



A NEW PROGRAM
BY THE CITY
ON THE MOVE INSTITUTE

Public hearings of
AMERICAN EXPERTS by
EUROPEAN SPECIALISTS

“Climate change, urban mobility and *Cleantech*”

FOR A NEW KIND OF CONTRIBUTION TO THE DEBATE on
mobility issues and energy in the context of
climate change.
AT A TIME WHEN ASSESSMENTS ATTRIBUTE ONE THIRD OF
GREENHOUSE GAS EMISSIONS TO TRANSPORTATION.

Where next?

Minutes of the 5th session, January 14, 2010

Reminder of the program objectives and first lessons of the program

Taoufik SOUAMI

Lecturer at the French Institute of Urban Planning, scientific coordinator of the “Climate Change, Urban Mobility and Cleantech” program, IVM

Genesis of the project

This project was instigated by François Ascher following discussions on climate change and its economic consequences.

The starting point of the program is a somewhat schematic view in which Europe is seen as tackling climate change by reducing mobility, through public political action and the use of a quotas market, whilst the US relies on technological innovation, in partnership with the cities, industry and finance, with a focus on energy diversification. In fact, in Europe, industry is not inactive and there are also moves towards energy diversification, and in the US there are significant public policy initiatives in this domain.

The aim was to ask a certain number of experts a set of targeted questions. Four sessions have been held since last March. The first looks at markets, the second at the Californian paradox (environmental ambition versus the private car), the third at climate plans and the fourth at the new information and communication technologies.

First lessons from behind the scenes

City on the Move identified some thirty American experts for each session. None felt themselves to be qualified, on the grounds that they worked on particular aspects and didn't feel they had enough expertise to explore the other dimensions: transportation, parking, urban planning, climate... There seems to be a very high degree of fragmentation between experts researching these fields. The aim was to convince them to answer questions from outside their areas of expertise. Most of them believed that the Europeans are ahead of the Americans. So we find ourselves in a mirror image process where the questions are put together from a European perspective. The American narratives are broadly polarized: in one, the US is a model of what not to do; in the other, "their experiences will save the world".

First lessons from the process

For most of the US experts, public policy is a central priority for tackling climate change. Whilst they offer numerous operational solutions, there are certain gaps and misunderstandings, in particular on the role of political intervention in the market. On the European side, public policy is perceived as providing a framework for the market, whereas the US experts tend to see political intervention as a way of building different markets, capable of tackling the problems of mobility and climate change. Another difference: from the floor there was something of an expectation of hearing certain ideas or announcements on mobility in the US. For example, the experts who spoke in the second session developed intermediate solutions, around the role of the car in the city and in urban space. At this session, there were often questions from the floor about public transportation. The elephant in the room in all these sessions, absent yet implicit, was Americans' relationship with their cars.

First lessons from the presentations and discussions

The incremental approach emerged as dominant in the technical, political and economic domains. The aim is not to disrupt the operation of the city or transportation policies but to use existing tools to bring about incremental change. For example, in the economic sphere, the start-up is the dominant model. Companies don't change completely but introduce these changes gradually into their organization after testing them through these small structures. Another example: insurance companies are developing small products, step-by-step, without transforming their sector as a whole.

The approach to mobility is lateral, so mobility is not tackled in its totality. The States or cities develop targeted approaches, in particular on car ownership or energy substitution in certain parts of their territories.

The importance of “participatory marketing”—i.e. the focus on the user in the process of performing certain actions intended to reduce energy consumption—came out in the presentations. For example, San Francisco is developing a website which shows its city folk setting up solar panels...

In these circumstances, are there large-scale and generic models of mobility or a panoply of solutions that operate on different segments and scales?

Sequence 1: What discoveries, what surprises and what “disappointments”?

Are American companies and markets innovative in their response to climate change? How and in what respects do they innovate?

Nicolas CHAUDRON

Head of investment in new and sustainable technologies, AGF Private Equity.

My job is to identify start-ups in the bioindustries. I essentially invest in European companies but I’m particularly interested in American and world markets.

Globalization today is bringing economic prosperity to many more people, which means that the rules of the game on CO₂ emissions need to change. Moreover, globalization is accelerating the obsolescence of certain American sectors and the rise of certain Chinese sectors. The Americans are losing their industrial leadership and need to find sources of growth. How can this crisis be turned into an opportunity?

