

**James Naughtie**  
BBC (Chair)

My role in many ways is to say as little as possible, but to try to tease out from a great panel of distinguished people some thoughts on this topic. The topic was raised after the Foresight report. It has produced this extraordinary Future Generator project which more than a thousand people have already played with. It is an incredible reminder of how we are caught between predicting our own future, worrying about what we think might happen and whether we can actually influence it. Well, of course, we can influence it. That is the point of this debate. The scenarios of the Future Generator will give us an anchor to this debate.

'Always On' is a terribly telling phrase for most of us. This scenario is about a life in perpetual motion with vast computer networks which people become scared to turn off. Foresight describes this as 'Perpetual Motion'. 'Living Local' is what most people want. It is about simple urban colonies that rely on local resources. Foresight describes this as 'Urban Colonies'. 'Energy Shock' is the next one. This is about a life of adapting to survive when the oil price runs out and resources, once taken for granted, disappear. Foresight describes this as 'Tribal Trading'. 'Carbon Control' is about a life with good intentions that are closely monitored and measured – by enlightened governments, presumably – without [clean air?] technology being designed. Foresight describes this scenario as 'Good Intentions'.

I hope it will be a good debate. Orange has generously sponsored this in the belief that the thoughts that we will hear tonight will feed into the whole Future Generator project. All those who have not yet been on it, should. It is part of the great London Transport Museum, which we all love. This space is going to be seen by many future debates of this sort.

We all know that there are things that we cannot change: population growth, congestion, diminishing natural resources, climate change, and so on. We are not here to talk about these 'givens', although they are a subject of great debate. We are here to talk about what people do against the background of the assumptions which these facts or possible facts have planted on our political debate.

I want to introduce you now to our panel. I will do that in alphabetical order. I will ask them to do it themselves. We will begin with Fiona.

**Fiona Harvey**  
Financial Times

I am Fiona Harvey. I am the Environment Correspondent for the Financial Times newspaper. I write about everything to do with the future of the world.

**James Naughtie**

You were modest enough to say that the Financial Times was the Newspaper of the Year. I know that because I was one of the judges and I voted for you.

**Andrew Curry**  
**Henley Centre Headlight Vision**

I am Andrew Curry. I am a Director of Henley Centre Headlight Vision, which is a strategic futures consultancy. I co-wrote the Intelligent Infrastructure Scenarios on which the Future Generator is based. The titles are very familiar to me. More generally, I specialize in long-term futures work, looking at 30–50 years.

**Graham Fisher**  
**Orange Research and Development Laboratory**

I head up the Orange Research and Development Laboratory here in the UK. I have spent a considerable amount of my career bringing futures technology to market and to the use of my customers. I am pleased to be able to look at this futures perspective to show how the future of telecoms can shape our world and hopefully make things easier. Also, to at least raise awareness of the choices we have to take.

**Chris Luebke**  
**Arup**

My name is Chris Luebke. I am a Director for Global Foresight and Innovation at Arup, a global design engineering company. My job is to help people think about the future of the built environment. We do that through workshops and visits to places all over the world. Last year we were in Tanzania doing a workshop on the future of eco resorts in East Africa.

**Tony Travers**  
**London School of Economics**

I am Tony Travers from the London School of Economics. My colleagues and I there study the government and economy as cities. I do feel faintly out of place at some level because most of what we do seems to involve looking backwards and telling everybody how everything is always the same. I shall try not to do that today.

**James Naughtie**

I would first like to go around the panel and find out what each person did when they played the game. We have the following scenarios: Carbon Control, Living Local, Energy Shock, and Always On. What did you choose? We will also look at what the other thousand people chose. Firstly, Chris, what did you decide to do?

**Chris Luebke**

I went on the game about 15 minutes before I came here. I was surprised that I arrived at 20% Always On and 80% Living Local. I didn't anticipate that.

**James Naughtie**

Just to remind people, Always On is a sort of mad world where you are never yourself.

**Chris Luebke**

I think Always On is where information is highly accepted. It is a world of perpetual motion where you assume that information is such an important part of your life that you almost cannot be without it. It governs everything.

**James Naughtie**

So you wanted a little bit of that, but you also wanted a bit of Living Local. You are a very mixed up person!

**Chris Luebke**

Living Local is about life around the urban colonies. I found that quite fascinating. When we look ahead, with the resource constraints that will be an increasing part of our reality, I do not believe that we will be transporting stuff as much all over the world. Therefore, the re-localisation of much of what we outsource now will become a big part of our lives. That did not surprise me. I thought I would have gone for more of the Always On world than came on in the game. I am happy with the results though.

**James Naughtie**

How did you find it, Graham?

**Graham Fisher**

I was puzzled when I looked at my results. You would imagine that I would be the 'mad technologist' and would have chosen the Always On. However, in actual fact, I found myself answering questions such as 'repair or replace?' with 'repair'. I quite like heritage and that kind of thing. I came out very much a Living Local, with just 10% of the Always On.

**James Naughtie**

After you had done that, and came out as someone who wants to live local in an urban community that is human, did you feel as though you were kind of living a lie?

**Graham Fisher**

I actually came out thinking about the series of choices. The future will actually be components from all of the scenarios rather than any one scenario. I can relate to some of the things such as 'if you cannot measure it, you cannot value it'. For example, water measuring and things like that. Before, there was a flat consumption model. If you meter it, it suddenly has a value and it can be tracked. I thought the same about transport, carbon, and everything else. There are things in telecoms that I work with that do that. Actually, however, I want to have a community around me and people to interact with. There is no contradiction there: you live locally, but you can trade and work globally.

