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Greenness in Business and the City Transcript

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Greenness in Business and the City

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Good evening everyone, and welcome to this, the second of my lectures on environmental themes, which will explore some aspects of 'greenness' and business. By business, I am going to embrace 'The City' as well, which is certainly overambitious, but time requires. As a water scientist myself, a hydrologist, I am perhaps naturally somewhat rooted in an approach to environmental challenges that suggests a logical, rather linear methodology. Typically, we scientists identify an emerging or newly recognized problem, we collect lots of data and analyse it, we test potential solutions against the current environmental legislation and any forthcoming issues (obvious health-related questions, for example, or the demands for carbon reductions), and having had a look at the likely costs of a couple of remedies, we take a decision on what to do. Then we, or more likely someone else, does it. 'Simples', as the advertisement says, if we can mimic a commercial enterprise in drawing on a quirky (possibly ecological) metaphor. Real meerkats do not wear clothes, of course…But is it that simple? For the meerkats, every problem grows in scope, slips out of their grasp, pops up in unexpected places, embodies different views on the exercising of power and requires new ways of thinking. Sometimes they are driven to distraction. In my last talk, I introduced the idea of 'wicked' problems – problems so complex or intractable that they require more than just the application of science to solve – and today I will recap on that theme, explore some environmental examples founded in the workings of business and industry, and begin to tease out more about the different perspectives of a range of stakeholders. As last time, I will be drawing in part on my own work as an environmental consultant, in this case working for specific industrial stakeholders. I also hope to take us a little closer to understanding how such problems may be addressed.

I also promised that in my lectures, you would have an opportunity not only to hear my voice, but those of some other people who have experience in working in environmental domains. I previously noted in passing that Owen Patterson, former environment Minister, described these people as 'the Green Blob', people who in his opinion had vested interests in the identification and amplification of environmental problems, but I leave you to draw your own conclusions on that, based on what you hear. Some of the opinions are not, perhaps, those that you might expect from individuals working in specific organisations. Let's start with Mark Enzer, an experienced and senior consultant with one of the UK's most respected international engineering companies…..

Mark makes a number of good points, but as you listen to my commentators today, I would ask you to have in mind some key questions:

- What do they understand by 'greenness' in business and industry?
- What sort of environmental challenges arise from business or industrial activities?
- What are the potential roles of business in addressing environmental challenges?
- What is the actual role of business today? Is business generally a force for good or evil? According to who?
- What tactics do my commentators suggest for addressing environmental challenges?

Let's recap that with another minute of so of Mark talking, followed by some commentary from Professor Lyla Mehta, who holds international roles in several universities……

You will have heard both Mark and Lyla expressing reservations about the roles that businesses do play in relation to environmental challenges, although neither of them casts businesses in their traditional role of the rapacious exploiters of the natural environment, seeking to get away with a catalogue of environmental crimes, and resisting all environmental legislation. Not villains, then.

I want now to look in more detail at an example of a business operating in an environmental arena. Twenty years

ago there was a proposal to build a secure landfill site near Rotherham, Sheffield, an area that in the 1980s and 1990s had experienced severe decline in coal mining and metals manufacturing. The disappearance of these industries had left a legacy of contaminated land and dereliction, as well as poverty amongst the local people. There are many ways to clear up soil contamination – 'concentrate and contain' the materials, or 'dilute and disperse' being obvious examples depending on the nature of the problem, and the relative toxicity and health-related problems associated with the contaminant. Let us not be in any doubt that this polluting material had been generated as a result of industrial activity, the business practices of the past, in response to demand for products that we as a society said that we needed, and for which the international market was very large. Local people had worked in these industries, often securing good wages. Prior to the Public Inquiry that debated the potential construction of the facility, the region was a net exporter of waste. The site selected for the construction was not itself significantly contaminated, but it would act as the long term repository for approximately eight million tonnes of materials such as mercury and arsenic brought from elsewhere by a locally-based but national company. The location was well connected with the motorways, had little residential development, and was allegedly not perforated with old mine shafts that could create uncertainty in its behavior in relation to water movement. But it was in the Green Belt, was underlain by a small shallow aquifer, and was the home of some protected and bird species, lapwings for example – a Site of Scientific Interest. Agricultural land would be lost, and some footpaths would need diverting. This is a similar case to many, many other cases of two decades or more ago. The slides illustrate the geology, the distribution of water features and settlement, the quality of local watercourses and other sources of water on the site, according to my sampling.

