

How humanity can survive climate change

By Ken Livingstone, former Mayor of London, United Kingdom

How can humanity survive climate change? No doubt humanity will survive climate change. The issue is: will this be a remnant of a few millions of people living marginally or can our very complex constructive human civilization survive the scale of climate change that is coming. I think this is possible, but we haven't yet seen from governments around the globe anything like the measures necessary to guarantee this survival.

When I ran for mayor in 2000, the various ideas and scientific predictions were that we would reach an irreversible tipping point on climate change before the end of the 21st century. And every single new study brought this tipping point figure rapidly forward, so that by the time we got to the Stern rapport, we were talking about five to twelve years. Clearly, the loss of opportunity of the last eight years were due to a lack of American leadership. Without that leadership not many other governments are prepared to do very much, although I have to say many European governments have done quite a remarkable amount. But not on the scale that could have been done by a vast continental economic power, such as the United States of America. We are really now in desperate shortage of time before we find that irreversible tipping point upon us. The international panel on climate change the minister referred to, was of course a compromise rapport. From over a hundred countries, scientists, many of them slightly skeptical about climate change; some Americans, and many representing oil producing countries and so on. But in my view, if we haven't already passed that tipping point, we are certainly no more than a few years away from it. The acceleration of these problems is profoundly disturbing.

My response to this in London – given the British government has made some wonderful statements and policy, but has taken very few specific decisions that have a real impact - was to see what we could do focusing purely on London. Because we are already in a position where the majority of the population live in cities and cities produce 75% of the carbon emissions that are impacting on climate change. Therefore, if we can get cities working right, then this is a huge step to resolving the whole problem. I had a team of people given complete freedom to develop their ideas, to think completely outside the normal constraints and to come up with a plan for the maximum that could be achieved over the next twenty years and by the middle of the century. And they came back with a report that showed, just with existing technologies, not waiting for anything new, that London could reduce its carbon emissions by 2025 by 60% and would have no trouble achieving the 80 to 90% reduction by 2050, which is the target now getting a huge consensus around it, the target set by governor Arnold Schwarzenegger in the United States of America.

We broke the 60% reduction in twenty years down into two equal camps, the first being changing lifestyles.

We could get a 30% reduction in carbon emissions in London, not by people living a worse quality of life, but just changing the way in which they live. In a way that our parents who went through the depression and war, would have understood as not being wasteful. So it was simply insulating every building. In London only 10% of all domestic buildings are adequately insulated. Everybody has got a bit of insulation in the loft. Further, it means changing every light bulb with energy efficient light bulbs; it means taking a shopping bag with you rather than get plastic ones. It means not wasting water. Britain in particular never went for a dual water system of grey water and drinking quality water. All of the water that comes into our houses is of drinking quality and a third of the water we use in our lives is flushed down the toilet. So I unleashed the plan as mayor not to flush the toilet when they've only had a pee. My problem at the time was that the water supply was owned by a German company who had great difficulty accepting that they might discuss bodily functions in their advertising campaign, so we had to work around them. We found the easiest way was to reach primary school children, because children love to go home and say to their parents: 'you mustn't do that, the teacher said' or 'the mayor said', or whatever. So across London children started not flushing the toilet when they had to pee and had endless rows with their parents, who were brought up to think

that this was dirty. Of course, urine is simply a very dilute nitrate solution, which in much of the world farmers used to stimulate their crops and help them grow or get their compost heap working. So it is always quite remarkably small things, but which all added together have a huge impact.

There is also the issue of transport clearly continuing to bear down on car usage. Because the English are a bit like the Americans of Western Europe with high levels of car ownership. Someone in France, Germany or the Netherlands will buy a car but still carry on using busses and trains or on occasions bicycles. In England we suffer the American disease: once you've bought a car, you lose the use of your limbs, you use it for everything. Therefore, we needed a painful medicine, which was the congestion charge. And I have to say, although I was defeated in the election of May, climate change issues and the congestion charge have not played a part in the election at all. My successor, having been a climate change denier and Bush supporter, has just taken six months in office to realize that this is a real problem and he is broadly carrying on with a slightly less energetic prescription of my policies.

