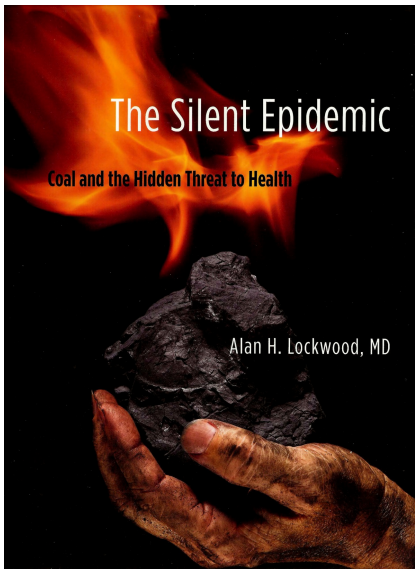
Book Review: The Silent Epidemic: Coal and the Hidden Threat to Health

by Blog Admin

February 7, 2013

*We will not find "exposure to burning coal" listed as the cause of death on a single death certificate, but tens of thousands of deaths from asthma, lung cancer, heart attacks, strokes, and other illnesses are linked to coal-derived pollution. As politicians and advertising campaigns extol the virtues of "clean coal", the dirty secret is that coal kills, argues **Alan Lockwood** in **The Silent Epidemic**. Lockwood addresses the big issues of global warming, health economics, and their policy implications, leaving **Ross Harvey** to recommend the book as a reference tool for answering critical questions of how to minimise the social costs of coal.*

The Silent Epidemic: Coal and the Hidden Threat to Health. Alan Lockwood. MIT Press. September 2012.



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The Silent Epidemic: Coal and the Hidden Threat to Health explores the negative externalities associated with the coal business, from extraction to combustion and everything in between. Author Dr Alan Lockwood approaches the issue with a physician's precision, showing how our collective demand for cheap electricity does more harm than good, as we fail to take into account the hidden costs of a coal-fired planet. Though many scientists and activists understand these costs, most people do not, which makes this book a useful entrant to the discussion. It avoids the hysteria of fringe environmentalists while still delivering a weighty verdict against the coal industry.

There is something in the *Silent Epidemic* for everyone, from health practitioners to economists to environmentalists to policymakers to barons of the industry itself. The book is an ambitious undertaking. Quantifying externalities, or the divergence between private returns and social cost, is a difficult exercise. It can be even more difficult to communicate the implications of such quantification. Perhaps Lockwood's biggest achievement, then, is to bring the gravitas of scientific evidence to bear in an accessible and largely compelling manner.

The book opens by marshalling evidence for the relationship between burning coal and its detrimental effects on human health. For instance, *The Lancet* estimates that 24.5 deaths are expected for each TerraWatthour of electricity generated by coal. An application of that data to the US case alone indicates that 50,000 deaths per year may be attributable to burning coal. In the United States, the dusty carbon meets approximately half the country's electricity requirements. In South Africa, my home country, the figure is closer to 92%. The collective global demand simply renders the social costs unsustainably high. There is thankfully good news in the opening chapter as well though; evidence is provided that policy interventions can make a significant contribution to reducing negative externalities associated with burning coal.

After exploring every hidden tunnel of the coal industry, the chemistry of its composition and combustion, and the deleterious environmental and health impacts of coal, Lockwood addresses the big issues of global warming, health economics and their policy implications.

Having shown considerable restraint to this point, the author reveals his frustration with those who deny global warming in the last few chapters. His disdain for the sceptics might be understandable, but I would

like to have seen him deliver his judgements more carefully so as to avoid the polemical responses they are likely to invite. For instance, the Intergovernmental Panel on Climate Change Fourth Assessment Report, reviewing six different models that have been used to predict the impact of changes in the atmosphere on temperatures and sea-level, found that the "likely range across the six studies… varied from a 0.3 degree increase to a high of 4.6 degrees" (p.171). This is a particularly diverse range, yet Lockwood does not comment on the high variance. He also approvingly cites a World Health Organisation (WHO) report that attributes malnutrition, diarrheal diseases, malaria, floods, and cardiovascular disease to global warming, and states that it "*caused* an increase of approximately 5.5 million disability-adjusted life years per year in that same time period" (p. 174). But such a strong causal statement is risky, as not all variables can be controlled for. Moreover, it tends to shift policy focus away from immediately pressing needs to something more abstract.