The main difference between the American and European models is the entrepreneurial spirit. This lack of fear of risk leads to a very different development path for innovations. At European level, we try to insert these innovations into a public policy framework. In Cleantech risk capital, 60% of the market is concentrated on the US, whilst in R&D the USA is behind Europe and Asia. Nonetheless, Europe still has a real advantage in terms of public awareness and the development of markets and renewable energy. In terms of academic research and innovation, European research is at a very high level. However, when it comes to converting this know-how into innovations, the Americans are moving ahead. In the solar field, the French were leaders until the 1990s but were overtaken when the market emerged. As regards government intervention, which is essential to the development of new sectors, the US has greater difficulty in introducing public policies. However, the session on California showed how the approaches vary from state to state even within the US.

On mobility, then, the question of electric vehicles is essential for the USA. Tesla Motors, a firm based in Silicon Valley, is developing electric cars and is America’s biggest player in this field. The rival French firm Saft, though years ahead in technical terms, is having trouble penetrating the US market. At the same time, Warren Buffet has invested in electric cars by buying into a Chinese company, BYD, which will probably be the first mass producer of electric cars by the end of 2010.

Another example is biofuels. In this field, the Europeans are scientifically very advanced. However, in the USA, the Department of Energy is financing industrial facilities, which means that most of the companies developing 2nd or 3rd generation agri-fuels are American.

Similarly, car pooling has been developed in the USA—*via* Zipcar—although the innovation is European in origin.

As regards the power grids, the US has quite an old network and should be able to introduce new generation power grids. They will very probably catch up.

Has climate change transformed approaches to mobility in the US? What's new in US transportation?

Jean-Pierre ORFEUIL

Chairman of the Scientific Council, IVM

Might climate change transform approaches to mobility in the US? Whilst I would be tempted to say no, I would nevertheless like to qualify my answer.

The new technologies are operating with no major capacity problems, whilst congestion remains a problem. At a time when traffic jams are making movement increasingly difficult, smarter infrastructure management could be helpful. Nonetheless, toll systems should only play an ancillary role.

I would also like to comment on the violence with which partisans of the new economy talk about the old economy. This is a phenomenon that is even more striking in the US than in Europe.

As regards transportation, there are striking and significant parallels between the US and Europe. Solutions to congestion that have already been applied are good for every country in the world. Public transportation is a really good thing. In the US, for example, pre-existing traffic management solutions are now “marketed” for CO₂.

Will CO₂ do more to boost this type of solution than congestion problems? I'm not sure that we can answer that. Amongst the concrete initiatives introduced, San Francisco's smart parking system seems a particularly interesting solution. GPS and digital tracking generate information that can be used, although there are not yet many concrete applications. On the subject of climate plans, the desire of citizens to be visible through their social networks, as shown in the example of San Francisco, can also be an interesting tool.

I would focus on two factors. In terms of the management of transportation systems, we are trapped in the sector's habitual frameworks and responses. Other professional sectors need to get involved in these

issues. Mobility is not just a question of transportation. In another area, there is real potential that also raises real problems of confidentiality. Digital tracking is an interesting option, but needs to be debated. Finally, if sustainable development concerns can provide a source of motivation, that may be a way to bring about change.

And what about land and the regions?

Michel MICHEAU

Professor of Urban Planning, Head of the Urban Planning Curriculum at Sciences Po

In a recent article in the *Monde*, a regional government officer stated that mobility policies had already been introduced. The question that remains is the coordination between these initiatives.

Glancing through the summary of our sessions, I note that we haven't covered the whole of the USA. When we learned about the situation in San Francisco, we only had a picture of the city centre and the main roads, not a global view. Our speakers didn't raise the question of the regions and the link between planning and mobility. In the end, I found I could quite easily identify with the caricature outlined by Taoufik Souami.

The American experience reflects the lack of options in the public finances for intervention to take place. Our European vision is more global (land regulation, mobility, etc.), whereas in the US we see citizen initiatives to develop the state of the built environment with no forward planning. In the US, professional lobbies are very powerful, whereas in France, political groupings lobby for more recognition of mobility needs. In this respect, politicians wear multiple caps and are very often active within the AMF (French Mayors' Association).