**James Naughtie**

Absolutely. Did it surprise you to be confronted with the sorts of choices that you need to make as an individual to make that happen?

**Graham Fisher**

Yes. I also realised that every choice can contribute, even small choices. For example, I can decide whether to have strawberries this week or wait for them to be in season. These choices do take me down a particular path.

**James Naughtie**

If they are imported, you also pay a higher price for them. Fiona, what about you?

**Fiona Harvey**

I found myself firmly in the Always On camp.

**James Naughtie**

Just to remind people, Always On is a nightmare life. It is with the computer on at all times. You never go to Farmers' Markets and so on!

**Fiona Harvey**

You would probably go to a Farmers' Market in your hydrogen-fuelled car. The reason I think that Always On is the most likely positive scenario is because if you want to tackle the problem of climate change you will end up in an Always On world where you still have plentiful energy, but it comes from low-carbon sources. That, I believe, is where investment is headed at the moment. It is where governments should also be headed. Being in a theatre of perpetual motion is not that bad or nightmarish. I think it is actually what people want. That is why people come to live in cities like London.

**James Naughtie**

Did you find any conflict between a kind of inner self that wished things were slower and simpler and a well-organized life that does modernise the world and that does tackle climate change? Alternatively, was there no conflict in that it was not only what you wanted to do but what you felt you should want to do?

**Fiona Harvey**

Well, being a journalist, I was not necessarily answering for what I would want to do myself, but more in terms of what I think other people should do.

**James Naughtie**

That is a very honest answer.

**Fiona Harvey**

I think there is an element of both. When you are answering these questions, you do have to think, 'What kind of a future do I want to end up in?' and so I really do think that Always On is better. It is an advanced capitalist society. Unless we have a revolution any time soon, which I cannot see happening, then I think this is the most likely outcome.

**James Naughtie**

Were you trying to suppress feelings or did you find them suppressing themselves, happily? For example, the idea of an easy living of a non-urban life? What is quite clear is that most people would like to think that they wanted a sort of local community kind of life, even though they might believe, intellectually or in terms of their work, that they wanted something that was more Always On. Do you think you were being more honest than people would normally be?

**Fiona Harvey**

There is a desire to be greener in a way that seems more wholesome. A way that seems more wholesome is to be more in harmony with nature, living more locally, looking after resources, and so on. There has to be an element of that in any sensible future. However, to think that we are going to slow down the pace of life and give up some of the technological advances that we have is rather unrealistic. People may say that they want to live a simpler life, but their behaviour and their actions show that really they do not.

**James Naughtie**

Thank you very much for that. Andrew?

**Andrew Curry**

I had a large chunk of Local Life and a little bit of Always On.

**James Naughtie**

Is that because you wanted it or because you thought it was going to happen?

**Andrew Curry**

Actually I do want it, but I was trying to be honest in answering the questions. Also, I had 10% of Carbon Control as well. What surprised me about that is that my personal view is that we are much more likely to need Carbon Control to get to any of these nice futures, and I was expecting that to come out more strongly than it did. When you look at some of the scores from everybody, you can see that there is a lot of Carbon Control out there in the mix.

**James Naughtie**

There is much Carbon Control. You will get the results of the people who have gone through the Future Generator. The Energy Shock world – which is mostly about peak oil – really does not feature very strongly at all. I found that quite striking.

**Andrew Curry**

There is a reason for that. The way that the questions are phrased is actually about 'what world do you want to get to?' There are worlds that might happen; these are possible worlds.

**James Naughtie**

If there was a terror about this, even if the question is phrased in that way, it would show up more noticeably, would it not?

**Andrew Curry**

That is possible, although we also did a lot of that testing during the Foresight scenarios. We tested about 200 people in workshops and I do not think that a single person said that they thought that the Energy Shock world was the most likely.

**James Naughtie**

They simply do not believe it?

**Andrew Curry**

They do not want to live there; it is a horrible place to go.

**James Naughtie**

Tony, what did you make of it?

**Tony Travers**

I am embarrassed to say that I failed to do it at all. The reason there has been no reaction to Carbon Shock is that, for many people who live in big cities, they are largely protected. Bus and tube fares have not increased. You do not own a car and use it if you live in an urban city. These people will not notice Carbon Shock directly in the way that people will who live outside cities, who fill up their cars all the time. That is why you can imagine that people who are doing this, who live in London, will not notice the carbon problem nearly as much. Moving on, Living Local is made possible by cities. You can indeed see a model where the frenetic life of Always On can be accommodated in a big city by Living Local.

**James Naughtie**

This is the interesting question. If you look at the proportion of the answers of the people who have done it, people do want to live local, but they acknowledge that they are going to be, in part, Always On. The interesting thing is – if you live in a city like London – how do you make that work? Chris, I will ask you that. If you look at what choices people can make, and the freedom that they have or do not have to make those choices, how do you combine perhaps a lust for Living Local with an understanding of the reality that life is going to be Always On?

**Chris Luebke**

I am not sure about London, but I will answer the question in a more general way. More people live in smaller cities than big cities. This can be one of the reasons why the disparity comes up in the results. The vast majority of the world live in cities that are under 500,000 people. London is a very unique situation, as are other cities, such as Manchester. There are well-developed options in these cities. For example, coming here tonight, I could have walked or taken the tube or a private car or a taxi or a pedicab, and so on. All those options are available. This is not the case for most citizens in the UK. Their options are very limited.

If we are looking at a society which is increasingly time poor, one of the things with the scenarios, especially the Always On and the Living Local, is about how information can help you optimize your transportation options. We are already beginning to see this. In 30–40 years in the future, this will be normal.

