

COVER STORY

COAL ON A ROLL

PLUNDERING AMERICA TO POWER THE ASIAN BOOM

BY GEORGE BLACK



WHEN WARREN BUFFETT AND HIS fellow Berkshire Hathaway director Bill Gates visited the Black Thunder coal mine last November, they did their best to keep a low profile. This is not an easy thing to do, however, when a fleet of nine private aircraft touches down at a small county airport like the one in Gillette, Wyoming, which bills itself, not without reason, as the Energy Capital of the Nation.

In the age of Twitter and Facebook, nothing stays secret for long. Even as the two famous visitors were putting on their hard-hats, miners were spreading the word, forcing the Oracle of Omaha to face the local press. All

he would say was that the visit had been “fascinating.”

Investment analysts say that *fascinating* is Buffett-speak for a really, really big deal, and that his visit to Wyoming’s Powder River Basin, which produces almost 40 percent of the nation’s coal, cannot be seen in isolation. Just a year earlier, Buffett had wrapped up the \$44 billion purchase of the Burlington Northern Santa Fe Railway, his biggest acquisition ever. Coal accounts for more than a quarter of the company’s revenues, and 90 percent of the coal it hauls is from the Powder River Basin. Ever since the nineteenth century, coal and railroads have thrived on this symbiotic relationship: a recent issue of *Trains* magazine called coal “railroading’s ultimate commodity and the industry’s best friend from start to now.” Buffett’s



THE LONG HAUL
A coal train sets off from Wyoming’s Powder River Basin, headed for a power plant in the Midwest.

holdings also include 90 percent of MidAmerican Energy, a utility that operates four coal-fired power plants in Wyoming. Now he was taking a firsthand look at the biggest coal mine in the country. Join up the dots. In particular, join up the dots that lead north from Black Thunder along the railroad tracks to Donkey Creek Junction, 10 miles or so east of Gillette. Most of the coal trains turn to the right here, headed for power plants in the heartland, from Michigan to Texas. But if what Buffett calls his “all-in wager” on railroads and coal pays off, more and more of them will turn to the left, headed for ports in the Pacific Northwest, and from there to Asia. It’s a grotesque idea on the face of it, digging up Wyoming to provide Asia’s booming economies with the dirtiest of all fossil fuels. But will the plan come to fruition? And if it does, how high will it rank in the hierarchy of environmental crimes?

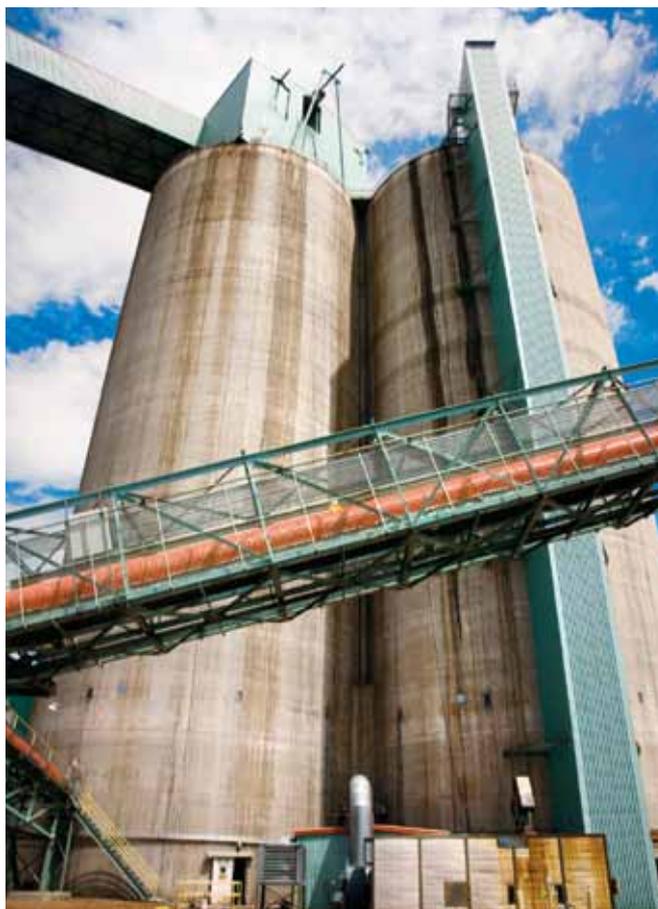
THE EAGLE BUTTE MINE, which belongs to Alpha Natural Resources, is barely a mile north of the Gillette airport. It is one of a trio of virtually suburban mines that make up the northernmost of the three distinct mining clusters in the Powder River Basin. I arranged to take a tour of Eagle Butte, meeting my guide at the Flying J truck stop in downtown Gillette. She was a chipper junior high school P.E. teacher named Shannon, who said she had been working for Alpha for the past eight summers. It’s the third-biggest coal company in the nation, she told me proudly. (Peabody Energy is number one; Arch Coal is second.) She promised lots of other “fun facts,” most of which seemed to involve extremes of size, weight, and volume.

