



Tech Talk

Surprising Sources of Greenhouse Gases ©

by John McCarthy

Hi and welcome once again to Tech Talk. Over the last few years, the media has drawn our attention to the dangers of greenhouse gases, global warming and climate change. On hearing these expressions, most of us would tend to think of carbon dioxide produced by burning fossil fuels such as coal-fired power stations – the number of which, incidentally, is set to increase considerably in the developing world, despite the back-slapping agreements of COP 21 – and of course petroleum in all its manifestations. The biggest villain singled out in Europe is the diesel engine, and indeed plans are now under way in Paris and elsewhere to phase out slowly the internal combustion engine and replace it by the reputedly more eco-friendly electric car in the short term, and perhaps the hydrogen engine in the mid-term.

But CO₂ isn't the only greenhouse gas and fossil fuels aren't the only source of such gases. We all exhale carbon dioxide, and with the world population expected to double in the next fifty years, this will only exacerbate the situation. However, a surprising and neglected source of carbon dioxide is the world's ruminant livestock, as for instance, cows and sheep. Various reports from eminent scientists have identified the world's rapidly growing herds of cattle as perhaps the greatest threat to the climate, forests and wildlife. Other damage is done by pigs, sheep, goats and chickens, but it's the world's estimated 1.5 billion cows that are doing the worst harm. Livestock is supposedly accountable for 18% of the greenhouse gases directly responsible for global warming. To put this into perspective, that's more than cars, planes and all other forms of transport put together. As the developing world becomes richer and dietary habits change with people preferring to eat more meat, the number of ruminants will probably continue to grow, putting unbearable pressures on eco-systems throughout the planet.

Methane is the problem, produced when bovines belch and break wind. It's approximately twenty times more potent at trapping heat from the sun than carbon

dioxide. Like all greenhouse gases, methane acts like a blanket around Earth, trapping heat.

Other effects on the environment: in order to feed livestock, more fuel is burnt to produce fertiliser to grow feed, in order to produce more meat and to transport it – and of course clearing vegetation for grazing, as for instance in the Amazon forest where acres of jungle are burnt on a daily basis, makes matters even worse. A veritable vicious circle.

The good news is that scientists are trying to find a solution. In New Zealand, researchers are endeavouring to produce specific drugs with the aim of reducing gases produced by cattle and sheep. Results have been encouraging and it would seem that methane emissions could eventually be reduced by about 20% with apparently no harmful effects on the animal. However, one of the problems is that cows would have to be treated continuously, and nobody can be completely sure of any long-term detrimental effects on animals or the humans who consume them.

Geneticists believe they could breed animals with a lower propensity to burp methane. This would represent an enormous ethical dilemma and would certainly keep José Bové on his toes for a long time to come. Other scientists and experts have experimented with cows' diets hoping to reduce and perhaps even eradicate methane gases in the long run. Other solutions involve creating new strains of grass, plants and animal fodder, with all the potential dangers that it would probably bring both to animals and humans. It wasn't so long ago that we had the BSE scandal – better known of course as mad cow disease – caused by changing animal fodder, which provoked a spongy degeneration of the brain and was then transferred to human beings by eating certain parts of the contaminated animal.

Over the last couple of decades, we've come to consider technology as a panacea for all the ills and ailments befalling our planet. But it isn't. In this particular instance, perhaps the simplest answer is common sense and better husbandry. Indeed, this idea could be pertinent to the economy in general. In a finite world, infinite growth is impossible. One of the strengths of *homo sapiens* has always been our adaptability to the environment, and as our numbers increase and we compete for ever-diminishing resources, one of the great challenges of the future will be how to feed the extra billions who will be born in the coming decades. Eating less meat is certainly a solution, but many experts believe that we will have to change our diet radically and will be forced to farm insects of every shape and size, and not just in order to reduce greenhouse gases, but more importantly

to avoid famine. I've actually tried grasshoppers, caterpillars and termites ... but have to admit they're nowhere near as flavoursome as a *tournedos rossini*.

Out of time once again, I'm afraid. Join me for another edition of Tech Talk next week here on englishwaves.fr. In the meantime, it's good-bye for now.