We will look back at not knowing how long a journey will take as being laughable. Even having your device with you to give you directions, this will probably be an inevitable part of our reality.

The choices we have now are about how we are guiding our lives and what those impacts might have on our own lives. If you currently have a credit card and a mobile phone, your identity and location are known. You are tracked. Who you talk to is known. There are databases that track this. This is already a part of our lives today. I would rather have capability that will help me live rather than to help to keep me safe. It would be great to have information systems to help me survive in a very frenetic and hectic life.

## **James Naughtie**

Graham, how do you put together the fact that people clearly have a desire to live local and yet they want to use mobile phones and other technologies and have their whereabouts unknown? If I leave my home in Richmond, make some phone calls, go on the tube using my Oyster card, use my credit card in London and come back, everything I have done is known. That is the life we all lead, even if we do not want to be 'Always On'. How do you work out in your own head the Living Local and the Always On world?

## **Graham Fisher**

Technology has to have a human face. There are times when we really benefit from technology. If you were lost on the hills, you would appreciate the ability to be found and to be tracked. It is about the use that the information is put to, who has access to it and how it is controlled that is important. It is important that you have an increasing sophistication of users with increasing levels of control. An example would be that if you were under 20 years old, you would think nothing of blogging intimate details about all sorts of things to the outside world. However, as you are a slightly older, you are concerned that people are seeing information about you.

## **James Naughtie**

I am not desperately concerned about it. It is part of what we have to put into the mix. I would rather have a mobile phone so that people know where I am than not have one.

## **Graham Fisher**

Mobile phones have helped many people to feel quite safe. It helps you to go out after dark in your local areas and to enjoy your local community.

## **James Naughtie**

What about the point that Chris was making about choices? What we need to have in cities that become every more technological is the ability to choose and feel that by making those choices we are actually changing the way we live for the better. This seems to be the guts of what Chris was talking about.

## **Graham Fisher**

Choice is everything. The perfect use of technology is when you can be presented with the choices. If I have driven into London with GPS, for example, I do not have to continue my journey with that mode of transport. I am presented with an integrated set of choices: the closest tube station, the available bus routes, and so on. I believe that the Always On world can bring you choice. I should then, as a user, be able to control its use.

**James Naughtie**

Before I go to another panellist on this, please give us your own encapsulation of how quickly things are going to move, in terms of GPS and so on, in the next five years.

**Graham Fisher**

It will be incredibly fast. There are already integration centres with bodies such as innovITS, which is funded by the Department for Business, Enterprise and Regulation Reform (BERR). They are integrating all of today's components in a way which will allow vehicles to know where they are in relation to each other, to slow down if there is congestion ahead, to take alternative routes, to modify their fuel consumption as they go uphill based on decisions ahead, and so on. This type of machine to machine, passive communication actually helps to save fuel.

**James Naughtie**

I imagine everyone wanted to mention 'fuel'. Do you think that people are willing to accept more knowledge that they are being tracked in exchange for those choices? Is it your assumption that they have no problem with this, and that it will simply happen?

**Graham Fisher**

I would hope that you should feel that the benefits are there. A contract is clearly there that if you opt in to share this information about where you are and where you are going, you have the choice. Life will be better. It will help to square the circle between the 'how do I live local?' and 'how do I use technology to gain benefit?' at the same time.

**Chris Luebke**

I do many talks. I ask the audiences: if you could have a car that could drive itself, would you want that? I have been asking this question for the past six months. It is interesting to see who raises their hands for yes or for no.

**James Naughtie**

What is the proportion?

**Chris Luebke**

Usually the older man will say no. They want to be in charge as they feel that everything else is out of their control. However, a vast majority would happily give up the wheel. The response does vary though. There is certainly a different response in Texas, for example. What is interesting is the generation difference of the sense of being 'in control'.

**Andrew Curry**

I think we know what people think about privacy and the control of a vehicle. There was a petition that was overturned, after 1.75 million votes. It was about people not wanting to have their cars tracked. The petition was put forward very strongly, in terms of the language about the government breaching drivers' privacy. There is a large minority that is unhappy about this.

**James Naughtie**

Your assumption is that it is a large minority, rather than anything else?

**Andrew Curry**

It may be a majority. I do not know. It may be because of the way that the petition was phrased that the potential benefit was not expressed. However, 1.75 million people signed that petition so that does tell us something about it. This is a comfortable conversation we are having here.

**James Naughtie**

Well make it uncomfortable.

**Andrew Curry**

I will. I want to return to the Carbon Control world. The externalities from car-driving are hideous. It is not considered by taxation. The carbon costs of car-driving are huge. People seem to be driving a little less now that the cost of fuel has risen, but not in the kind of amounts that we need if we are not going to enter irreversible climate change. I believe we will see controls on car use, whether we like it or not. I do not believe it will be a comfortable conversation about exchanging control.

**James Naughtie**

You believe that choice will inevitably be restricted?

**Andrew Curry**

It will.

**James Naughtie**

Unless you have the money to pay for the choice. Fiona, do you think that is a good thing?

**Fiona Harvey**

I think more people will have the money to pay for it, if you carry on like that.

**James Naughtie**

Does that make it justified?

**Fiona Harvey**

Yes. I think some things need to be very expensive and they are not at the moment because of distortions on the market. For example, if you look at something like flying, flying is absurdly cheap. That is just wrong. Why is it absurdly cheap? Aviation fuel is not taxed and other fuel is taxed. Airlines receive many tax breaks on various airports, and so on. The trade-off between taking a train somewhere and taking a plane somewhere has a huge environment difference.