I was commissioned by the company making the application as one of a number of 'experts' to examine their proposal for a secure containment, and to advise them on whether what they were proposing was likely to satisfy the relevant planning authorities when the case was heard, at Appeal, by the Inspector representing the Secretary of State for Environment. This was just at the time when Environmental Impact Assessment was becoming significant in the UK, driven by EU legislation. Interesting times. Some local people (as an Action Group) and the Local Authority not unexpectedly objected to the proposal, citing a range of environmental side effects that were difficult to characterize, but included the dangers of releases of dust and polluted leachate to air and water. The scheme was quite complex, involving a hardened double liner of dense asphaltic concrete, pumping and treatment of leachate, and careful long term monitoring of the site into the indeterminate future, perhaps in perpetuity; Mercury is a very unpleasant, carcinogenic substance. Much of the evidence offered by both sides in the Inquiry was highly technical, relating to potential groundwater movements, mining, molecular diffusion through the liners over centuries, and similar issues. My own research suggested that liquid releases from the site, of both treated effluent and runoff over the capping, would be of significantly better quality than that currently present in local streams and ponds; local watercourses experienced high levels of nitrate and phosphate pollution, from farming and septic tanks locally. The residents managed to secure financial support from Richard Branson, CEO of Virgin, and Friends of the Earth, which allowed them to bring in their own 'experts', not a situation which was usual at Public Inquiries at the time. It balanced up what might have been a rather unequal fight.

The Inquiry ran on for nine weeks, rather than the anticipated ten days or so, and was essentially a battle between 'experts' debating general principles *versus* detailed local knowledge. It had its dramatic moments, particularly in relation to the weak ecological evidence offered by both sides, such that the Inspector effectively undertook his own analysis; I will spare the feelings of the professional ecologist whose evidence on bird populations was publically and horribly dismembered by one of the barristers. There was also a strong suggestion that the Local Authority had initially turned down the request because of competing interests from another potential waste development, part owned by them; local interests were not only associated with the aesthetics (or otherwise) of the development, but also the possibility of individual financial gain, and concerns about to whom it would accrue. Different factions fell in and out with one another, as the strength of views of particular issues waxed and waned, and the Local Authority was accused of not communicating with local people. Equally, the company initially did little to consult local people, or allay their fears; they agreed to meet a local councilor quite late on in the run up to the Inquiry, and he brought with him another person who in the fullness of time was revealed to be a campaigning journalist, not a local resident. This did not add to any feeling of mutual trust.

Inspectors in Public Inquiries acted then increasingly in the context of a shift from environmental protection to 'sustainability' as the dominant theme. Was the scheme 'sustainable' and what did that mean in the context of historic contamination? In law at the time, the 'precautionary principle' was emerging and the National Rivers Authority, forerunner of the current Environment Agency, did not have to demonstrate that the site would cause a problem. The onus lay with the company to show that its action would not create a risk. The company (and indeed individuals working on their behalf) were subject to local vilification, but persisted as they sought not only to secure permission for this site, but for the principle of containing hazardous waste using the (then) best available technology. In the end, the scheme was refused permission. Why exactly that happened is a matter of debate, but it appeared that the 'sustainability' criterion was not fully met.

What do we learn from this? First, we have here a ‘wicked’ problem (Rittel and Webber, 1973), characterized by conflicts in language, and lack of full resolution – the waste still needed to be cleaned up. We may even have the characteristics of a ‘super wicked’ problem (Levin *et al,* 2012). Stakeholders had entirely different world views. Many members of the company had a genuine commitment to proposing innovative new solutions to serious problems of soil contamination. Naturally the company needed to turn a profit, but concentrating and containing highly toxic materials generated by industrial uses of the past appeared to them to be an effective and sustainable solution. For the local residents, conversely, the solution did not lie in this domain, or indeed in their domain, at all. Whilst not articulating an alternative option for disposing of hazardous waste, and the legislation did not require them to do so, they were clear that the risk to their neighborhood was unacceptable. And that the company were thought to be duplicitous and rapacious, seeking to ‘clean up’ by apparently cleaning up.

Before we move to a second example, let’s listen to another commentator, Isabel Carlisle, someone with an interest in locally-based solutions. What is her view about business roles and responsibilities…?

