This is a raw transcript of the Flagship Urban Solutions session on Eco Cities of the World Cities Summit, held at Marina Bay Sands, Singapore, on 3 July 2012. The panel comprised:

- **Nicholas YOU**– MODERATOR
  Chairman, UII Assurance Group, World Business Council for Sustainable Development

- **CHEONG Koon Hean**
  CEO, Housing & Development Board, Singapore

- **Jacqueline CRAMER**
  Director, Utrecht Sustainability Institute

- **HO Tong Yen**
  CEO, Sino-Singapore Tianjin Eco-City Investment and Development Co. Ltd

- **Joaquim Oliveira MARTINS**
  Head of Division, Regional Development Policy, Organisation for Economic Co-operation and Development

[Start of Transcript]

Mr You: "Thank you very much and good afternoon ladies and gentlemen. Welcome to this session that promises to be a really exciting one because we're going to be talking about real life case studies on how cities are trying to green themselves. But before I introduce you to our prestigious panel of speakers this afternoon, I was asked by the organisers just to give a brief overview of the eco city concept. It actually, the eco city concept, precedes many of the other concepts about sustainable development and sustainable eco development. It actually has its roots back in the 1970s and it started in California where a group of people decided that they wanted to make their cities and communities more liveable and the concept is very much tied to the idea that a city is like a living organism and therefore each city is unique in its own character and has its own metabolism and has its own needs. So I think basically to make a pretty long story short, the eco city movement is very much a predecessor of all the other movements that we are talking about at this conference this week.

I would just like to point out a few areas where eco cities are similar to other movement and I think this is very important because first of all, first and foremost, I think the eco city concept was a reaction against the old urbanisation, if you wish, that was spread around the world after the Second World War. So one of the first principles of the eco city movement was that it was against urban sprawl, a direct consequence of market driven suburban development in the post-war period. It also questions a lot of assumptions and one of the assumptions that the eco city concept really underscored was the assumption that natural resources aren't endless and in abundant supply to be exploited including water, land and energy. So this back in the 1970s was really quite forward looking thinking and again because the concept was born before the first oil crisis even, it also questioned

the automobile a form of mobility, not only because of CO2 emissions, it was hardly an issue back in the 1970s, but because the co-founders of the eco city movement felt that individual motorized transport destroys the social and cultural fabric of cities and of communities.

Finally I think one of the really fundamental ideas that was born out of the eco-city movement was that it questions linear metabolism of cities, that cities are organisms where natural resources, water and energy come in and waste comes out. So basically with that historical overview of where eco city concept came from, we will proceed this afternoon with several presentations on how cities today are living up to that concept and what are they doing in terms of good and best practices to make themselves more ecological. The first speaker we have this afternoon is Professor Jacqueline Cramer but I understand it's pronounced 'Kra-mer' in your part of the world. She is director of the Utrecht Sustainability Institute and Professor in Sustainable Innovation at Utrecht University. More importantly, prior to her existing position, she was Minister of Housing, Spatial Planning and the Environment for the Labour Party between 2007 to 2010. She will talk to us about several case studies in Holland of how cities and communities are greening themselves. Please give a warm welcome to Professor Cramer."

Prof Cramer: "Good afternoon, ladies and gentlemen. I'm pleased to be here and talk about Transition Towards Sustainable Cities: Opportunities and Constraints. My name is Jacqueline Cramer and I'm working at Utrecht Sustainability Institute as has been said. Let me continue by a slide which has been addressed at this conference a couple of times, the urgency of the problem of sustainable cities. An increasing concentration of the world population lives in urban regions and particularly in megacities and in 2007 where about 50 per cent of the people and in 2050 it's expected to be 75 per cent.   A transition is necessary to build resilience and guarantee the quality of life in the cities and that implies that the present structures and systems have to be changed because they are inadequate at the moment. And in my view, sustainability can be a unifying concept and is not a fad. What is the challenge we are facing? Well, at present cities encounter a lot of problems. Let me summarise them very quickly and then go to the examples.

The mobility in cities is problematic. This morning it was mentioned also a couple of times. Furthermore, due to climate change, cites have to cope with climate adaptation in terms of heat stress, water scarcity and flooding and they also have to tackle climate mitigation. Moreover, growing scarcity of both energy and resources they really increased the urgency towards a more sustainable alternative in terms of changing fossil fuels into more renewable energy sources and get away with our throwaway society. The concentration of people in the city is of course also a problem leading to environmental pollution issues like the greenhouse gas emissions, the air and water quality problems and noise problems, and not to forget that also leads to socio-economic tensions. Urbanisation though can also offer opportunities and I like to stress that point in order to make our world a more sustainable world. We don't have to start from scratch. We already have experience in the Netherlands and also in other many countries with sustainable technologies. We can build an energy-producing house; see the left above. We also can use the traditional water bins to collect rainwater and we introduced the electric car and also put in place the first charging points, not only in the Netherlands but also elsewhere in the world.