I was also struck by the playful aspect and the importance of image in the US: there is a huge emphasis on the individual. In France, our approach is more serious, dominated by a discourse designed to legitimize public action. There is a different relation between public and private. Finally, "role model" effects are important in Europe, with a degree of emulation between European cities, which does not exist in the US.

Tax policy allows us to act. In addition, we have a history of public transportation for which there is no equivalent in the US.

Mireille APEL-MULLER

I thought that there is an association of American cities.

Taoufik SOUAMI

It is true that there are networks of American cities that play an important role in climate change.

Feedback on the USA at Copenhagen

Emmanuel GOETZ

Energy and Climate Consultant, Futur Facteur 4

Futur Facteur 4 is a structure set up by Pierre Radanne to track the climate negotiations, in particular for the French-speaking African countries. We are trying to take forward climate plans in order to give French cities more leverage on these issues.

I will begin by giving feedback on the USA in Copenhagen. The goal of Copenhagen was to find a post-Kyoto system. The Kyoto system distinguishes between the so-called Annex 1 countries, which were supposed to reduce emissions or help other countries adapt to climate change, and developing countries. Over the first Kyoto period, which finishes at the end of 2012, only Europe is likely to meet its targets, in particular because of the fall in activity in the Central and Eastern European countries. Clearly, the system isn't working. The aim of the Copenhagen Summit was to reach an agreement on the maximum 2°C increase in temperature, so expectations were high. In these terms, the Copenhagen Summit is a failure, because it didn't establish a system for post-2012. The two biggest emitters—the USA and China—still see cutting CO₂ emissions as a policy that costs money.

Mireille APEL-MULLER

Were US cities present at the Summit?

Emmanuel GOETZ

Although the Copenhagen Summit is a failure, the forums at sub-national level generated a number of practical solutions. However, what is lacking is a strong incentive, such as a carbon tax, or international obligations backed by penalties. The need to act is now universal.

With regard to mobility, transportation will gradually become the main source of emissions, once the problem of heating is resolved. In this respect, there is the problem of international goods transportation, which will have an increasing impact.

Questions from the public

Abel GUGGENHEIM, Chairman, Quatre mètres cinquante

I haven't heard anyone point out that the situation varies widely in Europe. In fact, it's the first time that I've heard it said that car sharing came from the US. I've always heard the Swiss and German examples quoted.

Wouldn't it be helpful to look at European examples? The bicycle, very apparent in the city of Copenhagen, must have drawn the attention of the different players. In Copenhagen, more than 50% of journeys will soon be on bicycles.

Cathy DUBOIS, Director, R&D Consultants

The issue of innovation seems to me extremely important. Mr. Goetz, what are the concerns of the African countries and what possible solutions should we explore based on Southern Hemisphere perceptions?

Laure WAGNER, Communications Manager, Comuto

In France, we are lucky enough to have Comuto (website covoiturage.fr) which is considered to be the world's best car sharing website. We have 450,000 subscribers.

Emmanuel GOETZ

It is hard to make comparisons. Unfortunately, most of the people involved still think that we have something to teach the developing countries. Yet I think that the absence of waste is a very interesting example. In Brazil, not a single tin can evades the recycling system. Also, the Congo basin is lucky in that the whole world is interested in its forests. Once an international system is set up to quantify the CO₂ captured by good forest management, the deposits could be very significant.

Taoufik SOUAMI

To answer Mr. Guggenheim's question, we have deliberately masked Europe's diversity. On car sharing, technically it was invented in Europe. However, the entrepreneurial application took place elsewhere.

Nicolas CHAUDRON

There is a very strong entrepreneurial fabric in the US, unlike Europe, which has done more to develop the not-for-profit sector.

Vincent KAUFMANN

It's true that car sharing began as a not-for-profit innovation. But in Switzerland, for example, the original pioneers have all disappeared. The challenge is to move from the early activists and pioneers to develop a network based on business principles. The diversion via the US perhaps reflect our inability to move from small voluntary organizations to industrial applications.

Nicolas CHAUDRON

In the USA, the not-for-profit approach has been gradually superseded by free enterprise models.

Sequence 2: Where should our questions take us next? What questions should we explore in greater depth in the rest of the program?

The role of technological innovation at the Copenhagen Summit. Contributions from the USA, EU and other regions of the world

Edwin ZACCAI

Philosopher and specialist in sustainable development

I attended a session on technologies at the Copenhagen Summit. To go back to the comment on bicycles, it is certainly striking to see the number of people on bikes, despite the difficult weather conditions. On the other hand, it is also true that Copenhagen is very flat.