Our first stop was a fenced overlook just off the highway. Below us was the huge west pit of the Eagle Butte mine. Brodningnagian electric shovels had already scooped out about 250 feet of overburden—the layer of dirt and rock that has to be removed to get at the coal seam—and were now dumping bucketfuls of coal into red-and-gray haul trucks of formidable dimensions. When full, each truck lumbered off with its 240-ton load, grinding its way at walking pace up an incline that led to the railhead, a mile or so distant.

Standing upright by the wire fence was a tire from a LeTourneau loader: 13 feet high, six and a half tons, \$38,000. A few yards away was a shovel bucket. You could have brought one of Shannon’s P.E. classes here on a field trip and fit them all comfortably inside, with room to spare for the teacher and a couple of parents. “That’s the baby bucket,” she said. “The ones we use now are much bigger; they can scoop up 140 tons at a time.”

We drove off to see the rest of the mine. More trucks were dumping

their loads into an underground crusher, which reduces the lumps of coal to pebble size. From there the coal passes to a conveyor belt that slants upward at a 30-degree angle to feed a towering storage silo. The silo is 210 feet tall, Shannon said, continuing with the fun facts. A train was inching its way through a gap in the base of the silo, loading up. Each car carries about 117 tons of coal, she said. A “unit train” can have as many as 140 cars, hauling more than 16,000 tons in all. Between 70 and 85 of these mile-and-a-half-long centipedes leave the Powder River Basin each day, carrying enough coal to supply almost a quarter of the nation’s electricity. The words *China* and *India* never passed her lips.



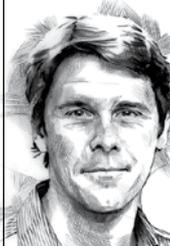
THINK BIG: Silos such as these at the Eagle Butte mine in Gillette, Wyoming, can store as much as 17,500 tons of coal and stand taller than a 20-story building.

LAST DECEMBER, BARELY a month after their trip to Black Thunder, Buffett and Gates met privately with President Obama. The White House said they discussed the economy, few details given. A month later Obama gave his State of the Union address, in which he laid out a global energy strategy that some call “all of the above.” Nestled among wind, solar, nuclear, and natural gas was that uniquely slippery phrase “clean coal.” Then, in March, Secretary of the Interior Ken Salazar flew to Wyoming to announce that the Bureau of Land Management (BLM) would hold four “competitive” sales (see “Why Coal Is So Cheap,” opposite) for new leases on 758 million tons of Powder River Basin coal. These would be the first of a dozen such auctions over the next three years, with as much as 3.7 billion tons of coal eventually up for grabs.

Very little of this, however, would be for domestic consumption. Although worldwide energy-related CO₂ emissions rose more last year than at any time since 1969, and the use of coal grew faster than that of

any other fossil fuel, U.S. demand has actually flatlined. In 2000 coal accounted for just over half of our electricity supply. By 2010 it was down to 45 percent. Large banks and insurance companies, uncertain about a future carbon-constrained world, are increasingly reluctant to underwrite the huge investment—as much as \$3 billion—required to build a new coal-fired power plant, which can have a lifespan of 50 years.

Asia is a different matter. Historically, the global coal market has been famously volatile. But companies like Peabody and Arch Coal are convinced that Asian demand has triggered a “supercycle” that will last at least 20 years, and talk in the industry is of exporting more than 100 million tons annually. The pivotal moment came in 2008, when China, which now uses almost half of all the coal burned on



THEO SPENCER

Senior advocate with NRDC's climate center, based in New York City, working to advance clean energy policies

the planet, became a net importer for the first time. Demand in India, though starting at a much lower point, is rising even more rapidly and is likely to go on rising long after China's appetite for coal levels off, which is predicted to happen sometime after 2030.

To many people, Obama's "all of the above" sounded like a capitulation to King Coal after climate legislation came to grief last year in Congress. But the strategy has deeper roots. First of all, the federal bureaucracy is notoriously prone to inertia, and the wheels of the BLM, which is responsible for granting mining leases, grind more slowly than most. The leases announced in March were not a new idea: the coal companies had applied for them at least five years ago. So the Obama administration didn't push the plan forward; it simply chose not to pull it back.

