

An email requests my input on the “Clean Coal Technology” symposium of August 2012 that was hosted by UW’s School of Energy Resources (SER) and sponsored by Wyoming’s governor and legislature. What can I say? The presenters struck me as prophets of a mistaken religion, sincerely preaching to the converted.

The mistaken religion advances the idea that a few strategically-placed buzzwords can whitewash coal, if not in actuality then in consumer perception, so that coal extraction, shipping, and burning may proceed as usual. Never mind that Wyoming coal exports have so overloaded the railway system, other states loudly object to the transport of our coal through their terrain: rail traffic has pitilessly disrupted the basic functioning of local communities—in the state of Washington, among others.

Furthermore, hundreds of tribal members from the Lummi Nation gathered in September 2012 to oppose development of a facility in Whatcom County, Washington, that would forward coal from the Powder River Basin. They ceremonially burned a check on the beach to make clear that no amount of money could buy their support for this project.

There is no such thing as “clean” coal. Coal extraction, shipping, and burning comprise irreversible ecological destruction, plus extensive damage to human health—and people everywhere are getting wise to the fact.

But Ah, my enemies and Ah, my friends! How the whitewash convinces us we may burn the candle at both ends and suffer no untoward consequences!

When announcement of the symposium first reached me, I emailed SER conference organizer Diana Hulme: “You seem to have no one speaking on environmental impact.” She replied that the researchers of the Clean Coal program are required to present their results publicly.

Ah, so. Because Wyoming politicians prefer not to confront any adverse effects of the practices they fund, it’s best not to mention these. The research and the symposium were financed with Abandoned Mine Lands money, which should have gone toward plugging dilapidated gas- and petroleum wells or reclaiming abandoned coal mines. “Private donors,” meaning vested interests, matched the funding.

The symposium proposed three “clean coal technology” possibilities: 1) altering unburned coal fuel so that it burns more cleanly (e.g., by removing moisture), 2) burning coal more efficiently (e.g., by oxygen-enriched combustion), and 3) cleaning up exhaust emissions from the flue gas, which can encompass removal of arsenic and mercury, or the reuse of hydrogen, or the sequestration of carbon dioxide.

All three sound good on paper. Researchers experimented with small-scale models that, with financial backing, could expand into full-scale testing. And that’s where it stands: computer models, small-scale experiments, theoretical applications. The supposed economic benefits of this or that approach, were it to come to fruition, is something everyone applauds. Meanwhile it’s business as usual for industry heavies and the

politicians doing their bidding.

I am not against researchers and their efforts. If one of these experiments someday works to reduce, e.g., smokestack emissions, more power to the researchers.

For example, Alan Bland of the Western Research Institute built a 1-megawatt coal burner prototype that can be retrofitted onto plants that burn Powder River Basin Coal, possibly achieving up to 90 percent carbon capture. The prototype uses a process that burns low-moisture coal in an oxygen-enriched environment. The method would recycle hot flue gases back to the first step of the process, which would dry out the coal, a necessary step because Powder River Basin coal is high in moisture. Perhaps Mr. Bland's finding will be useful to coal-burning utilities.

But the proposals for gasification struck me as impractical if not downright foolish. Joseph Hartvigsen of Ceramatec discussed his small-scale modular gasifier that could convert coal into "transportation fuels" and subsequent Fischer-Tropsch fuel synthesis. Wyoming exports coal at about \$10/ton, he said; if converted to liquid fuel, it would potentially earn \$800/ton of coal. He fails to account for the insane amounts of water such processes guzzle, nor has he paid any heed to derailments that have triggered huge chemical spills and massive blasts. Some communities with busy railways consider liquid-fuel (ethanol) tankers serious threats to their public safety. An Associated Press analysis of 20 years' worth of federal rail accident data found that, since 2000, ethanol tankers have been breached in at least 40 serious accidents.

These tankers, known as DOT-111, consist of steel shells that are too thin to resist puncture in accidents. The rail and chemical industries have committed to safer designs for new tankers but claim it's too costly to modify the tens of thousands of existing cars. In July 2012 in Columbus, Ohio, tankers blew up with such intensity that witnesses said it "looked like the sun exploded."

People get injured in these accidents. They die horrible deaths from ingesting the chemicals and from fatal burns.

Back at the symposium, guest speaker Fred Moore, formerly of Dow Chemical, wants to combine a small-scale high-temperature nuclear reactor with coal production in Wyoming to produce liquid fuels. A next-generation helium gas nuclear plant could convert Wyoming's 1.1 million tons of daily coal output, valued at \$10 million, into \$600 million worth of liquid fuels, he proposes. Again, no mention of water demands or transportation problems.

The crux of the conference was the la-la-land fantasy that coal can be converted "cleanly" into highly profitable products. Yes, but. Does not a university owe it to its students and constituents to provide the occasional reality check? Statistics on water and energy requirements? Estimates of the environmental and ecological costs of the practices? Transportation-accident scenarios?

SER's goal, according to Director Mark Northam, is "protecting and growing our state's revenue stream." Must it do so by serving up illusions of profit sans problems? Now that the federal government has cut off Abandoned-Mines funding, what are the chances that the illusions it spawned will vanish before they "convert" into profit mania?