I would like to reiterate a number of contextual factors. Since Kyoto, greenhouse gas emissions have increased by 20%. Around 2040, and not at the end of the century, we expect global temperatures to have increased by 2°C. As regards technology, the text adopted at Copenhagen expresses the intention to set up an institution on the "Technology Mechanism", which will act on the basis of national priorities.

The International Energy Agency has produced a graph showing all the changes needed to achieve a virtuous curve (use of renewable energy, greater energy efficiency, etc.). Energy efficiency represents more than half the effort needed. The investment figure cited to achieve this scenario by 2030 is \$10,500 billion.

Between now and 2030, the OECD's emissions will not increase much. On the other hand, emissions are set to increase strongly in China, India and the developing countries. More than 80% of the increase will come from these countries.

A report produced by the European Greens and the Wuppertal Institute compared the green elements of recovery plans around the world. In France, the proportion of green initiatives is 21%, though this is still very low in terms of the amounts invested. In China, waste processing constitutes a significant aspect of the recovery plan. In the USA, there is significant investment in renewable energy, railways and waste management. In Europe, as represented by the European Commission, the investment focus is on CO₂ capture. As for investment in low carbon vehicles, it is higher in the USA than in Europe. Also on vehicles, fuel consumption standards are better in Europe than in the USA. Even California is still behind Europe.

According to a feature article in *The Economist* on December 3, 2009, 50% of new electricity capacity in the last six years has come in the form of renewable energy. Nevertheless, the failure to allocate a cost to a tonne of CO₂ is undoubtedly the biggest failure of the Copenhagen Summit. Moreover, energy innovation firms have suffered more from the recession: in recent months, Spain has lost 20,000 jobs in the solar sector. In China, wind power represents 0.4% of electricity production but has developed faster than expected, as has solar power, due to significant funding.

To finish, I would like to comment on a few macro factors. At a time when international regulatory mechanisms seem extremely complex, is it likely that they price will be set for a tonne of CO₂? Would this price include the possibility of underground storage or forest capture? People are worried about the speculative nature of the CO₂ market, despite the fact that it is also a way to obtain new finance. Finally, another stumbling block is verification, as well as the intellectual property implications of technology transfer. To conclude, I would note that the economic crisis has only slowed down the rise in emissions by two years, despite the scope of the crisis.

How do we make sense of the comparison with Europe?

Niels ALBERTSEN

Teacher and researcher in politics, landscape and urban planning at the School of Architecture, University of Århus, Specialist in Urban Issues

As a starting point for my paper, I will take three examples from the Danish context.

The first example is the "Copenhagen wheel", created by MIT's SENSEable Lab. It is a mechanism which fixes to the back wheel of a traditional bicycle and turns it into a hybrid bike. It can store the energy produced when the brakes are applied, and then use it on ascents. It can also connect to the phone system to get information on pollution or traffic. Copenhagen plans to buy 600 of these wheels to

encourage its employees to cycle, as part of a wider plan to have 50% of its citizens travelling by bicycle. Innovation needs to be seen in its global dimension, in particular in its connection with customers. This initiative also shows the importance of public-private partnerships. Here, the European connection is particularly important for the Americans. Scandinavian and European municipalities are relatively strong and have significant decision-making powers on matters of local urban transportation.

The second example is the development of the US firm Better Place, which provides services for electric cars in Denmark. Denmark is a very important country for this company, since distances there are relatively small and wind power, which can be used to recharge the cars, is highly developed due to State backing. Moreover, cars are heavily taxed in our country. Here again, an American initiative has been able to develop within particularly favorable European conditions.

The third example is the Århus municipal climate plan. With this plan, Århus aims to become carbon neutral in 2030, in particular by enhancing energy efficiency, increasing wind power and electrical transportation, developing bicycles and forests, and through active citizen participation. This climate plan is probably not radical enough and does not focus sufficiently on the problems of transportation and urban sprawl. Nevertheless, its potential should not be underestimated, in particular in a country where the public sector is influential.

