



Repairing the Damage: The costs of delaying reclamation at modern-era mines

Appalachian Voices
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The coal industry has declined precipitously in the last decade, raising the question of whether adequate regulations are in place to ensure that mined land is properly reclaimed. As more coal companies declare bankruptcy, fewer companies remain to take over mines, so the number of companies forfeiting reclamation bonds and deserting their cleanup responsibilities will only increase. In many states, the funds generated by bonding programs may fall short of the actual reclamation costs that are passed to state agencies and taxpayers.

A Problem Decades in the Making

The Surface Mining Control and Reclamation Act (SMCRA), passed in 1977, attempted to ensure mines would never again be abandoned. To accomplish this, the act includes requirements for reclamation quality and timeliness, and requires coal companies to obtain reclamation bonds. If a coal company abandons its reclamation obligations, the bonds are used by the regulatory agency to complete reclamation.

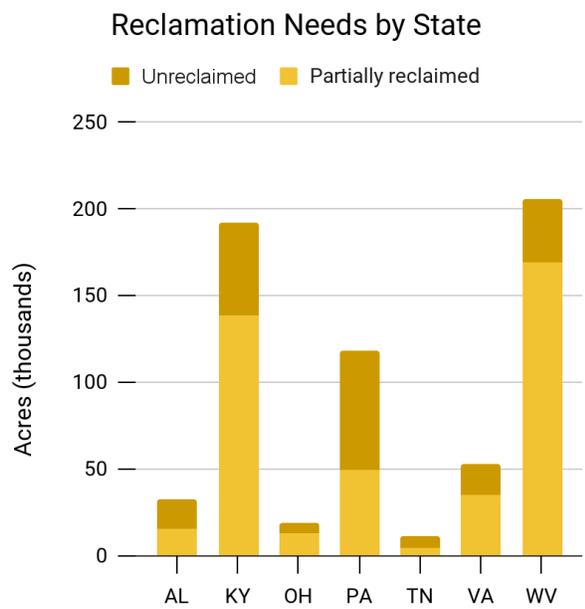
The Office of Surface Mining Reclamation and Enforcement (OSMRE) has given states significant leeway in designing bonding programs. As a result, states have implemented bonding mechanisms that are not sufficiently secure and have estimated bond amounts that may not cover actual reclamation liability. Now, we may be facing a new wave of modern abandoned mines.

Outstanding Reclamation

Using state and federal reclamation data, we have estimated the amount of outstanding reclamation at active SMCRA permits for seven Eastern coal mining states: Alabama, Tennessee, Virginia, Kentucky, West Virginia, Ohio, and Pennsylvania.

We have categorized the acreage as unreclaimed and partially reclaimed, where unreclaimed land has had mining activity and no record of significant reclamation, and partially reclaimed land has some record of reclamation progress.

Across the seven-state region, approximately 426,000 acres of mined land have been partially reclaimed and 207,000 acres are unreclaimed, for a total of 633,000 acres in need of some degree of reclamation.



Estimated Reclamation Liability

State and federal agencies have not done a region-wide analysis to estimate total outstanding reclamation liability. Total outstanding reclamation costs depend on a variety of factors, including the amount of highwall requiring backfilling, the amount of regrading needed, the number roads and ponds to remove, the amount and type of revegetation needed, and any long-term water treatment needs.

We estimated a rough cost of outstanding liability across the region, based on average reclamation cost per acre from independent analysis of surface mines, surface features of underground mines, and coal processing facilities. We included the cost of land reclamation and of long-term water treatment.

The total estimated cost of outstanding reclamation is \$7.5 to \$9.8 billion dollars across all 7 states.

Bond Shortfalls

At this point, it is not possible to estimate how much of this outstanding cost will be covered by the responsible coal companies, and how much will need to be covered by bonds. Total available bonds across the seven eastern states amount to about \$3.8 billion dollars. But bonds are not equally available across states, or even across mine permits – permit-specific bonds are only available to single mining permits, and some state bond pools only allow certain companies to participate in the pool.

Comparison of Estimated Reclamation Costs and Available Bonds



We know that not all reclamation will be completed by coal companies, as we are already seeing large-scale mine abandonment by several companies in Kentucky and West Virginia. Bonding systems in those states are already at risk of failure.

Jobs

The coal industry across the seven Eastern states has lost about 27,000 jobs over the last 10 years – a decline of about 46%. Addressing the reclamation backlog could put a substantial number of people back to work. If the remaining 633,000 acres in need of reclamation were reclaimed, this would create between 23,000 and 45,000 job-years across the Eastern states. Proper mine reclamation could have significant positive economic impacts, and contribute to methane mitigation, carbon sequestration and climate change resilience.



Photo of a West Virginia surface mine, courtesy of the Kanawha Forest Coalition.

Recommendations

While demand for coal will remain far below former levels, and many companies are likely to default on reclamation obligations, there are still many steps state and federal agencies can take to mitigate this situation. The following measures would increase the total amount of reclamation completed by coal companies, and improve the quality of reclamation.

1. OSMRE should work with states to complete a nationwide inventory of outstanding reclamation needs and costs at all mining permits, and make this data publicly accessible.
2. OSMRE should require full-cost bonding and disallow alternative bonding structures, including self-bonding and pool bonding.
3. Regulatory agencies must enforce reclamation requirements more strictly, ensuring timely cleanup is taking place and that coal companies are not idling mines to delay fulfilling their obligations.
4. Regulatory agencies should plan for long-term water treatment. Some mines create water pollution that must be treated over many decades. Funding mechanisms, financed by coal companies, should be created to provide treatment costs as long as treatment is needed.
5. To address mines where permits have already been forfeited but where bonding will not cover the full cost of reclamation, the federal government should fund a program to make up for bonding shortfalls, and ensure high-quality, timely reclamation. Projects proposed for funding should have high reclamation standards that can be completed in a timely manner, and that take the needs and desires of the surrounding communities into consideration. Such a program should not act as a coal company bailout – it should not further incentivize companies to offload reclamation obligations by transferring mines to subsidiary companies or by declaring bankruptcy.

For more information, including methodology and sources, please read our full report – [Repairing the Damage: The Cost of Delaying Reclamation at Modern-Era Mines](#).



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