Nor is the commitment to "clean coal" anything new. In 2009, when the Nobel Prize-winning clean-energy guru Steven Chu was nominated to be secretary of energy, there was great excitement at his statement that coal was his "worst nightmare." This eminently quotable phrase sat well with environmentalists, but the corollary did not. Given coal's abundance, Chu went on, India, China, the United States, and other major consumers were not going to stop burning the stuff any time soon. And so, he said, "it is imperative that we figure out a way to use coal as cleanly as possible." That means working closely with China (and increasingly with India, too) to minimize the harm done by burning coal that is going to be burned anyway.

One quirk of this story is that Warren Buffett has no more love for coal than does Steven Chu. What appeals to him about railroads, he told Charlie Rose a week after buying BNSF, is that they are so environmentally friendly—"far, far more attractive in terms of global warming than using trucks." But what about all the coal they carry? Rose asked. "We will wean ourselves off coal over time," Buffett answered. "We can't change that next week or next month or next year, but we will reduce it over time, and we should reduce it over time."

An odd set of stars have come into alignment here, in other words, and the muscle power of those involved is formidable: the federal government, which sees coal as an unpleasant but inescapable reality; the country's leading investor, sitting on assets of \$372 billion, who dislikes coal but won't turn up his nose at a 20-year windfall for his shareholders; the big coal companies, which want to sell as much of their product as they can; and the world's two most populous countries, which also happen to be the world's two fastest-growing economies.

But exporting all this coal means building a chain, and a chain is only as strong as its weakest link. The coal must be dug up; railroad lines must be upgraded to carry huge new volumes of freight; communities along the way must accept the round-the-clock clank and whistle and disruption of coal trains; and port facilities that don't yet exist must be built in the Pacific Northwest, a region that is no friend to fossil fuels. Environmentalists will fight the plan at every stage, with the passion and vehemence that only coal can provoke. Will they find, and break, the weakest link in the chain?

THE BIGGEST MINES IN THE POWDER RIVER BASIN—which is another way of saying the biggest mines in the country—lie about 50 miles south of Gillette, and I went out to see them with Shannon Anderson, a lawyer with the not-for-profit Powder River Basin Resource Council. We headed down Highway 59, passing over dribbles of ditch water with names

How can the largest coal-producing region in the country not be classified by the federal government as a coal-producing region?

The Powder River Basin in Wyoming was certified as a "Coal-Production Region" between 1979 and 1990 because of the vast amounts of coal there and the extent of mining taking place. In 1990, the Bureau of Land Management decertified the region because mining activity had briefly decreased. But today it supplies more than 40 percent of our domestic coal and is home to the 10 largest mines in the country. So it was more than a little bizarre that the BLM earlier this year denied a petition from environmental groups to recertify the region. Certification would mean managing this public resource in the public interest, with greater environmental review, more competitive bidding for leases, and, one would hope, a livelier public debate about where more mining is appropriate. Makes sense, right? In denying the petition, the BLM said that the current system provides an "optimum" public return and need not be meddled with.

What are the implications from an economic point of view?

A cynic might say that the BLM was just doing the coal industry's bidding. Without certification, it's the coal companies themselves that define new or expanded lease proposals, not the BLM. Because a new lease usually makes economic sense only for the company proposing it, the bidding process is rarely competitive. So the price of this coal is kept artificially low, helping to box out less-polluting energy sources from the market. American citizens, through the federal government, own this resource. But taxpayers are being short-changed—thanks, ironically, to the federal government.

What about the new leases that were announced in March?

Coal from the Powder River Basin now goes for about \$14 a ton. That adds up to a lot of money when we're talking about billions of tons. The BLM claims that these leases and this price reflect the "fair market value" they are required by statute to get for our coal. But how would they know? No one has conducted a serious, independent evaluation of the Interior Department's fair market value program in more than a decade. Right now NRDC is in the midst of such an examination. Once we've finished, we should have a solid foundation for proposing—and advocating for—reforms to the current process.



like Porcupine Creek and Rattlesnake Creek, before turning east onto a confusing maze of dirt roads. The topographical atlas didn't help much. Roads that were supposed to be on the left were on the right; another seemed to run at a 90-degree angle to the direction shown on the map. "It's easy to get lost out here because the mine companies are always moving the roads," Anderson said.

This is no one's idea of an iconic western landscape; it may be Wyoming, but it's not the Tetons. The topography is altogether more subtle: grassland and sagebrush punctuated by low-shouldered buttes and odd conical hills like miniature volcanoes. We saw few signs of life other than the occasional pronghorn and her wobbly-legged calves. Yet for all its starkness, the land had its own understated beauty. Much of it was the vast magnificence of the sky, which was filled on this June morning with monumental layer cakes of cumulus, deep purple-gray shading into sunlit tendrils of snowy white.