Now a second case study about a West Midlands development. Gulf Oil had built an oil terminal in West Bromwich in the 1960s, from which to distribute fuels to local service stations, supermarkets and the like. Petrochemicals of different types were stored on the site in large tanks. In 1945 the site is seen here as clear, and in 1999 it is again cleared of most structures. So, the terminal was a temporary phenomenon, but characteristic of many similar industrial ventures in what was the heart of the world’s industrial revolution. The site is surrounded on three sides by water, including the River Tame, and two canals dating from the eighteenth century. Oil had originally arrived in the terminal by train, but later transport was switched to an oil pipeline from Milford Haven. This is not an attractive facility, but a necessary one to maintain the fossil-fueled lifestyles that we all enjoy. The river catchment can be seen in the images here, embracing part of the Birmingham conurbation. It is underlain by Coal Measures, and local water quality was very poor throughout the area; the classification at the time was ‘Very Poor’, and so intractable was the water quality problem that the river ecology target for the River Tame was also ‘Very Poor’ – that is, there would be no real attempt to clean it up in the forseeable future. The immediate environmental problem was that water seeping out of the western part of the site, and of many others locally, was contaminated with oil, ferrous and manganese compounds (ochre) and a variety of other materials. Following rainfall, astonishing multi-coloured seepages would emerge. When trapped, and exposed to the air, oxidation would begin and black precipitates would appear in the water in minutes. The company had tried to manage this by trapping some of the groundwater, pumping it to a tank and skimming off the oil, prior to discharging the water to the river. This was legal. However, with EU legislation tightening, they could see that this was not a long term of sustainable solution.

I was asked to research more about the hydrological behavior of the site. We installed equipment across the site – short term rain gauges, monitors on the various pumps, monitors on the river and canal, and water sampling equipment. We drilled boreholes into the site to monitor what was happening underground. We had fun experimenting with using the fire hydrant system to establish the ability of the ground to conduct water, and we identified large voids in the substrate. And we started to make challenging findings. The oil tanks had been constructed on about 10 metres of industrial refuse – the foundry waste of centuries, plus other unknown dumped materials. Underneath that there appeared to be a mine shaft. Every time it rained, water immediately ran everywhere on the site, and pulses of contamination were pushed into the oil skimmer in vast quantities. Oil on troubled water, as my heading indicated. Some groundwater also seeped directly into the river, which although itself contaminated, became more so. Occasionally, when sampling water from boreholes, we found up to a metre of oil floating on the groundwater, probably a leak or a remnant of a spill from earlier years.

After a few months, well before our hydrological analysis was complete, the company decided to install an additional treatment facility to trap and treat groundwater, prior to releasing it to the normal sewer system. It was not cheap, either to install or to operate. However, the weather overtook events. The spring that year was wet, and water levels began to rise under the site. The slides show the patterns experienced. You can see water moving from east to west across the site, but then a sudden rise in levels from about 19m above reference level, to 25 or 26m, particularly in particular easterly locations. In addition, saline waters appeared. The pumps were running like crazy, the required dosage of decontaminants reached epic proportions, and things looked black. Now, today we do not have time to examine the whole picture, but the likely explanation of this lies in the historic use of the site, not in the company’s methods of operating the site. In the nineteenth century, the area marked by the increased water levels was the site of an arm of the canal – narrowboat parking bays if you will. These can be seen in early maps. In the 1990s water seemed to be seeping into this from the adjacent canal, and then on though the site. In addition, rising groundwater appeared to be welling up from the mine shaft into the site, bringing salts. This situation was characteristic of many areas of the UK where groundwater had ceased to be used as a main water supply. The situation was almost unmanageable. At this point, economics and politics

intervened. The company was taken over, and although our research continued for the remainder of the year, we could not publish.

However, let's reflect on who is the offender or the villain here, and who might appropriately pay for a solution. The Environment Agency were driven by Europe to tighten legislation on industrial discharges, and were clear about what would follow non-compliance. Staff at Gulf Oil, and possibly shareholders too, were not happy about the state of the site and the river, at least by the 1990s. Some employees lived locally, and had children who could not paddle in the river, or who would under different circumstances have liked to fish in the canal. They all recognized that something would need to be done, but the problem was technically, logistically and legally complex. The source of most of the contamination was historic, mostly from a century or more ago. As they grappled with the polluting outfalls, the additional entry of water into the site remained unknown and unchecked. Perhaps the government–owned British Waterways was the culprit for allowing their water to leak away? And beyond that, the company could not help but reflect on the fact that contamination from their site was no worse than that from thousands of others elsewhere in the Tame catchment, and that their efforts would not really address the wider problem in any significant way, and could result in the site becoming uneconomic to operate. Government might be the only agency with sufficient resources to address it. The cost of a remedy was huge, and eventually Gulf succumbed. The site was, in fact, sold, redeveloped as storage facilities, and I hope a technical remedy has now been found.