**James Naughtie**

Why should, for example, my distant relatives in the Highlands pay an absurd extra charge for motoring when they have no choice, when I could, if I wanted, get rid of my car and travel on my Oyster card around London at a great discount to myself?

**Fiona Harvey**

That can be made to work because you price things differently. That is one of the aims behind the government's road pricing scheme. Rural miles would be counted differently to urban miles. The same thing has happened with the Congestion Charge. Part of the purpose of the Congestion Charge is to discourage people from making unnecessary journeys. It has been very successful in doing that. If you look at the number of journeys now taken on public transport and the difference in the amount of cars in London now and what was projected given the growth in traffic projected.

This is already done in a variety of ways. It is just that the way it is done at the moment is very piecemeal and irrational. I look forward to a more rational economic system where things will be priced correctly.

**James Naughtie**

The idea of a rational economic system is an interesting starting point; a rational economic system and a rational transport system. Tony, having studied the way that governments operate for many years, is rationality more likely to break out in the next generation as it was in the last generation?

**Tony Travers**

No. As someone used to say, 'We are where we are'. Where we are is that people are used to their cheap flights and their cheap fuel. The market is more difficult to argue with than the government. The market may ramp up the price of fuel, but the idea that any government is going to step in is futile. We know that they will not. They have not and they will not. They will not take on public opinion even when we have heard again and again about the environment, the amount of travel, the growth in civil aviation, and so on. It is untouchable.

**James Naughtie**

Do you take David Cameron's remarks about the third runway as being simply a way to get a few votes in West London?

**Tony Travers**

It will certainly be for that reason in the short term. You may remember that, in the recent mayoral election, all the candidates were against developing Heathrow further. However, the truth is, if Britain does not develop airports then Schiphol and Charles de Gaulle will grow and we will use them. That is what will happen. There is a competition between cities to develop airports. You could close Heathrow tomorrow and make everyone go to France. That would be easy, but would we want all that growth in France? No. All the mayoral candidates were relying on Ruth Kelly, the Transport Secretary, to make the difficult decision on this one occasion.

**James Naughtie**

As a Richmond resident, I remove myself from this discussion!

**Tony Travers**

I am sure you love the noise and the pollution!

**James Naughtie**

Graham, we are onto this business of transport as part of our lives. Everyone, it seems to me, from what we have heard, agrees that people in general – and you can see this in the way that people are playing Future Generator – have a sense that the way we will live our lives in getting from A to B in the next 50 years is going to be a much more central part of our thinking; about our social interaction; about who we are; about how we balance leisure and work, than in previous generations. In your organisation, how do you see this?

**Tony Travers**

Transport is key. This study shows that, left to good intentions, nobody would modify their pattern of behaviour. We have reached a position where, in some parts of towns, SUVs are being vandalised or stickers put on them, but it has not really had an effect on the consumption of SUVs and driving, and how you choose to vary your journey. However, when a tax is introduced or the oil price is raised, economics come into play and SUV factories have to close. I believe that the stick and the carrot are both needed. The technology infrastructure will change things. I am sure that road pricing will be an inevitable fact at some point. There are also positives. We can make things easier; we can book car parking spaces; we can navigate, and so on.

**James Naughtie**

In your technological developments – and the whole growth of GPS has been extraordinary – and as that continues, do you think these will become an engine for more enlightened decision-making on the part of individuals or will it simply be a market decision at every point? Sometimes it might be the same.

**Tony Travers**

I would hope that we could reach Fiona's point that it could give us a framework to have needs-based pricing. Therefore, if you are in a rural area, where you do not have a choice, perhaps you are taxed or penalised differently. If you have the choice of many different transport options, we can change the way things are done by being smarter and fairer. My suspicion of things like congestion charging and road pricing is that they do not apply to business drivers, for example, because they claim them back on expenses. You then end up with a two-tier system. There has to be a system which is fair for all on needs-bases.

**James Naughtie**

As a personal anecdote, I was faced with a bill for residential parking outside my house which was £641. We were thinking of getting rid of the car anyway. I realised that, if we had bought a smaller car, it would be £122. That does not change my future, but it is quite a bit of money. It was a small thing that tripped a wire. We realised that if we gave up the larger car that we really do not need and bought a small car, we would save a lot of money. It was a moment that tipped us over the edge. I suddenly realised that this kind of thing could make a difference.

**Tony Travers**

It does work. One of the reasons it works is because you live in a city where there are plenty of alternative transport options. The problem about people living in the countryside and the cost of fuel means that living in the countryside is not economically sustainable. That is an awkwardness that you would have to live with. If we are going to start playing these games, the signal would be that the countryside is not sustainable. Now, just try selling that politically! Every time you hear a debate about carbon credits, remember that it will put the cost of living in rural areas very significantly, and bring it down in cities. This is not easy to sell.

**James Naughtie**

Andrew, is it true that the countryside is not sustainable?

**Andrew Curry**

When you look at some of the economics, over a long period of time with intensive energy and fuel shortages, you see that market towns become attractive. They have everything you will need.

**James Naughtie**

We are talking about small market towns with populations of approximately 10,000–30,000 people.

**Andrew Curry**

One of the reasons they are called market towns because they used to fulfil most of the day to day requirements of the people who live there. Tony has been talking about the countryside in quite a nice way, but most of the people who live in the countryside do not actually work in the countryside. Low energy costs allow people to make lifestyle choices which allow them to live desirable places and will drive 60-80 miles per day to work in different cities. That has become unsustainable. Perhaps that is a good thing.