Political scientist Bjorn Lomborg argues that focusing on global warming as the primary policy object is unlikely to succeed. The key is to eradicate pollution, which is more achievable. Reduced global warming will be a by-product of such policy moves, not the result of focusing exclusively on the relatively abstract concept itself (no matter how much evidence exists in its favour). Either way, burning coal contributes significantly to global warming and is clearly a problem. The evidence is strong, but policy prescriptions require a clear head in light of competing priorities and scarce resources. Developing countries, for instance, find it difficult to justify expenditure on climate change adaptation and mitigation when unemployment and poverty remain the most immediate developmental challenges.

The penultimate chapter on energy and health care economics does an excellent job of quantifying those generally elusive social costs associated with burning coal. The author notes the difficulty of attributing health impacts to an environmental pollutant, but points to the best evidence available to show that the exercise should not be avoided. In a retrospective cost-benefit analysis (examining data from 1970 to 1990), economic "modelling predicted an annual reduction of 184,000 premature deaths, 674,000 cases of chronic bronchitis [and] over 22 million lost days at work" (p.195) as a direct result of the Clean Air Act. The EPA estimated a value of between $5.6 and $49.4 trillion for the monetized health benefits over that 20-year period. Again, the range is understandably large but even the conservative estimate is highly significant, especially given that the cost of complying with the Act has been estimated at only $0.5 trillion. Unfortunately Lockwood closes this chapter with an approving reference to the infamous Stern Report, which claimed that a failure to curtail greenhouse gas emissions could result in costs of 5% of the global GDP each year, "now and forever". The hyperbolic language alone should have warned to Lockwood to leave it out of his book.

The Silent Epidemic closes by examining the policy implications of the relevant evidence. This chapter could well be a book on its own. Scientific findings do not always translate directly into policy (as one might rationally expect). Clearly this frustrates Lockwood, and he touches (here and throughout the book) on how influential Republican money – or political trade-offs that President Obama is perceived to make with Congress – often result in sub-optimal policy. The author's emphasis on the need for pre-emptive policy, given the weight of evidence against mining and burning coal, is laudable.

As a point of departure for further research, I would like to see environmental economists draw on Lockwood's work to explore how to reduce negative coal externalities (without creating unintended negative consequences elsewhere). Lockwood runs the risk of turning from analysis to polemics when he talks about how "too many politicians do not think or see beyond the next election or campaign contribution" (p. 217). He is clearly right to criticise our over-reliance on coal for electricity, but we now need a robust examination of the alternatives – politicians are only part of the problem, neither is it specific to the US alone. As Lockwood points out, even as new, cleaner plants are being built in the States, the opposite is true in China. The field of ecological economics is still wrestling with the question of development at the expense of health and the environment in developing countries. No silver bullet technology yet exists to truncate that curve. Perhaps more research and development funding should be allocated in this direction rather than toward fighting global warming per se.

I greatly enjoyed *The Silent Epidemic*. It shall stay close at hand as a reference tool for these critical

questions of how to minimise the social costs of coal. For anyone involved in the relevant fields, or why they should never live near a coalmine or coal-fired power station, it is a must-read.

Ross Harvey is a Ph.D student at the University of Cape Town's School of Economics. His research focuses on the impact of Chinese economic involvement on economic wellbeing in selected African countries. He is particularly interested in whether natural resource wealth extraction in these investment deals will turn out to be positive for these countries' economic performance in the long run, or whether it will simply entrench rent-seeking political elites at the expense of local economic wellbeing. He works as a freelance researcher and was previously a research and communications staffer for the official opposition party in South Africa. He tweets @harvross and can be found on Academia.edu. Read more reviews by Ross.