Professor Steve Rayner would join me in putting this problem into the realm of wicked problems, because of the high level of uncertainty, and the decision stakes being high as well. Perhaps even more than my previous example, which could possibly have rested in the 'territory of 'experts', this is true 'wickedness'. Were Gulf Oil villains in this? And what is the role of business in addressing such problems, as opposed to government, for example? How are different roles balanced up in a complex world?

Let's hear a couple more people talking about the appropriate roles of business in addressing the environmental challenges of 2014….Martin Griffiths from a small business, and Stuart Heyward-Higham from a multinational…

The potential roles of businesses, and the people that work in business (and let's not forget that these people are also us, wearing other hats) in facing environmental challenges today are multiple:

· As innovators in proactively addressing environmental and related challenges such as future resource shortages (a really important driver)

- As leaders of change
- As drivers of government policy
- As motivators of communities
- As passive recipients of external pressures from legislation or government policy
- As villains

If we listen to several more commentaries, we will see that today the attitudes of some leading global corporations and SMEs in the UK towards sustainability are regarded by some commentators as having shifted very much, and there is considerable evidence that businesses are now playing leading roles, leading government for example and pressing them to establish legislation that sets common standards, even if challenging, so that the targets are clear for scientific and technological innovation. These commentators come from different domains, Dr Faith Culshaw from one of the Research Councils, Nigel Mattravers from a finance background in the City, Dr Richard Miller from a UK government agency promoting technological innovation, Innovate UK, and Paul de Zylva from the campaigning organization Friends of the Earth, who had in the past supported the residents acting against the waste disposal site proposal at Straight Mile. ….

Perhaps these are strange bedfellows! But regardless of their backgrounds, these commentators are all suggesting that businesses are playing a strong hand now in addressing environmental challenges, and in some cases that they are leading government by example. When they talk of leading companies they are talking about

organisations such as Marks and Spencer's Plan A scheme (because there is no plan b), Unilver's work on reducing the carbon emissions and resource consumption of their products such as shampoo, and detergent, and Geneco (an offshoot of Wessex Water) whose award winning scheme to capture biogas from sewage at their treatment plant, and fuel vehicles on it) has amused and delighted children, and is now moving into fuelling the treatment plant itself from the waste. We need to ask ourselves if these are just greenwash? After all, Marks and Spencer still wants us to buy more clothes, most of the energy consumption from Unilever products is not in their manufacture, but in the way we use them when we shower or wash our clothes, and Geneco's work is still small in scale, whereas they still pump hundreds of cubic meters of effluent around the region, whilst closing local sewage treatment plants. It depends upon your world view, of course, and whether you think this is hype.

I want to offer a couple more commentaries in conclusion, touching on the business of 'greenwash'. Julie Hill, now Chair of the UK's Waste and Resource Action programme, and Lord Smith of Finsbury, latterly Chairman of the Environment Agency, also have views on this….

How might these views be reconciled, and indeed can they be reconciled with those reservations expressed by my earlier commentators? Steve Rayner, drawing on American Nancy Robert's analysis, suggests that for a successful resolution, or at least an adequate resolution to these wicked problems involving businesses, three sharply differentiated world views must be reconciled. She terms these world views 'hierarchical' (the views of scientists and those who tend to prefer the linear route of science, logic and technology), 'competitive' (those who prefer to see the corporate approach to problems solving, and reliance on business and the City to sort out environmental challenges through competitive innovations), and 'egalitarian' (those who wish to see dialogue amongst all the stakeholders, experts or otherwise, as a means of resolving problems). In the UK, we do see elements of these three approaches being used, and we also see attempts to bridge gaps between the different groups. I have represented these as a triangle, and I indicate where some of the action currently lies. Most of our approaches so far, however, only involve two parties at a time, and my view is that unless we can reconcile all three, a solution will not emerge. There are also some great difficulties in trying to ensure that different stakeholders can actually communicate effectively – that they use the same language. In my last talk, I mentioned some possibilities for doing this, including the use of social media, and I will be pursuing this further in my next talk. That will look at the role of educational organisations in furthering environmental agendas.

I'd welcome your commentary so do please contribute by using the hash tag on twitter:

#greshamenv

Or by messaging @carolynrroberts.