**James Naughtie**

Perhaps there is something else going on. In remote rural areas, people made the decision that that is the lifestyle that they want, and they will pay extra for it, and they are sitting at home at the computer, running a home industry, for example. In Scotland and Ireland, that has become an extraordinarily development in the last 10–15 years.

**Andrew Curry**

Tony is correct. In terms of the rural infrastructure, as it presently exists, where local shops have disappeared due to larger supermarkets, if you start having high fuel costs or high carbon costs, the countryside as it is currently constructed becomes a horrible place to live. There is another part to that story. You have to make other changes in the way lives are structured.

**James Naughtie**

I want to try to pull together some of these strands before we open it up. We are getting onto the question of 'sustainability'. One of the interesting things about the Future Generator project, and the game that people can play in this place, is that you are invited to balance your desire against your expectation. What is intriguing is the question: how sustainable do we want to be? How sustainable can we be, economy and environmentally? That is the heart of this whole debate. Fiona, what is your sense of the degree to which people's desire is realistic, in terms of political thinking, elections, and Whitehall policy?

**Fiona Harvey**

Sadly, at the moment, it seems to be completely unrealistic as we have some Green measures being dropped left, right and centre by the government. These are in the areas of things like fuel tax rises and an economy that seems to be slowing down quite a lot. In the short term, we are not seeing a great deal of political courage.

**James Naughtie**

You believe that is what it needs?

**Fiona Harvey**

Yes it does. It needs a lot of courage to tell people who are paying more for their electricity that that is a good thing, but it is. It takes a lot of courage to tell people whose petrol prices are going up and whose food prices are going up that it is a good thing. However, all of these things are good things. You cannot get away from that. Food has been priced far too cheaply in the past. It has not been reflecting the true course of production because you have subsidies and so on.

**James Naughtie**

Has there not been some progress on that?

**Fiona Harvey**

There has been, but it is very difficult. When people are used to a long period of very low inflation – or even deflation – in many areas of their lives, it is difficult to tell them that things will now be much more expensive. However, it has been unrealistic. The social cost has not been built into these things. Why can you buy a DVD player for £20? It is because it was made in shocking conditions in a factory in China that you would be appalled to walk into. People have to realise that these are the real consequences of their purchasing decisions.

People will have to pay more for some things. How you work that out as a society, for example, if you want poor people not to lead worse lives and to maintain their standard of living, means that you have to tax rich people more. That is the real problem here.

**James Naughtie**

If we are talking about leadership, Chris, I remember when Jimmy Carter said that the energy crisis of the 1970s was the moral equivalent of the Third World War; he consigned himself, as far as the American people were concerned, to an early political grave. However, of course, he was right, was he not?

**Chris Luebke**

In many ways, yes, and that will play itself out in the next 20 years in many ways that we probably will not like. If you do not have energy, you do not have an economy.

**James Naughtie**

I have been in the US a few times in the last few months. There is an argument about 'energy independence'. That is, getting away from the \$4 gallon. This has been a shock to every American. It is an obsession there and they have no idea how to get out of it.

**Chris Luebke**

I remember when it was 16 cents a gallon. It is a question of what is 'normal'. For many citizens on the other side of the Atlantic, it is normal that the petrol is ridiculously cheap. It has a different normality. As we look around the world, and in our own country here, this will change what is 'normal'. Do you put on a jumper or do you turn on the heater? It is normal to put on the heater. You expect to be able to walk around in a T-shirt day and night, otherwise something is wrong.

If you talk to your grandparents, they have very different views.

Fiona mentioned the normality that we have become accustomed to. There is a cultural and a temporal aspect to that. As an example, I was in Tokyo recently. In Tokyo it is normal that a toilet will wash and dry your bottom. The seat is always warm. You push a button and instead of a flush, you receive a squirt of water.

In other parts of the world, for example, I was in Tanzania last week, the idea of a toilet in the Masai village was about as foreign as an electric washing toilet is for me from Tokyo. What is normal around the world is an important issue, especially when we are thinking about urban futures. It is about what we expect to be normal for our lives by 2050.

**James Naughtie**

Does that mean that the idea of sustainability, as an international phenomenon to which people will subscribe with the same kinds of objectives, is an utter illusion?

**Chris Luebke**

I am an eternal optimist so I will say no.

**James Naughtie**

You do not believe it?

**Chris Luebke**

I do believe it, but I think it will be at different times. I lived in Switzerland for a long time. There are many aspects of that society which are extremely sustainable. In Sweden, there are many aspects there that are incredibly sustainable. There is a respect and a systemic thinking that is ingrained in the society. We are getting there in the US. In some areas it is already there, but in other parts it is about as foreign as Mandarin is as a language.

**James Naughtie**

Are you talking about states such as Texas and Oregon?

**Chris Luebke**

Yes, frankly.

**James Naughtie**

Graham, are we getting sustainability in this country? In your business, for example, how does it affect day to day decisions?

**Graham Fisher**

We are getting sustainability, a piece at a time. Some of it is through regulation; some of it is through market forces.

**James Naughtie**

What does it mean to you in your business? Assuming you believe in it, what does it mean in the decisions that you make?

**Graham Fisher**

Good examples are the returning and recycling of products that previously would have gone to landfills and sending products to emerging countries.

**James Naughtie**

What is the difference now compared to five years ago?

**Graham Fisher**

A few years ago the sustainability would not have been as high on the agenda; the necessity to consider the impact of decisions made.

**James Naughtie**

What is the reaction from customers?

**Graham Fisher**

Customers are beginning to expect it. It is the same with the car business. For years people have been trying to break up cars and recycle them. Suddenly, with some legislation and a bit of market pressure, cars are now being made to be recycled. They are being made to come apart. Instead of 50 different plastics, it is down to four or five. Market forces, government forces and regulatory forces drive change. The customers then expect it. They would expect their cars to be taken away and responsibly disposed off.