During the Paleocene and Eocene this was all swamp: thus 65 million years of compacted vegetation, thus coal. For centuries the land smoked and smoldered from underground methane fires, to the wonderment of Sioux and Cheyenne warriors and early settlers. But then someone realized that beyond being an object of curiosity and geological instruction, there was a force here that could be harnessed to power the nation.

The real irony of the modern coal boom in the Powder River Basin is that it is a product of the Clean Air Act and, in particular, the 1990 amendments, which took aim at power plant emissions of sulfur dioxide and nitrogen oxides, the main causes of acid rain. The appeal of Wyoming coal is that it contains less than half of 1 percent sulfur; coal from the Appalachians can have anywhere from 3 percent to 10 percent. (This is also part of the appeal of Powder River Basin coal to China and India,

A CHANGING LAND For one small boy, this 240-ton haul truck could be part of an adventure playground for giants. For L. J. Turner, right, whose ancestors have raised cattle in Wyoming for almost a century, coal means the end of an era.

whose major cities are choking from airborne pollution.) The downside is its lower energy value, as measured in British thermal units (BTU). But that is still far outweighed by its other advantages: the seams are extraordinarily thick—as much as 120 feet—and they are close to the surface, which means that the coal can be cheaply strip-mined. The market price of Appalachian coal is five times higher.

The most perverse thing about the Powder River Basin, Anderson told me, is that since 1990 the federal government has not classified it as a "coal-production region." Many environmentalists, such as Jeremy Nichols of WildEarth Guardians, who has fought to reinstate the designation, claim that this limits environmental review to the impact of individual leases, not the cumulative effect of all mining in the region: "fugitive emissions" of dust, methane, sulfur dioxide, and nitrogen oxides; the depletion of shallow aquifers in the coal seams; loss of wildlife habitat; the difficulty of reclaiming mined land; and the greenhouse gas emissions from all those shovels, trucks, and trains.

Anderson and I drove on for miles through the empty country. A colossal dragline, first cousin to the electric shovel I'd seen at Eagle Butte, would suddenly rear its head, half-concealed by ziggurat piles of overburden. At intervals there were fences and locked gates with signs that warned us to keep clear of blasting operations and to avoid contact with the toxic clouds of dust. When people first complained about these "orange clouds," I had been told by a woman named Karla Oksanen, who lives next to the Rawhide mine in Gillette, "the companies



told us not to worry. Nitrogen was harmless. ‘There’s even nitrogen in Viagra,’ they said. ‘Ha ha.’”

Eventually Anderson and I came to the huge silos at Black Thunder, where four unit trains occupied the curving tracks of the loading loop, two returning empty and two full and ready to roll, carrying a small portion of the 120 million tons of coal that the mine will produce this year—a quarter of the region’s entire output. But after that came more miles of grass and sagebrush, with few signs of human habitation. “As you can see, no one is really around,” Anderson remarked. “So it’s easy to make this an energy sacrifice zone.”

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coverage of coal in his online
column. onearth.org/theedge

A FEW PEOPLE DO HOLD ON, LIKE L. J. TURNER, A 70-year-old rancher whose family homesteaded here at the end of World War I. A couple of days after my tour of the mines, I drove out across more miles of wild and empty land to visit him at his ranch, which is called Turnercrest. We went down to his basement, a kind of private museum testifying to his attachment to the land and its history. There were fossils and arrowheads and guns and posters for old movies like *Cattle Queen of Montana*, starring Barbara Stanwyck and Ronald Reagan.

The Powder River Basin has always been defined by mineral extraction, Turner told me. “Back in the 1950s, when the whole country was going atomic, people used to fly over and parachute in to stake uranium claims,” he said. “There was one rancher up on Pumpkin Buttes who brought in riders with Winchesters to keep them out.” After uranium came coal, and then coalbed methane.

Over time, Turner went on, the ranch grew to 30,000 acres, much of

it on U.S. Forest Service land leased for grazing. It has since dwindled to one-third that size, with 200 cattle and 800 sheep sprinkled across the treeless prairie like pepper grindings. The mines constantly nibbled away at the edges. “If you have leased public land,” he said, “the Feds come in and say, sorry, that’s going to be a coal mine over there—too bad about you.” At the same time, few ranchers can resist the blandishments of the coal companies when the offer comes to buy their deeded acreage. When I mentioned this later to Greg Schaefer, vice president for external affairs at Arch Coal, he laughed. “We’re the best retirement plan in the world for these guys,” he said. “When you see the mines

coming, you have a long time to ponder your estate planning. One woman told us, ‘Honey, I’ve been waiting for this call for 35 years.’”