However, all these examples are standalone examples and what we need to do is to move from the exciting pilot to large-scale initiatives and that means that we have to move towards integrated urban development with sustainability as the unifying concept. Thus urban planning and sustainable innovations go hand in hand and when I talk about sustainable innovations, I talk about finding a proper balance between four aspects - the economic viability of the city and vitality of the city, the intelligent logistics and sustainable mobility, the ecological sustainability in terms of minimizing the ecological footprint and not to forget the social participation, the cohesion and also the integration. Well, when I talk about sustainable innovations, I don't talk only about the technology. I want to stress that in order to make technology work, we need to include the end user as early as possible in the process. Take the example of the city of the sun in Heerhugowaard, a city in the Netherlands. We put in place solar energy in this neighbourhood together with smart grids but if the citizens don't understand the system what they actually do here, but if they don't understand the system, it is not going to work. Similarly, what we called the '*wadi's*' in Leidsche Rijn, also a neighbourhood in this case of Utrecht, *wadi*'s are actually very smart water system, drainage systems that collect rainwater and in the sub-soil it is biologically cleaned and reused again. Well, here again, if the citizen don't understand the system and washed their cars at the wrong place, the whole system will not work. So my first point is that it is very important to involve the end users as soon as possible in the process. Make them partner in the design and the decision-making and create joint ownership through participation for instance in local energy initiatives and make sure that they understand what the technology is all about by visualising the new concept and by story-telling, and the social media are of course fantastic to do that.

Sustainable urban development is really ambitious target to reach. We really need to integrate sustainability from the start when we design the new buildings and we need to keep sustainability in place also in the later phase, in the phase of production, building, managing, demolishing and pulling down but also bringing down the resources back into the cycle and that is what is meant by this picture. This is an example of a virtual city called Circle City in Rotterdam and I'm actually the virtual mayor of this city and the idea is to promote cooperation with different partners in the chain. In the case of Circle City, there was a social housing corporation, a cement producer, a municipal cleansing department and the demolition farm and together they manage to close the Circle and to this example, we want to promote also elsewhere in the Netherlands. Besides taking into account the whole chain from cradle to cradle, it is also important to develop areas where not only the service level but also what is needed in the subsoil is tuned to each other. Here is an example of a big renovation in the area of the central station in Utrecht, the area where my institute is located and many of my researchers are also involved in this project, and the whole idea about this project is that the renovation of the station, of the buildings, of the offices, of the houses are combined with a complete reconstruction of the subsoil. It is cleaned by new technology called bio-washing machine and that is cold and heat storage system and by the circulation of the ground water in the system, we manage to clean the subsoil and the ground water much quicker biologically than one we just leave it by itself. So there are all kinds of examples that integration of various aspects of urban planning is very crucial. And what is the added value?

Well, we can improve the efficiency tremendously in the whole building process and therefore also achieve enormous cost savings in terms of less failure cost and also less

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double work. Moreover, the societal merits are very high due to the acceptance of responsibility over the whole life cycle from cradle to cradle by the industry involved. And furthermore, we can expect an increased satisfaction of the end users and finally, and that's of course also very important, higher achievement in terms of sustainability. What does it mean with respect to the governance of integrated, I see that I still have less time than I expected, three minutes more, okay, there are actors involved and all have a role. It is not just a process steered by the government; all actors have to be involved. The knowledge institute should stress not only technology but also they should provide expertise on the transition and the organisation of the change and the economic aspect of the whole transition. The industry should take the lead and have the guts to do it in a construction of different companies under a strict and tight control and furthermore they have to take responsibility of the whole change.

The financial sector also, also the legal advisors, they can support the new financial arrangements that are necessary. And finally the citizens, well, instead of just observers, they are really participants and the government, well, in Europe, the governments have a lot of problem nowadays with the budget cuts and so on, but still they have a task, especially at local level, cities are very important in making the change. They can help the companies to really, by really supporting them in fulfilling the mission of the transition towards sustainable urban regions. They can remove barriers, they can guarantee level playing field and they can promote creativity and innovation and very important, they can include sustainability in procurement requirements. But they have to leave room for the companies to really make the right choices. They, the government formulate the objectives but it is up to the companies to find the right means. And finally, it's important to make sure that the execution of the overall interval project is in the hands of a strong project team with a robust mandate. Well, and what does it mean? When we work like that, we can really achieve sustainable urban development and if we are able to do that, we can achieve a lot of opportunities and societal merits. Thank you very much."