**James Naughtie**

Before I ask people to come in, Andrew, please give us a last word on this whole sustainability argument. How much do you think that concept is starting to impinge on people's minds, particularly with this audience in London?

**Andrew Curry**

When you look at the social data we have, it is quite 'front of mind'. It does not necessarily always pass through to behaviour, however.

**James Naughtie**

What has been the difference in the last five years?

**Andrew Curry**

It is striking.

**James Naughtie**

If you use the word 'sustainability', what do people think it means?

**Andrew Curry**

It is in the awareness around indicators such as the imperative to recycle. We actually asked a question regarding banning SUVs from city centres. That has shot up in the last two or three years.

**James Naughtie**

I think we will all say 'yes' to that. I will now ask for some questions.

**Peter Gordon  
Consultant, Deltarell?**

I have many questions, but I will only raise a couple. My first question is with regards to technology. I was always taught that necessity is the mother of invention. We know that we have energy problems. Are we going to have big solutions that will solve the problems?

My second question is about whether people think rationally. It is assumed that people have cars. The high-speed train line to Paris stops to Ebbsfleet which is a place that you have to drive to. It does not stop at Ashford – where we have good rail connections – or at Stratford. There is a problem. I was told to feel guilty about flying. However, I do not have a car.

**James Naughtie**

Those are two good questions. Firstly, Chris, you will be a good person to answer this question. I assume that every car company in the US is now obsessed with notion of producing what Bill Clinton keeps calling the '100 miles per gallon car'. The assumption is that the company that creates it will be home and dry. Is anyone going to do it?

**Chris Luebke**

I must confess that I am not on a first-name basis with the CEOs of the car manufacturers. However, the answer is: of course they are. They have a reality of various contractual constraints which has bound them to producing certain platforms of cars over the next three years. They cannot get out of this, due to the unions. It is an interesting situation there. They could be producing a very different product, but, strangely, they cannot.

Necessity is the mother of invention. This is a great phrase. As we see the changes coming, it is very difficult to imagine what other modes of transport we might be seeing in urban environments. Perhaps we can come up with a few. There is a mixture of physical and virtual travel.

**James Naughtie**

Tony, there is the obvious example of trams. The notion of imaginative public transport schemes in this country. Do you think this will become a feature of our urban landscape?

**Tony Travers**

No. It is a very well-made point. There is no question that, when people from this country go to other cities, particularly in Europe, they will generally need properly formed public transport systems. They will need trams, underground railways, and so on, even in relatively small cities in continental Europe. However, in this country, Manchester has struggled to get tram lines. It has had to accept a complicated programme of road pricing in order to get them. The truth is, partly because of the centralised way we run Britain, it is virtually impossible for the national government to give permission for any of these big schemes. We have ended up with a country which has terribly poor urban transport. The answer, therefore, ought to be yes, but it is no.

Virtually all the tram schemes have been abandoned, apart from the ones we have. We have baleful public transport in every city in Britain other than London.

**James Naughtie**

Andrew, there is the issue here of the energy crisis and what to do about it. The second issue is about why there is not more rationality in public policy.

**Andrew Curry**

We could spend all evening on the second issue. I have a couple of observations here. People talk about emissions from cars a lot. 56% of the carbon in a vehicle is in the production process. That is an estimate by John Whitelegg. When that car rolls off the forecourt, it has already been responsible for 56% of the emissions of its life. Even improving the engine system would not help that much.

We have just done some work with the rail industry on sustainability. That was quite interesting. There were some quick wins. Simply by more efficient use of their stock and issuing an instruction to people in the maintenance yard that you should not idle the engine could, they believe, save approximately 20% of the energy used in the rail system. Beyond that, you then end up with a policy decision. Do you stay with the current train life of 30 years or do you bring it down to 20 years? This can bring significant differences in terms of the impact of the vehicles and their sustainability. You get these very complex long-term decisions. I agree with Tony that the UK has been generally appalling at anything that is either complex or long term.

In terms of aviation, the conversations I have had with aviation companies suggest that getting a non-carbon based fuel to fly a plane is a very long way off. It might be possible for cars and trains, but not for planes.

**Chris Luebke**

50–60% of the emissions are from the built environment and not from vehicles. Part of the study with the Foresight work was to look at the intelligent design of cities. This is something that we must do a better job of.

**James Naughtie**

With new house building at a halt, that is a real problem.

**Chris Luebke**

I do not think that is necessarily a bad thing.

**James Naughtie**

It may not be, but it means that the number of houses built on those principles will be small.

**Chris Luebke**

There are areas in which we are developing. There will be a lecture in this room on Dongtan shortly. This is a city we have tried to work on. It is looked at and conceived of as an eco-city. It will have all these intelligent aspects built in; not just technology, but thinking better about what we do with the fabric we have. This is really important. It is not enough to simply consider that cars are bad, but we need to consider the cities and the places we are making.

**Terence Bendixson**  
**Secretary of the Independent**  
**Transport Committee**

I would like to raise the unmentionable word of 'suburbs'. It is interesting that the word has yet to come up. The vast majority of people in this country live in suburbs. They do not work in city centres. They travel all over the place in their cars. Furthermore, many people are dreaming of doing that in the future. There are people who have not yet left the suburbs who are dreaming about it. I am sure there are some people in the suburbs who long to get into the city. However, that kind of lifestyle is sought by a minority. What does the panel see as the future of the suburbs and the future of that dream of a spacious house in a relatively green part of the world where we drive a car to go everywhere? What is the future of that dream? Will it be suppressed?

