

Carbon Emissions, Global Warming and Supply Chains

Is global warming real or a job creation scheme for out of work scientists? As long ago as 1888, the Swedish scientist, Svante Arrhenius suggested that rising levels of carbon dioxide would warm the planet. He estimated that a doubling of carbon dioxide would raise global temperatures by 5 degrees C. This is remarkably similar to modern estimates. The reason for his prediction is straight forward. Carbon dioxide (CO₂) absorbs short wave radiation (which means heat) coming in from the sun, but takes longer to radiate it back than most other gases in the atmosphere. So the more CO₂ in the atmosphere, the warmer it gets. Calculating the potential temperature increase is relatively straight forward. An analogy is if you heat your home, but gradually increase the insulation. As long as you put the same amount of heat into your home, the temperature will rise with the increasing amount of insulation. Eventually your home will become too hot to inhabit.

It has taken hundreds of millions of years to produce fossil fuels, the burning of which releases the carbon into the atmosphere in a few 10s of years.

So why is the topic controversial? Global warming started to be taken seriously by the general public and politicians in the 1990s when it became apparent that the planet Earth was beginning to heat up significantly and that there could be serious consequences for human beings if it was not halted. By the early part of this millennium, forecasts of a rise in global temperatures due to increasing amounts of carbon dioxide varied between 2 and 5 degrees C. The debate focused mainly on whether there were factors that might offset or magnify global warming. For instance, the oceans absorb CO₂ as do the worlds' forests. On the other hand, the permafrost of north west Siberia stores large amounts of methane, a much more powerful 'insulator' than CO₂, and if it starts to melt, global warming could be accelerated. Also, ice reflects heat back into space, so less Arctic ice also speeds up global warming. Those who argued against global warming argued that the Earth would compensate naturally whilst others argued that it would not. The latter group seems to have won the argument as the planet seems to be heating up at the top end of expectations.

Are the consequences really as bad as is made out? Only 5 years ago, forecasts suggested that the summer Arctic ice would disappear between 2050 and 2075. Now the odds are that it will all be gone by 2020. That will have a major impact on northern hemisphere weather. Climate zones will quickly shift. Within the next 50 years, regions that have little rainfall will start to have much more and others will have drought. Some places that have high populations will become almost uninhabitable. Sea levels will rise due to melting glaciers and expansion of the sea due to its rise in temperature. Cities close to the sea will be at serious risk of permanent flooding. Look at what has happened to New Orleans? Low lying countries such as the Maldives and large parts of Bangladesh may disappear. The

world could become a much less stable place and economic problems could multiply.

So where does procurement come into it? Firstly, procurement officers need to have an understanding of how their actions can impact on global warming. Statistics about vehicle emissions mean little, but a medium sized car will generate enough emissions over its lifetime to double the amount of CO₂ over the Wembley football pitch to a height of 60 metres. So only buy very fuel efficient cars. Trucks and aircraft can generate many times this amount of emissions. So keep supply chains short. Also, there are companies that can assess, very cheaply, the carbon footprint of your main suppliers and supply chains. Choose products and suppliers that have the lowest footprint. IT generates much CO₂, but there are many new products on the market, often from SMEs, that can reduce this to a fraction of more traditional solutions. Buying products made from 'sustainable' resources can reduce the carbon footprint, though claims may sometimes exceed the reality.

Buildings have huge carbon footprints. An old building has a footprint per square metre per year equivalent to the doubling of CO₂ to a height of 50 metres above the Wembley football pitch and even for the newest buildings it can equate to 10 metres. Government offices are required to have certificates showing their carbon footprint, so familiarise yourself with this legislation and try to influence your construction colleagues.

Finally, surely there is a link between carbon footprint and cost? Cutting back the carbon footprint in supply chains should usually save money – very apposite given the present economic climate.

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