L. J. Turner never brought in riders with Winchesters, but a few years ago he did run for the state senate, speaking out against the fossil fuel industry. This is not generally considered a winning platform in Campbell County, Wyoming. The state depends on coal for 97 percent of its energy, and well over half of that energy is plowed right back into the extraction of more coal and gas to produce more energy to produce more coal, and so on, in a kind of closed loop. “People won’t vote against their own payroll,” Turner said. Needless to say, he lost.

If the mines were the first link in the coal chain to Asia, it felt like a solid one. Coal seemed an unstoppable force here, and people like Turner were movable objects. “You know,” he said as I got up to leave, “the Gillette paper was just boasting that the coal mines were so big that the astronauts could see them from the space station, all lit up at night. Apparently this is something that’s supposed to make us proud.”

NEXT MORNING, BACK IN GILLETTE, I HAD BREAKFAST with Wendy Hutchinson, who is the regulatory affairs manager at Arch Coal's Black Thunder mine and is all over YouTube, courtesy of the industry-funded American Coalition for Clean Coal Electricity. In one video, she talks about the challenge of reconciling her ideals as an environmentalist with her work for the nation's second-biggest coal company. To say I was skeptical would be an understatement.

Call me gullible, but in two hours of animated conversation I saw not a hint of insincerity. Hutchinson spoke with the kind of passion I was used to hearing from environmentalists; if she was a fake, she was the best I'd ever met.

She grew up in Ohio, she told me, camping, rock climbing, "the total Girl Scout." Troubled by the landscape of her home state, which was disfigured by abandoned and unreclaimed coal mines, she headed out to the Powder River Basin, "thinking I'd be in a better place working inside the door than banging on it from the outside." Hutchinson and her husband bought a ranch north of Gillette, where they keep 150 head of buffalo. She said she'd like the mined areas to end up looking the way her ranch does, that reclamation is a personal mission as well as a professional obligation. "Philosophically, I recognize that we're not here forever," she said. "We're just *borrowing* the land." In fact, she aspires to make the land more economically productive after mining than it was before the coal companies arrived.

But turning philosophy into practice, she admits, is not always easy. The 1977 federal law that governs the operation of coal mines has an inelegant acronym—SMCRA, for the Surface Mining Control and Reclamation Act—and stringent standards. When a company opens a mine, it must post a bond equivalent to the estimated cost of reclaiming the disturbed acreage. If the company goes out of business, the bond defaults to the state, which then has the means to carry out the reclamation itself. Before the bond can finally be released, the mined area must be restored to its "approximate original contours" (with exceptions made for some mines, including Black Thunder, where the overburden is especially thin). Vegetation, wildlife habitat, and hydrology must all be in healthy condition. Reclamation is also supposed to be "as contemporaneous as possible"—in other words, an acre healed for an acre harmed. However, the reclamation record is dismal and not getting any better.

"Before you can get final bond release, a whole bunch of questions have to be answered," Hutchinson explained. "Is the seed mix right? Is the vegetation thriving? Have any wetlands been restored? Have the access roads been removed? Is the groundwater good?" All that can take many years. The federal Office of Surface Mining says that more than 162,000 acres have been disturbed by mining in Wyoming; barely 4 percent have cleared the final reclamation hurdle. But even then, a rancher like L. J. Turner does not believe that the land can be restored to its original condition, at least not in his lifetime.

"They say they'll give the land back to you the way it was, but it doesn't happen," Turner had told me. Some of the cattle that used to graze on the land taken from Turnercrest by the mines are in the Black Hills now, others are in Nebraska and Colorado, and none of them are coming back. One big reason is that the coal seams contain shallow aquifers; when the coal is removed, so is the water. "We used to have spring holes where you could fish up and down the creek for black bullheads," Turner had said. "There used to be a world of



willows and wild rosebushes in the pasture. As a kid I used to go down there to hunt cottontails. But that's all gone now."

STILL, YOU CAN DIG UP ALL THE COAL YOU WANT, AND load up enough railcars to encircle the globe, but unless you can haul it to the Pacific and put it on a ship, the whole enterprise will be for naught.

Warren Buffett's Asia-bound coal trains would travel west from Donkey Creek Junction, up the valley of the Yellowstone River through Montana, from there to Sandpoint, Idaho, and Spokane, Washington, and thence to the Columbia River, hugging the Lewis and Clark Trail for much of the way. Sustaining such a massive increase in traffic would demand a comprehensive upgrade of the BNSF infrastructure—meaning new track, new sidings, bigger trains, new rail yards and terminals. And all along the way there are people who would like very much to stop the coal trains in their tracks.

LOCAL PRIDE

L & H Industrial, a mining supply company in Gillette, displays the main icons of the Wyoming economy.



