People are talking about it in emails and all over the blogosphere – it turns out that coal-fired electric power is not as cheap as many people want to think it is.

In the Energy Policy Act of 2005, Congress directed the National Academy of Sciences to "define and evaluate key external costs and benefits—related to health, environment, security, and infrastructure—that are associated with the production, distribution, and use of energy but not reflected in market prices or fully addressed by current government policy." Now, the Congress has its report. While it exams a full range of energy options, the most stunning results relate to the use of coal to generate electricity.

The authors evaluated effects related to emissions of particulate matter (PM), sulfur dioxide (SO2), and oxides of nitrogen (NOx), which form criteria air pollutants. They monetized effects of those pollutants on human health, grain crop and timber yields, building materials, recreation, and visibility of outdoor vistas. Health damages, which include premature mortality and morbidity (such as chronic bronchitis and asthma), constituted the vast majority of monetized damages, with premature mortality being the single largest health-damage category. What they found out about coal plants was enough to make anyone sit up and take notice – over $60 billion in damages in 2005, alone. And that is just from the production of electricity. This figure does not include damages related to mining, transportation, or processing.

Perhaps the most important message had to do with the wide variation in damages produced per plant. The study found that the 40 worst polluting plants (out of a population of 406 plants) produced 43% of the damages. This is consistent with the conventional understanding that the dirtiest power plants create a huge percentage of the overall pollution. These plants are likely to be the older ones that lack best-available control technology – the same ones that will probably continue to belch foul air and lead to damages under a greenhouse gas cap-and-trade program, because it may be cheaper to buy carbon credits than to add scrubbers.

One has to wonder whether there is anything rational about continuously creating policies that allow the worst offenders to keep offending. Perhaps what we need to do is put the best air pollution and greenhouse gas rules in place and then shut down the top 40 – through injunction, or legislative requirement, or public buy-out. Of course one of the luxuries of thinking out loud is that you don't necessarily have to deal with political realities.