The transport issue was one that was remarkably successful, because the congestion charge was a very small part of central London, but it started to trigger a change in thinking. It also helped with the rapidly escalating and then collapsing price of petrol. We have had a shift of about 5% of the journeys if you take what transport planners call the totality of journeys including walking and cycling. When I was elected about 48% of all journeys was by car, by the time I lost office had come down to 42%.

We were beginning to see declining levels of car ownership. We've put a big effort into creating car clubs, because most people in London are like myself, we might use a car in the weekend for recreational purposes, but the rest of the week it sits outside the house. The reality is that people could use car sharing clubs for the occasion when they actually need to use a car. Starting in the centre, where it's easiest to do because of the concentrations, it is now rippling out through London. My successor also carries on with a policy of trying to get a shift into the use of bicycles, where we always hold up the Netherlands as a sort of Holy Grail of where we would like to be one day. Mind you, it helps if you have a flat country.

The second big area where we could achieve a 30% reduction - all of those lifestyle changes make up a 30% reduction- was to shift from centrally produced energy to locally produced and distributed energy. There is this great debate going on tearing the environmental groups and governments apart, about whether we should have nuclear energy. If you have, and we only have one of these in London, a nuclear or a new coal fired power station simply producing energy locally where it is consumed, it will mean you can lose half your productive capacity, without any reduction. Many countries in Europe have come quite a long way down this road and it's incredibly effective.

We also started to do work, and my successor has published this report, on how we adapt to what is coming. London has a terrible heat island effect. We made no progress on green or brown, because there was a planning regulation that said green roofs will not be usable for any purpose, because people could spy on other people living below them. It's a sort of peeping tom syndrome, the fear that if people get onto a roof, they have binoculars and peer into someone else's bedroom. I am not joking, this is absolutely true, so all the roofs in London until recently have been unusable. It's always impossible to get on them for maintenance or so on. We are now moving very rapidly in that direction for all the reasons that you saw in the earlier presentations. Our heat island therefore is particularly striking and severe. You notice it if you're having a meeting just outside the city in one of those Home Counties and you come back in the middle of August at about 10 or 11 a clock at night. When you arrive in the city, you start to sweat. It is like living in a vast radiator, which soaks up the heat and then pumps it back out. So the temperature never falls enough at night for people to sleep well. We calculated it's about a 6 degrees Celsius difference in the middle of the night, when the difference is at its most extreme between the centre of the city and the surrounding rural area.

When you start looking at the overall background increase in temperature with climate change, this becomes more and more alarming. We were relatively lucky with the big loss of life in August in 2003. It effected the continent much worse, because as an island the UK temperature is slightly more modest. We had only 600 people die in London. It got almost no

coverage at all, while it was four times our annual murder rate, twice the loss of life on our roads, and it barely rated a mention. This is one of our problems I think. Many of the environmental catastrophes which are slow or not that obvious don't get media attention and aren't there to educate the public about the scale of the problems we face and what we have to do.

I like the Netherlands. For us one of the great defining issues of modern times was the flood of 1953. And you know what you did about that. Of course in Britain we eventually built the Thames barrier. That was functional in February 1982. I had this very nerve wrecking first year as a leader of the great London council, when the barrier wasn't ready yet and we knew that we were really right up against the margin. We left it far too late to construct it. It came in just on time. In the first year, we raised it twice a year. Now we raise it twice a month. Had we not built that barrier, London would now not be a world city. It would have faced catastrophic flooding, closure of most of the underground for the best part of the year or more, many of the big firms would have been relocated, so we only just made it in time. The debate between myself when I was mayor, and the government is whether we need another, a bigger barrier a bit further downriver. We accept what needs to be done, the government's view is that we might not need it until the end of this century. My argument is that we most likely need it by the middle of this century.

In terms of adaptation we need a much more rapid move forward in what we're doing about transport. We've got to move to having a cooling system in the underground or you'll find it just becomes unusable for large part of the summer. It is anticipated that the best we can expect is that the temperatures in London will match those of Paris at the present time by 2025 and Madrid by the middle of the century. And of course the defining issue about homes in London: not a single building has ever been constructed to keep the heat out. Every single building has to be adapted to cope with much higher temperatures. And on the pessimistic range London's temperature by the middle of the century could be bad as that of Morocco. Insulating homes represents a huge challenge.