Heading out to the Pacific Northwest, I found that my own thoughts on the matter were more complex than I had anticipated. On one hand, I'd grown up in coal country myself, in a Scottish mining town that epitomized all that was most grim about the industry. There was a certain undeniable romance in the spectacle of the black-faced miners marching through town on gala day with their gaudy union banners, preceded by kilted pipe bands. But against that there were the brown coal fogs that almost killed my mother. There was my classmate Tom Pride, who fell into a flooded subsidence pit and drowned. There was the morning the sirens had gone off—the eve of my eighth birthday—to announce the explosion at the Lindsay Colliery, which left three men dead. All this had left me with the deep conviction that the only principled thing to do with coal was to leave the damned stuff in the ground.

Yet I was troubled by some of the rhetoric I heard along the Columbia River, which coupled the word *coal* with the word *China*—buzzwords that are guaranteed to stir a lot of righteous anger. There were two

assertions: one, that a ton of coal is a ton of coal and the carbon emissions are the same regardless of where it is burned; the other, that if we export coal to China it will burn more. But are those assertions necessarily true? To put it mildly, experts disagree.

Thomas Power, professor emeritus of economics at the University of Montana and head of an economic consulting firm in Missoula, gave me the classic supply-and-demand argument: the more coal we put on the world market the lower the price, and the lower the price the more will be consumed. Exports from the Powder River Basin would therefore reduce the incentives for China to invest in cleaner forms of energy.

Richard Morse, director of research on coal and carbon markets at Stanford University, had a very different view. Leaving aside moral and political qualms, he said, exports from Wyoming would have no discernible effect on how much coal China burns or on its investment decisions. He was puzzled that the debate about coal exports was focused so narrowly on China, with little attention paid to India.

At first glance the two Asian giants seem to face similar challenges: both have massive domestic coal reserves, but their coalfields are remote from the main population centers, and clogged transportation systems can't cope with the demand. But the similarity ends there. India's coal deficit is projected to reach 400 million tons a year by 2017, and most of the gap will be filled by imports. China is working hard to reform its markets and its infrastructure to reduce the price of its coal. "If they can bring down the cost of domestic coal," Morse said, "the incentive for imports will decrease."

Even then, he went on, "in terms of long-term planning, while price is a factor for the Chinese, it's often not their primary concern." Much more important is China's anxiety about energy security and the fact that its grossly polluted environment is a threat to future economic growth and political stability. Slowing carbon emissions is a strategic priority, and China has been able to throw virtually unlimited resources at the problem, experimenting freely with new technologies for both coal-fired power and renewable energy in a way the United States cannot.

The debate about China's plans for "clean coal" usually revolves around carbon capture and sequestration, in which CO₂ from coal-fired power plants would be captured before it is released into the atmosphere and then buried deep underground. But this is an expensive silver bullet, whose future remains uncertain. More immediately relevant is the new generation of coal-fired plants that China is bringing online. Without getting too technical here, such plants can operate with various kinds of combustion technology, from "subcritical" to "ultra-supercritical." A subcritical plant achieves about 30 percent efficiency; in other words, 70 percent of the potential energy is lost as heat. With ultra-supercritical, the percentage rises into the mid-40s. Operating at that level of efficiency, a typical 700-megawatt plant could emit almost 40 million tons less CO₂ over its lifetime.

China is phasing out its smaller, older, dirtier, and less efficient plants as rapidly as it can, and most of the new ones will use the most advanced technology. In 2006 the overall efficiency of China's "fleet" overtook that of the United States, and the gap is growing. Morse said that if China switched all its coal-fired plants to ultra-supercritical technology, it could reduce the carbon intensity of its power sector by

30 percent to 40 percent over the next 20 years. "China is the world's largest coal sector, the largest energy consumer, the largest source of carbon emissions," he told me. "The volume is so massive that even a 2 percent improvement in power plant efficiency could cut emissions more than all the solar panels in the world did last year."

BRETT VANDENHEUVEL, EXECUTIVE DIRECTOR OF THE Columbia Riverkeeper, steers clear of the word *China* and sticks to the trusted maxim "Think global, act local." A tall, rangy man in his late thirties, with a square jaw and piercing blue eyes, he looks as if he would be at home strapped to a hang glider or waist-deep in a trout stream.

From his office in the windsurfing mecca of Hood River, Oregon, we drove across to the north side of the Columbia. As we headed east, following the BNSF tracks as they serpented through the spectacular Columbia River Gorge, Vandenheuvel pointed out places that were particularly vulnerable to the increase in rail traffic. Yet at the same time, the railroad itself seemed vulnerable, a potential weak link in the coal export chain. A railroad in the end is no more than two narrow strips of steel. I thought of those old movies where the French Resistance blows up a couple of feet of track and disrupts the supply lines of the *Wehrmacht*. The good people of Washington State are not going to reach for the dynamite, of course, but it seemed to me that Vandenheuvel was smart to emphasize purely backyard concerns—public safety, blocked road crossings, delays to emergency services, interference with passenger trains, the possible health risks from dust blowing off the trains. Each of these issues might seem parochial in itself, but taken together they might galvanize the anger necessary to stop the trains. After all, all it took for David to defeat Goliath was one well-placed stone.