**James Naughtie**

Thank you. That is a very interesting question.

**Andrew Curry**

It will change. We have done some research on this quite recently. At the moment, houses are built at approximately 25 dwellings per hectare. That is the new suburb development. The research suggests that if you double that, you get many positive effects in terms of people not having to use their cars because there is enough density that many services can be supported in the area.

**James Naughtie**

Would the people be happier?

**Andrew Curry**

They may well be happy. 50 dwellings per hectare is not a particularly dense urban environment. One of the benefits of having 50 dwellings per hectare is that you have reasonable density of people which means that you will also have the public spaces and green spaces that you need within a short distance. All the economics stop being dependent on cheap energy.

**James Naughtie**

Are we not dependent on an enlightened government to produce the transport links that are necessary to allow people to make the choice not to use the car?

**Andrew Curry**

If it was above density, it could be self-sustaining. It depends on an enlightened government to not allow planning permission to go through for further building schemes which involve only five or six dwellings per hectare.

**Tony Travers**

Terence is onto something here. There is no doubt that, across the social spectrum, there is a desire to move out of towns and cities to live in suburbs or even lower density areas than that. If we did not build any more houses, you can be sure that, over time, only rich people would live in the countryside. This is more or less where we have got to. All that would happen is that people who are not capable of moving, would then move into the suburbs because they would be the people who could afford to live there. There are profound planning implications tied up in this; how far you can, in effect, force people to live in particular places. How authoritarian could the planning system be?

**James Naughtie**

You raised the question earlier about the centralised nature of our state, talking UK-wide in general. That is a fundamental question. David Cameron talks about the devolution of power to local communities. Would any government, wherever it sits on the political spectrum, be willing to seed strategic planning powers of the sort that are now exercised fundamentally from Whitehall?

**Tony Travers**

I do not think so. As you pointed out, oppositions are always 'localist'. They then get into government and suddenly decide to pull some of the levers. In fairness to the present government or any imaginable future government, it would require a radical and mildly authoritarian policy change to push against public desire. That is what makes this so difficult. You would be pushing against the public.

**James Naughtie**

It is about leadership.

**Tony Travers**

Leadership is a good way of putting it. It is leadership, but governments find leadership difficult.

**Andrew Curry**

Even with 50 dwellings per hectare, you can see get three-bedroomed houses with gardens. It is not as though you are living in a Victorian terrace.

**James Naughtie**

What is a picture of 50 dwellings per hectare?

**Chris Luebke**

It is similar to where I live. I live near St Albans; I live in the countryside; I live in the suburbs. I take a train. I do not drive anywhere. Frankly, it is a joy to be where I do not need to drive. The fact is that I live near a train line. I can take the bicycle, walk or take a scooter. The station is only one mile away. It is a suburb that was designed and built in the 1920s. When you remember the lessons we had here of the fabulous design of the suburbs, they were the garden cities. They were all conceived with the idea of being able to get out, but with a density and transportation in mind. When they were conceived, that was high technology. A railroad in 1901 was as high-tech as a 3G device is today. It is about using the new technology of the time to allow this idea of movement.

**Mike Barrish, Journalist**

There was a mention of correct pricing earlier on. It struck me that if you invert those words and add a suffix, you get 'pricing correctness' which is not too far away from 'political correctness'. It is an ideology. What has been implicit in this discussion is that all policies are a form of social engineering. They will be used to try to enforce lifestyles. An obvious example is the London Congestion Charge. It would not have existed had it not been for the previous mayor [inaudible].

**James Naughtie**

That is an important question. Would it be better for individuals if you did not have a belief in government that something had to be done, that a kind of regime would be there? Is there a way of running it where you simply tell people to get on with it? In the end, would they be better off?

**Tony Travers**

It is too late. The fact that people do not want to build on Green land – which, overwhelmingly people in Britain do not want to – is itself a massive constraint on everything that then happens. We are too small and too densely populated a country to get away from many of the constraints which are based on the desires that we collectively have, often contradictory. We are trapped. We want more houses, but not to use new land. Whilst you can accommodate that up to a point, it is only up to a point.

**Chris Luebke**

I concur, but we can look around Europe to find wonderful examples of high quality of life and ways of constructing the next 50 years of our society here. The gentleman makes a very good point about social engineering.

**James Naughtie**

He was suggesting constructing it. This suggests that someone is going to have in their head the ideal construction that will come out of it at the end of the day.

**Chris Luebke**

This is a challenge in any democracy. I do not think that democracy will be able to survive climate change, but I think that is another question for debate. Therefore, as tough decisions need to be made as we move ahead in the next 50 years, some of these policies might turn into constructive social engineering. Again, whether this is good or bad is another question for another debate. For example, the social engineering of our transportation systems.

**Pauline Ferguson**

With regards to the mode of transport for the 21st Century and the rhetorical question that was asked earlier, I believe we should use the 'beam me up, Scotty' Starship Enterprise mode of transport. My question is: in a country where every single government is trying to have the lowest taxation, how are you going to afford to put the investment into the changes that we need?

**James Naughtie**

It is again a leadership question. It is a question as to whether the sorts of changes that will deliver what people appear to want can be delivered at the lowest level of taxation, which is what they also want.

**Fiona Harvey**

You can change the way that things are taxed and change the things that are taxed. If you want to achieve environmental outcomes, then you tax things that cause environmental harm. Therefore, you put taxes on emissions or you put taxes on energy.