From the reports we've been making we recognized that cities working together could achieve quite a lot just by exchanging information. We convened what we started of calling the C-20, which is now rapidly becoming the C-40. This is both the largest cities on earth, and those like Rotterdam that leaves our work on adapting ports and to make them carbon neutral; or Los Angeles, that looks at airports, or Seattle and many other cities, which are relatively small but have done very innovative work in this field. We just brought mayors together. I know that the general perception of the public is mayors going abroad to conferences where they will largely lay on the beach and their partners doing a lot of shopping. We had the first meeting of what had become the C-40 18 months ago in New York. I was a guest of mayor Bloomberg. There were something like 35 mayors from the largest cities on earth, all of these people key players in the politics of their own country. The mayors were leading debates on anaerobic digestion for example. For those of you who dealt with politicians or for those who collected a lot of mayors or prime ministers, this is not new: if somebody says something they all feel the need to get up and say something better or prove they are doing more. What I find striking about this is, perhaps because mayors have to cope with the immediate problems in their city and are acutely aware of the scale of changes that are coming: there was none of that grand standing. People were just sitting, making detailed notes, seminar after seminar after seminar.

We'd had the good fortune that Bill Clinton had come along with his foundation to say that he wanted to get involved. He brought in the biggest corporations, so we could think in terms of these cities collaborating in collective purchasing. The first of the deals which was put together, was on retrofitting buildings so they would be energy efficient. The Clinton foundation negotiated with the large energy servicing corporations. The deal was that 16 of the cities agreed to retrofit all their public buildings, and the firms concerned dramatically reduced their prices. That one decision doubled the global market for building retrofitting by 125%. And of course many of the other cities have now come along and joined in this deal. London got the first contract and the first 42 of our old police stations and fire stations are being retrofitted. It turned out that we will save 25% a year in energy costs on those buildings.

Mayors have difficulty raising capital investment, so there was a deal made with the energy companies. The retrofitting firms would turn up, look at the buildings and give a list of what could be done. The director of the corporation decided what he wanted done, the firm would do it, no upfront costs for the city and the firm would be paid a 80% of the energy saving from each building until the costs of the work was repaid. Now that's the sort of thing that can only happen when you're talking about several big world cities coming together to combine their purchasing.

Other groups in the C-40 are working now on moving forward with a new generation of energy efficient traffic lights. The C-40 is working with a firm here in the Netherlands on the next generation of energy efficient light bulbs, because a lot of people don't like the existing energy efficient light bulbs. They think the light is too cold, they can't use the dimmer switch, and of course all of the climate change deniers endlessly go on about the fact that it has a little bit of mercury in it. But the next generation light bulbs has no mercury, can be used with a dimmer switch and gives much warmer light. And used in street lighting it increases peripheral vision by 40%, so suddenly you're much more aware of everything at night time. I haven't got the figures of what happened since May, but we're on the point where the firm had achieved a 40Watt light bulb, was about to produce a 60Watt bulb and by some time next year we will have a 100Watt light bulb. It is my intention that once that happens I'm sure the mayors of Rotterdam and Amsterdam and other cities would want to do what I would do want to give one to each citizen, so they can see the value of it and start the process of creating that new market. In Britain, 18% of all the energy that we produce is used for lighting. If we were to replace all our lighting by the next generation light bulbs, you would be talking 2%. So huge savings there.

Then there is the question about what we're doing about our ports and airports. I think we have to accept in the west, but clearly in India and China, there will be a continuing growth of air travel. But I have to say I think that in America and Europe we should accept that what we have is the limit. Therefore I am particularly delighted with the present Sarkozy's decision that there will be no more runways. I am still trying to persuade my own government: in London we don't need another runway or Heathrow Airport. The vast majority of increase in flights in and out of Britain have been short holiday flights. Half of the people in Britain never board a plain. 10% take half of all the journeys. It's absolutely crucial that we protect business travel because it stimulates the economy, but it is a luxury we can't afford that fairly well paid people have three or four long weekend breaks somewhere 3 or 4 or 5 thousand miles away. We have to learn to restrain ourselves, because whilst we can see new light bulbs, while with no doubt we will have carbon neutral cars at some point in the next decade, the one thing you are not going to get is a bloody great jumbo jet lifted up into the air with photo voltaic cells on it's wings. There is no new technology in sight, there is not even the glimmer of a theory about a new airplane that might be less environmentally damaging. So I think we have to constrain growth dramatically. I think all of these things taken together can have a huge impact.

