(3) (2012). In addition, the permit applicant must also prove that the proposed postmining use constitutes an equal or better economic or public use of the affected land as compared to the premining land use. 30 U.S.C. § 1265(c)(3)(A) (2012) An applicant seeking an AOC variance must also provide specific plans for its proposed postmining land use and accompanying assurances. 30 U.S.C. § 1265(c)(3)(B) (2012). Finally, SMCRA requires that the applicant demonstrate that the proposed use would be consistent with adjacent land uses, existing state and local land-use plans and programs, and that all other requirements of SMCRA will be met. 30 U.S.C. § 1265(c)(3)(C) (2012).



natural gas will gain increased market share. Depletion of economically minable reserves is projected within a few decades.

Faced with a burgeoning threat to the central Appalachian coalfield economy, the coal industry's response is denial. Denial of climate change science. Denial of the need to move quickly to end black lung disease. Denial of the need to mitigate the adverse effects of mountaintop removal and longwall mining. Denial of the validity of concerns about coal processing and coal combustion waste disposal. Denial of the need for concern over carbon dioxide, mercury and toxics, and other harmful air emissions.

In short, most in the coal industry and those aligned with it simply refuse to acknowledge the existence of numerous harmful externalities of the coal fuel cycle. Instead, an aggressive "war on coal" public relations campaign has been conducted with a goal of discrediting regulatory efforts to internalize some of coal's most problematic negative impacts. The ultimate resolution of the many industry lobbying efforts and litigation challenges to Obama administration regulatory initiatives is likely to have little bearing on the future of the coal-dependent rural Appalachian economy. Competition from natural gas and renewables will not disappear and the march toward depletion of the regions' remaining reserves will not reverse itself.

Remarkably, coal industry leaders have turned a deaf ear to the earnest pleas of some of coal's leading advocates. Senator Jay Rockefeller, for one, has spoken with uncommon candor in a political age dominated by poll-tested sound bites and pandering. Rockefeller challenges industry leaders to change course and join efforts to develop fact-based policies and programs to assist at-risk coal field communities to evolve beyond their historic reliance on coal:

It's not too late for the coal industry to step up and lead by embracing the realities of today and creating a sustainable future. Discard the scare tactics. Stop denying science. Listen to what markets are saying about greenhouse gases and other environmental concerns, to what West Virginians are saying about their water and air, their health, and the

cost of caring for seniors and children who are most susceptible to pollution . . . . Instead of finger pointing, we should commit ourselves to a smart action plan that will help with job transition opportunities, sparking new manufacturing and exploring the next generation of technology.<sup>375</sup>

An Appalachian Regional Commission assessment underscores the urgency of moving away from the failures of a century of coal's economic and political dominance of rural mountain communities' economy:

[H]igh rates of unemployment, disability, and poverty, along with low per capita income and college graduation rates, occur in a region with a wealth of natural resources, highlighting the need for economic diversification in the region. While Appalachia's resources have greatly benefited the nation, they have not generated the level of economic stability, employment, and prosperity that one might expect from a region so rich in natural assets and untapped human potential.<sup>376</sup>

Diversification does not mean an end to coal mining. Coal will remain an important source of energy at home and an increasing portion of the fuel is likely to be exported. But, to be clear, a diversified economy offers a path, perhaps the only path, for citizens of Appalachian coalfield communities to halt the century-long cycle of boom and bust and the endemic poverty and high unemployment that has accompanied it.

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<sup>375</sup> Rockefeller Senate Floor Speech, *supra* note 311, at S4317. With regard to Senator Rockefeller's reference to West Virginian's health concerns, numerous recent peer-reviewed scientific studies have identified correlations between coal mining and various negative health conditions experienced by populations living in proximity to coal mining operations. See, Coal River Mountain Watch: *Health Effects*,

<http://crmw.net/resources/health-impacts.php>

(Coal River Mountain Watch is a local West Virginia citizens' organization working to preserve the community's heritage and opposed to mountaintop removal mining).

<sup>376</sup> DAVID CARRIER, ET. AL., ECONOMIC ASSESSMENT OF APPALACHIA: AN APPALACHIAN REGIONAL DEVELOPMENT INITIATIVE REPORT, (2010) at 24 *available at* <http://www.arc.gov/images/newsroom/publications/EconomicAssessmentofAppalachiaJune2010.pdf>.

Economic diversity can significantly expand employment opportunities for youth growing up in rural central Appalachian coalfield communities. In the past, too many young people of the region have been forced to choose between mining-related work and low-paying service jobs or the difficult choice of migrating far from home to find a job offering a livable wage. Moreover, successful economic diversification should be accompanied by much greater educational opportunity, job diversity and attendant upward social mobility.

Clearly, the challenge of a rapidly changing energy market demands development of a rational, coherent plan for economic diversification of Appalachian coalfield communities. The transition from a largely coal-based economy will require broad good-faith cooperation of civil society including, employers, politicians, policymakers and unions. One leader of a coalition of unions and the environmentally concerned cogently warns that diversification must be “about organizing communities to proactively develop the jobs of the future in a way that the transition from producing energy with one set of resources is phased in sensibly over time and in a way that doesn't disrupt workers.”<sup>377</sup> Politicians and policymakers rising to this challenge will honor coal miners, their families, and the communities whose sacrifices have helped power and build a nation. Absent such planning and action, those communities will become collateral damage of a divisive, unproductive and apocryphal war on coal.

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<sup>377</sup> Chen, *supra* note 313 (quoting BlueGreen Alliance Executive Director David Foster who also argues for “economic development and worker assistance programs to make sure that clean energy jobs actually replace affected jobs in impacted communities.”). *See also Economic Development Principles for Central Appalachia*, Central Appalachia Prosperity Project; available at: <http://www.climateactionproject.com/appalachia/#principles>