This escalating battle over the future of American coal may ultimately hinge on two grimy waterfront sites in Washington State. In the absence of federal carbon legislation, Vandenheuvel maintained, local and state-level work has become critical. In April, Washington governor Chris Gregoire signed legislation that will close down the state's only coal-fired power plant by 2025, and Oregon is moving in the same direction. "It excites me to bring this fight to the Pacific Northwest, where we've





WAITING THEIR TURN
Empty coal cars line up on the loading loop at Arch Coal's Black Thunder mine.

never had to deal with the power of big coal," Vandenhoevel said, as we stopped by the tracks in the small town of Bingen, Washington. "If local communities like this raise their voices, the state government might think twice about issuing permits."

Permits for coal ports, he meant, and he had two specifically in mind. Peabody Energy has its eye on Cherry Point, near Bellingham, north of Seattle; Arch Coal has designs on Longview, 100 miles down the Columbia from Hood River and 65 miles from the ocean.

Longview, an old industrial and logging port, is one of a pair of towns—the other being Kelso—divided by the Cowlitz River. Storefront signs convey the flavor of the place: "Advance Payday—up to \$700 Cash Loans!" and "Jail Sucks—Bail Bonds." Unemployment here is about 11 percent, and there was some excitement last year when a company named Millennium Bulk Logistics, a subsidiary of the Australian corporation Ambre Energy, came to town. Millennium requested a shoreline permit to operate a multipurpose export and import facility on the 416-acre site of a former Alcoa aluminum plant, next to a deepwater shipping channel and the giant Weyerhaeuser paper mill. Among the commodities Millennium said it planned to ship was a modest amount of coal, 5.7 million tons a year. The company agreed to comply with a list of conditions drawn up by the Cowlitz County commissioners to mitigate the environmental impact of the project, and in November the permit was approved. End of act one.

The chairman of the commissioners, George Raiter, told me that he had no misgivings about the decision. "This is private property, and we have no legal right to keep out a company that we don't like," he said. "Look, you have to be realistic. Personally, I'd rather not have coal. We'd prefer to have Intel or Google here, but we don't have that choice. This is a mill town, always has been. It's hard to expect Google to move in across the street from Weyerhaeuser."

Two local women, members of an organization called Landowners

and Citizens for a Safe Community, took me to look at the Millennium site. Gayle Kiser, the group's president, lives on a 150-acre farm where she raises chickens and cows, keeps bees, and makes home-brewed beer. Sandy Davis, the secretary, is married to a former welder at the Alcoa plant. "I'm a certified country girl," Davis said, "and she's a certified country girl." Both of them were wearing red buttons the size of drinks coasters with a slash through the word *coal*.

"This was always a headache property," Davis said, as we walked around the fenced perimeter of the proposed coal port. It was not a pretty place. When Alcoa shut down its aluminum operation, a company called Chinook Ventures moved in, promising to clean up the contaminated site. In fact, Chinook was fined repeatedly for failing to control chemical emissions, for improper storage of hazardous materials, and for spilling petroleum coke into the Columbia. Chinook left in 2009, and in came Millennium, which presumably couldn't be any worse.

Three weeks after the approval of the permit, a group of environmental organizations, including Earthjustice and the Columbia Riverkeeper, filed an appeal. They argued that the county commissioners had interpreted their mandate too narrowly; they should have taken into account the entire life-cycle impact of the coal that would be shipped through Longview, including the carbon emissions produced by burning it in Asia. Raiter told me he was amazed when the Washington Department of Ecology said it was sympathetic to this expansive argument and would intervene in the case.

This was where the real fun began. The discovery process turned up the kind of documents lawyers love, buried away, as such things often are, among thousands of pages of pabulum. In its confidential overview of the project, Millennium made it clear just how difficult it had been to find a suitable site. The major publicly owned ports—Portland, Seattle, Kalama, Tacoma—had all said no to coal. The only operating coal port in the region, Westshore Terminals, just over the

Canadian border, had no room for expansion. Arch Coal had agreed to ship a meager 2.5 million tons through another Canadian facility, but that was stuck away in northern British Columbia.