**James Naughtie**

Is it your assumption or your belief that a significant proportion of the voting population wants that to happen? In other words, that they favour a system that will mean a lot of stick as well as a lot of carrot, in taxation terms?

**Fiona Harvey**

No. I do not think people want that at all. I think people would rather have no tax and a fantastic health care system, a fantastic public transport system, and so on.

**James Naughtie**

Once they have that delusion out of their heads, do you think they are willing to buy the idea that some central brain in Whitehall should create a taxation system that will encourage people to do the right thing?

**Fiona Harvey**

I think people would buy it if they were given some carrots as well as some stick. If you told people that they would get a rebate on their council tax if they were more energy efficient, for example, then that would be a direct carrot/stick approach.

If you told people that you were going to shift the base of some taxation in this country, and reduce income taxes, but put more tax on emissions or fuel, then I believe that would be more difficult because you would be taxing bigger things. However, it is possible.

## **James Naughtie**

That would involve a government saying, 'We are going to do this because we believe it is enlightened. However, you will have to give us the power to make the decision as to what is good and what is bad.' Democratically speaking, that is a big thing to attempt to do.

## **Tony Travers**

Particularly as we know that, of all the people in society that nobody trusts, they trust politicians the least. There is a serious difficulty here. You are correct to point to leadership. We live in a country where, for years, we have moved towards ever more stealthy forms of taxation. The reason for that is that politicians have worked out that people will pay tax if they do not realise they are paying tax. The difficulty with the environmental taxes is that they have to be visible to work at all.

This morning's Daily Mail has a gleeful front page which is about the 'Chip and Bin' fiasco. It is jumping on the failure of the South Norfolk District Council's attempt to weigh rubbish. I can see how it is a fascinating mixture of Big Brother and visible charging. This is fatal. It would have to be very heavily incentivised. Even if you say that income tax will be cut or council tax will be cut, and then put the visible charges on, people will react against the visible charges and not thank you for cutting the others.

## **James Naughtie**

I would like to end the discussion by asking you each to briefly summarise the way ahead. Allowing people to make their choices is an issue. They might decide that sustainability is nonsense, but you have to free them to make the decision otherwise how can you have any credibility?

## **Chris Luebke**

Sustainability for everyone is becoming more a part of our vocabulary. The understanding of what it means varies around the world, as it does with each city in the UK. I do believe that, as the resource constraints affect us all intimately, we will make choices that we never imagined we would have to. Last year, for example, there were the hosepipe bans. We made those choices because we had to. That will be the main driver that will push us over the tipping point of the inversion between the 'developing countries' and ours. Those in developing countries were accustomed to power outages and water shortages. That is becoming our new reality. We will then look at the patterns of life. We will try to change our patterns of life for the better. I am an optimist. I believe in cities. I believe that is what we are going to see.

## **Graham Fisher**

I believe that the decisions are taken, one at a time, by individuals in a sequence. Given the right framework of explanation and information, sensible decisions will be taken. They will not simply be based on price. I can see a day where a product shows the amount of water that was consumed in its manufacture, for example, or the amount of carbon that was used.

**James Naughtie**

**Graham Fisher**

Do you think that most people will notice that?

I believe that, with education, people can and will make choices. The whole purpose of the Future Generator is that it is a series of individual choices that lead to a collective future. We must get the education underway. We also need an authority so that it is less fragmented. We do not want different factions contradicting each other. We need to get to the facts of the matter so that the intelligent consumer can decide.

**James Naughtie**

In that context, the Future Generator should hopefully be a surprise. It should not reinforce a prejudice, but force you to examine other things.

**Graham Fisher**

The web version is a great. There are some great graphics. You think you know where the questions are going, but you will hopefully be surprised and made to look at things in a different way. It is fun and it is stimulating.

**Fiona Harvey**

We have talked tonight mainly about what is happening in this country. The last thought I would like to bring to the discussion is that the consequences of climate change are not going to be felt as severely in this country as they will be in other countries. That goes from Southern Europe to Sub-Saharan Africa. The countries that will be worst hit are the countries that are least able to cope. That means developing countries. There was a report by the United Nations which showed that there was already an increase in the amount of refugees caused by climate change, and there would be much more of that in the future. Newspapers such as the Daily Mail, that are worried about immigration at the moment, will not know what is going to hit them! That might concentrate some people's minds. Hopefully this will be in a good way, rather than in an unpleasant authoritarian way that would have us all fingerprinted and microchipped.

**Andrew Curry**

Picking up on that note, I believe we will look back at the last 25 years and be astonished by the perfect calm that we descended into of easy money, cheap oil, cheap food, cheap goods, and so on. In 30–40 years, the global population will have increased by 50%. There will probably be food shortages, energy shortages, water shortages, and so on.

Picking up on something that Chris said about people's behaviour, in Australia, we have already seen people being killed in incidents of water rage. For example, a killing over a person was washing their car on a day when they were not supposed to.

Circumstances will change. I do not think we will have the luxury of complaining about social engineering or social intervention. The alternative will be the 'Energy Shock' world where the market will do it for you. This would be a very bloody way of resolving those issues.

The optimistic side of me is encouraged by the fact that the Transition Initiative movement is probably the fastest-growing local movement in the UK at the moment. It seems to be quite articulate and quite clear on issues. I am completely depressed by our politicians and our political systems who I believe are behind large chunks of the electorate and I do not think we are very well served by them.

## **James Naughtie**

Thank you very much for that. For those who have played the Future Generator, the number of people who think that the most likely future involves that 'Energy Shock' is 6%. The suggestion is that they do not know what is about to hit them. We shall see.

I would like to thank you all, on behalf of Sam Mullins and the London Transport Museum.