What problems should we explore in the coming sessions? Innovation needs to play a bigger role in climate plans and, more broadly, in urban planning. François Ascher said that the megacity needs to be understood as an eclectic city with its centre, its suburbs, its periurban zones, its neo-rural areas and its big housing estates. Questions of climate, mobility and Cleantech need to be explored in relation to the problems of the megacity. As Luc Boltanski and Laurent Thévenot showed in *De la justification*, urban problems are governed by numerous factors (aesthetics, efficiency, markets, etc.). Urban development should not be governed exclusively by environmentalism. The city should not only be healthy and sustainable, but also, as Spinoza wrote, joyful.

So is there an American dream in Europe? Partly yes, in the sense that the US initiatives that develop in Europe can create the bases of a new model. Nonetheless, these initiatives are still too often aimed at central and local government. In the end, questions of climate change, urban mobility and Cleantech are profoundly political, marked by significant conflicts of interest and great inequalities between North and South. Even a world government and world sovereignty could not resolve these difficulties.

ICT and behavioral change: American approaches

Christian Licoppe, Professor specializing in the sociology of Information and Communication Technologies at Télécom ParisTech

I will talk about the role of communication and its links with mobility and sustainable development.

The US experiences are part of a global shift between design and technology. A critique of the old model focuses on the visual appearance of goods and services, and the separation between the surface and the interior of products. Many of these systems will be forgotten by users. The purpose of sustainable development is to “open up the boxes” in order to enhance material performance and collectivize use, by adopting a more collective approach.

The aim is to make formerly invisible indicators visible. So we are seeing a trend away from “careless” transportation towards transportation that requires work, in particular with electric vehicles.

From a collective perspective, approaches to infrastructures (car pooling and special fast lanes for shared vehicles on expressways, etc.) are being developed. There is the collectivization of sensor data on factors like pollution and traffic, in particular through live maps on the Internet. This should lead to the development of a dynamic of urban experience which will prompt people to change their behavior. These are general trends in sustainable development, transposed to the mobility sector.

In addition, there is a mismatch between the potential of the technology and what actually emerges. Highly versatile technologies are being produced to provide solutions of all kinds. The moment at which these technologies are “configured” is hidden and involves small groups (companies, lawyers, marketers, project teams, etc.), which develop commercial and legal considerations. This is particularly problematic with regard to spatial homogeneity. The social world is not homogeneous. There are powerful underlying political issues.

Finally, we need to move away from the illusion of ubiquitous technology. Dennis and Urry have explored what the world will look like after the car.¹ They contrast a neo-mediaeval scenario in which large-scale mobility has become a luxury, with a technological escape route based on the communication and mobility networks, hybrid forms of mobility and collective systems. Nevertheless, these scenarios would be extremely costly and would not be conceivable in the poor countries. Are they conceivable for the rich countries which are emerging from an economic crisis? This question cannot be considered from a purely technological perspective. Finally, going back over the different sessions we have attended, I would conclude by remarking that it is practically impossible to get high-tech experts to “abandon” their models.

¹ Kingsley Dennis, John Urry, *After the car*, Polity Press, Cambridge, 2009

Are these Americans so different from us? Can we identify “early adopters” of Cleantech in the US and in Europe? What is the role of users in these innovative processes? Contributions and stumbling blocks?

Vincent KAUFMANN

Sociologist, Professor at the Federal Institute of Technology, Lausanne, Mobility Specialist

I would like to talk about the lessons of Cleantech by comparing the USA and Europe. I will suggest four approaches, beginning with the business and usage dimensions of Cleantech.

Green business is on the rise both in Europe and the US. In this respect, the USA is not ahead of Europe. Though certain conditions favor some innovations over others, a complex-free green business sector is developing. Moreover, free-enterprise environmental political movements are emerging in northern Europe, especially in Germany and Switzerland.

Furthermore, business is strongly embedded in local or national conditions. The context of legislation and accessibility is therefore particularly important. Developing car sharing in a system with a good railway network is not the same as in a system with a poor network.

As regards usage, we are perhaps a little behind the US in ICT. In this respect, we need to consider the generational question and changes in the perception of privacy.

Finally, what is really so clean about Cleantech? ICT leads to greater rationalization and efficiency and in the direction of what François Ascher called “advanced modernity”. Nevertheless, at the same time ICT tends to make people more sedentary. For example, long-distance commuting requires good ICT equipment for people to work on the train. So whilst this technology may push back boundaries, is it really clean?