The Flight from Coal in U.S. Electricity Production

In the late 1990s as the Montana Power Company exited the electric utility industry and headed for bankruptcy as a telecommunication company, Montana Power sold off all of its Montana electric generating facilities to Pennsylvania Power and Light. The utility that bought Montana Power’s electric and natural gas delivery system of pipes and wires, NorthWestern Energy, is now trying to buy back those Montana hydroelectric facilities.

“Repatriating” those hydroelectric facilities so that they serve Montana residents and are regulated by the Montana Public Service Commission might seem like a “no-brainer.” Why wouldn’t we want to do that?

However, as the Montana Public Service Commission has begun digging into the details of that proposed re-purchase of these Montana hydroelectric facilities, some interesting information has surfaced about what Pennsylvania Power and Light (or PPL) wanted to sell.

It turns out that PPL wanted to sell all of its interest in Montana’s electric generating facilities, not just the hydroelectric dams but also PPL’s interest in the Colstrip and Corette coal-fired power plants. NorthWestern’s evaluation of that whole set of Montana electric generators led to the conclusion that the coal-fired electric generators had a negative value while the hydroelectric facilities had a highly positive one. As a result, NorthWestern Energy only offered to buy the hydroelectric facilities.

Now some folks are suggesting that NorthWestern was imprudent in not buying
the coal-fired electric generators at bargain basement prices rather than going after the more costly hydroelectric facilities. Besides imprudently passing up a bargain, some are suggesting the NorthWestern was also disloyal to Montana’s coal industry and complicit with environmentalists in undermining the future of Montana coal mining. As one of the Montana Public Service Commissioners has repeatedly pointed out, Montana has larger coal reserves than any other state. Yet most of those Montana coal resources have yet to be developed.

If NorthWestern was imprudent or irrationally biased against coal, it is not alone in the utility world or the American investment community. PPL, itself, before putting its Montana generating assets up for sale, announced that it was planning to shutdown the Corette coal-fired power plant in Billings. Years earlier, electric utilities in Oregon and Washington agreed to stop burning coal in their largest electric generators, the Boardman and Centralia electric generating stations.

The U.S. Department of Energy’s Energy Information Administration recently reported that between 2010 and 2012 almost 13,000 MW of coal-fired generation had been retired. That is the equivalent of about 17 Colstrip 3 plants. The Department of Energy also projected that 60,000 megawatts of coal-fired electric generators, the equivalent of over 80 power plants the size of Colstrip 3 or 4, would be retired between 2010 and 2040.¹ Most of those power plants would be retired by 2016.

This rush to abandon so many coal-fired generators is tied to two sets of economic factors. First, cheap natural gas has allowed gas-fired electric generators to

displace what became more expensive coal-fired generators. As a result the older and less efficient coal-fired generators have been used less and less often.

Second, in 2015 these older coal-fired plants will be subject to EPAs Mercury and Air Toxics Standards that will require significant reductions in emissions of mercury, acid gases, and toxic metals. Achieving those reductions in toxic emissions would require these older coal-fired generators to install scrubbers or other technology to eliminate the toxic material they now dump into the air. Making substantial addition investments in cleaning up these older, dirtier, and less efficient plants, that are already only used part of the time, often just does not make economic sense.

Electric utilities are also planning to build almost no new coal-fired generators because of their economic cost and the risk of environmental regulation. As a result, while coal was responsible for 53 percent of electric utility generation in 2000, coal’s share of generation had fallen to 37 percent by 2011. Coal’s share is projected to settle at less than a third by 2040 while natural gases’ share of electric generation is expected to more than double to 35%, higher than coal’s share. Almost 93 percent of new electric generation will not be coal-fired over the next several decades.

An additional problem is that removing these toxic materials from the air we breathe does not make these toxic materials disappear. After being removed from the exhaust of the power plants, they are typically deposited as sludge in open ponds along with other waste products from the burning of coal. It is these coal wastes that back in 2008 broke free from TVA’s dam at its Kingston coal-fired generator in Tennessee, releasing over a billion gallons of sludge, inundating homes and pouring into tributaries of the Tennessee River. In early February of this year a similar massive release of coal
combustion products by Duke Energy into the Dan River polluted the water supply of Danville, Virginia. The Colstrip power plants have similar problems with their coal combustion sludge ponds that have been leaking into the ground for some time. State regulators and the EPA have only begun to investigate and try to control this new source of water pollution from coal-fired electric generators. Control of that water pollution and remediation of existing groundwater pollution will also be costly to electric utilities with coal-fired generators.

In that setting, it is not surprising that electric utilities are retiring existing coal-fired plants and investors are not interested in building new ones. But this is not because electric utilities are being imprudent or because Wall Street investors have become rabid environmentalists, quite the contrary. In a clear-headed and hard-nosed way these business people have evaluated the costs and risks associated with burning coal and made a rational business decision.

To modify a famous political slogan, “It’s the economics, stupid!”