Reading Millennium's high-minded bromides about ethical business practices, integrity, and transparency, and then turning to its internal e-mail traffic, one could only chuckle. One message stressed that to sell the project to the state and the county commissioners, "the port should be referred to as a bulk materials handling port and not as 'primarily a coal port.'" The true intent, in fact, was "in the short and medium term [to] develop a 20mtpa [million tons per annum] coal terminal. This will be the largest coal terminal on the U.S. West Coast.... In the longer term Ambre plans to develop a 60mtpa coal terminal"—more than 10 times the amount it had mentioned to the Longview commissioners. Not a word of this in public, warned another e-mail: "We are at too sensitive a juncture to raise the plans... [T]he risk to the current permit path is too large."

Shamed by these revelations, Millennium withdrew its application. Yet given the potential profits to be made from the Asian boom, the big coal companies have shown no sign of being deterred by the fiasco. In January, even as the appeal was under way, Arch Coal laid out \$25 million for a 38 percent stake in the Longview project, and in March Peabody signed a contract to export up to 24 million tons a year of Powder River Basin coal through Cherry Point, although that site has no permit to operate either.

It's at Cherry Point that the next act in the drama is now being played out. The promise of jobs is richer there than in Longview, and organized labor badly wants the terminal. The state's Democratic Party establishment is impaled on a dilemma: its antagonism to carbon versus the political third rail of unemployment. And bigger financial interests are involved than in Longview: not only Peabody and Buffett's BNSF but also Goldman Sachs, which holds a 49 percent share in SSA Marine, the Seattle corporation that plans to develop the site.

On the other hand, said the economist Thomas Power, who follows regional politics as closely as he does world coal prices, big cities like Seattle and Portland have already taken a stand. "If other small towns in Washington and Oregon are desperate for the jobs," he said, "the bigger ports may tell them, we turned this business down and we don't want you to create the same mess we were trying to avoid."

In the opening salvos of the fight over Cherry Point, SSA Marine has shown the same lack of adroitness that Millennium displayed in Longview. It told the commissioners of Whatcom County, Washington, that all it needed was a revision to a shoreline permit it had been granted back in 1997. Well, actually, no, said the commissioners. That was for 8.2 million tons of "mixed bulk shipping" annually. This is for 54 million tons of coal, and the site is twice as large. As in Longview, round one to the environmentalists, although the battle is surely far from over.

AT THE END OF MY DAY IN LONGVIEW, GAYLE KISER drove me back across the Columbia, using the bridge that brings in commuters from Rainier, Oregon. It was the afternoon rush hour, and the bridge was jammed with traffic. In front of us was a fully loaded logging truck. "A lot of my friends are logging truck drivers," Kiser said. "I wonder how they'll feel when the roads are blocked all day by coal trains."

For anyone desperate to slow global warming and convinced that coal is the core of the problem, as it is, there seemed to be two paths to choose from, both impeccably principled. One was to tolerate no compromise with coal, to stop it whenever and wherever it raised its filthy head. The other was to work with anyone, anywhere, to mitigate its impact.

Nothing I'd seen on my journey from the Powder River Basin to the Columbia had lessened my aversion to coal; I still felt the same way I had as a kid of 8. It grieved me to think of L. J. Turner losing his land to pits that were ugly as sin, and of the pronghorn, the most graceful expression of wildness in the American West, losing a little more of its habitat. And it galled me to think of Peabody and Arch Coal getting their way through sheer muscle power, no matter how sincere Wendy Hutchinson was about restoring the mined land.

Intellectually, if grudgingly, I could see the logic of "all of the above," and I found Richard Morse's argument persuasive: that the future of the planet will rest more on influencing how China burns coal than on whether we sell them more of it. Coal might be our worst nightmare, but we live in a grossly imperfect world, full of bad choices.

Yet none of this means that we have to export the stuff. The bottom line, it seemed to me, was neither emotional nor intellectual but political. The fight against the coal terminals in Washington State is a line drawn in the sand. In the absence of federal legislation and a global treaty, the states that have held

fast on carbon are crucial. If Washington were to buckle to the pressure to build coal ports in Longview and Cherry Point, it would send the worst possible signal to the world about the firmness of our intentions.

As Kiser's car idled, immobile, midway across the bridge, I glanced over the parapet to the north, past the dirty plumes of smoke from the Weyerhaeuser plant to the dismal structures of the abandoned Alcoa aluminum plant, which might soon be piled high with coal. To the south was the publicly owned Port of Longview. Four colossal white objects lay in a row on the ground, bigger even than the trucks and draglines at the Black Thunder mine.

"Blades for wind turbines," Kiser said.

"Where do they come from?" I asked.

"Hard to say," she answered. "Could be Denmark. Could be China." Wind in, coal out: the word *irony* hardly seemed enough. 🐾



FAIR WARNING: At Peabody's North Antelope Rochelle mine, sirens give advance notice of blasting operations.