That was the good news. Now let me give you the bad news. There is an organization which I have relied on that underpins all of the research we've done in London, which is the Tyndall climate change group. A non-profit organization that analyzes and makes forecasts. They have gone back and looked at all of the debates taking place, the Stern rapport, the debates taking place now between the governments about what to do post Kyoto and so on. Almost all of this debate is taking place under the assumptions that the increase in carbon emissions globally is running under just 1%, 0,9%. Those are the assumptions that under based Stern, those are the assumptions that under base the debate about can we stabilize the increase in global temperature to just 2 degrees. Tyndall has gone back and the estimate is that the increase in carbon emissions is running at 2,4% per annum. When they calculated the impact of that, their conclusion was: there is no more than 7% chance of stabilizing the increase of global temperatures at 2°C. And that would include America suddenly turning itself on its head overnight; no matter how good Obama is going to be, the process of change is going to take years and years. Tyndall estimated there is about a 50-50% chance of stabilizing at a 4 degree increase. Now for those of you who know this science, know that this is catastrophic for whole nations. Nations who are now semi-desert become uninhabitable, the impact on glacial melt that would impact on flooding is catastrophic. You would be talking probably about hundreds thousands of climate refugees. What we can't do is be precise in how rapidly

this will happen. So it's a much more pessimistic view that comes out of the Tyndall group than is underpinned in the present debate. Where everybody says that Tyndall is most alarming, five years later everybody has turned up to broadly agree. So my assumption is that the governments over the next few years have got to massively up their game in what they do, corporations will have to do much more strenuous efforts to change.

The good news: I've just come back from eight days in China and the interesting thing about the Chinese government is that within a political career of a politician or bureaucrat, they have seen the impact of industrialization on climate in a lifetime, in a way that was never possible in the west because it took here 150 years. The young bureaucrats of the late 1970's are now running China and seeing in their lives catastrophic and horrific rates of change. They now start to respond. In the current five year plan which is now in its fourth year, they took the decision to go for renewables. Last year, 2007, whilst Germany invested 14 Billion dollars in renewables, China caught up and I suspect that this year they will overtake Germany and become the leading nation in renewables. There is an intense spirit of debate at the moment amongst the communist party leadership about how much climate change and environmental issues will impact in the next five year plan that will go out for consultation next year. This opens up the prospect of a friendly competition between an Obama administration and the Chinese government about who will lead, because nations that will lead in creating these technologies, will earn vast amounts of money as they export them. I was whining at my government for years about why we can't start producing photo voltaic cells. All we have to do to create a market is to make them mandatory. We actually have a photo voltaic cell that is a roof tile. You could specify that every south facing window, every south facing roof would have to use them. There would be a market overnight. But my government was reluctant to go down on that road.

I think there is real optimism that we have gone through a tipping point, both with the recognition in the Chinese communist leader partnership and of the election of Obama just in time. The debate is no longer going to be about whether there is or not climate change, but about what is the best way to respond, who is the one that can respond the most rapidly. There are a couple of brief points to be mentioned. Many in the green and environmental movement are deeply suspicious of carbon capture and storage. This is largely because people like Tony Blair have argued in favour of capture and storage so that we can carry on with the current levels of economic activity. Simply because something is implicated by Tony Blair doesn't mean that it is automatically a bad idea. We need to do all these things. We need to reduce our carbon emissions and develop carbon capture and storage, because the scale of the change that is coming, means it isn't good enough to reduce our new emissions. The violent climate we now see is a result of the emissions our parents produced in the 1950's and 1960's. We have to think about how rapidly we can develop not just capture and storage around coal fires power stations, but to actually extract carbon directly from the atmosphere and store it. The technology is not there yet, China is just about to open it's first carbon capture and storage. The indulgence of my generation will be bore by my children and my grandchildren. But we have the chance to rectify that. All it requires is a huge evolutionary breakthrough that politicians around the world develop backbones and tell people the truth and lead them to accept the changes that we need to make.

Thank you very much.