Mr You: "For those of you who comes from Singapore, the next speaker needs no introduction but since not all of you come from Singapore, it is my duty and pleasure to introduce you to Dr Cheong who is currently the Chief Executive Officer of the Housing Development Board of Singapore since August 2010. She oversees the construction and development of one million public housing units and as the MC briefly alluded to it, Singapore has a public housing policy that really has contributed tremendously to the social advancement and the development of this nation. She is also concurrently the Deputy Secretary of Special Duties in the Ministry of National Development and prior to this, that is why we are really blessed with her presence this afternoon, she was also CEO of Urban Redevelopment Authority of Singapore where she, including many other initiatives and projects, also participated in spearheading the transformation of the Marina Bay that we are now meeting at. So please without further ado, Dr Cheong, welcome."

Dr Cheong: "Well, good afternoon everyone. I'm mindful of the time so I will have to speed up. We already talked about the challenges of the cities and of course we know that many cities respond by building for example eco cities to seek urban solutions. This is all very encouraging but my view is that eco cities really need to be placed within the context of national strategies, which supports sustainable development and growth, and I'd like to just illustrate this using the Singapore example. Like many cities, we face a lot of challenges

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of accommodating growth but we are very small. We have 5.2 million people in 710 square kilometres, that's very tiny, and developing in a sustainable is crucial for our survival and for Singapore we adopt a very holistic approach looking at economic, social and environmental sustainability. And planning at the local level to me has to be fully integrated with national principles and initiatives of sustainability. So what I'm going to do is I'm going to set the backdrop to talk about an eco city that we did but in the backdrop of national objectives.

At the national level, Singapore has very long term comprehensive approach to planning. We look at planning in terms of many decades into the future. Why do we do this? Because basically planners and decision makers have to make trade-offs and most importantly, we have to prioritise our infrastructure because we have limited resources. Some of the key principles we use in our planning is that first we decentralize our economic activity to several notes outside the city because this brings jobs closer to homes and reduces travel into the city. Secondly, Singapore is a compact and transit-oriented city. We believe in high density, we encourage the use of public transport and we cluster high-density development around transport notes for convenience and we do believe in an extensive rail network. So we are going to increase our rail network from 148 kilometres today to about 278 kilometres by 2020 and of course, we need policy. Since the 1970s, we have introduced congestion pricing so it's very expensive to own a car and to drive one in Singapore.

Our planning also emphasises a very high quality of life. Surprisingly, Singapore has become greener even as we have urbanised over the years and we will continue to increase our park space and we have to create virtual space to expand our recreation network. We introduced the concept of park connectors. You can walk, job or cycle along these park connectors, which are linked up to all the major parks and the coast, for example, this is what we have today. We're increasing the park connector network over the next 10 to 15 years and eventually we will build a 150-kilometre around the island route. Singapore is also guided by a blueprint for sustainable developments setting very national goals for sustainability and this really guides a lot of the detailed planning at the local level for us. And as an additional target, we will reduce Singapore's carbon emission by 16 per cent, below business as usual levels, by 2020 if there is a global agreement reached. Water, water is interesting. We have four taps. One we buy some water from Malaysia; second, we have desalination; third, we have New Water which is fully recycling waste water and fourth we very hard and it comes down from the sky but we collect as much as we can and this sets the backdrop for something that I will explain later on. Waste, we have invested in effective waste management but we don't have enough landfill. So we recycle, it's very important, we recycle more than half our waste and we incinerate almost all the rest and today only three per cent ends up in a landfill which is offshore between two islands.

Housing, of course, is very important for us. I come from HDB, Housing Development Board. We've built over a million flats and 95 per cent of our residents own their own flats. Only five per cent is rental and that brings me to the next point. We want to continue to harness new ideas and innovations for our town. So one of the projects is Punggol Eco Town, which is going to be the sustainable waterfront town in the tropics. It is, sorry, it just to the northeast of Singapore and used to be an old fishing village. We looked at many, many eco cities around the world but we are different. We are different because basically our focus is on high-density cities. We are in the tropics and sub tropics. We have to make

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our eco city, eco town, affordable, replicable and scalable. So we developed this framework, it all look very complicated, where we have set out objectives for the development of this eco town. Let me just give you an example. So for example, one of the objectives is to have low carbon environment and to do this, we work out detailed strategies and initiatives and the KPIs to track our efforts and these are all linked, sorry about that, and these are all linked to national KPIs for sustainability. I won't go into the details but trust me, we have worked out the KPIs. Now from the onset, Punggol has already been planned to promote sustainable living and it's planned with smaller estates that are compact and friendly. We are well served by a national rail network, connected to the city by the northeast sector line and within the town, sorry, as the northeast sector line comes in, it's complimented by a slew of rail network, light rail network, so you are actually no more than 350 metres to 400 metres from any station. This is what the light rail looks like. Overlaying that is a whole layer of extensive cycling network and which is spread throughout the town. And the town is planned comprehensively with a lot of facilities with shops clustered at the LRT stations and we have also planned it with schools, with a good spread of schools and residents who choose to send their children to the primary schools in the neighbourhood should not walk more than 400 metres to the school. And of course, there are many other social facilities like churches, temples, ex cetera. More importantly, there's a whole layer of green network and parks and coastal promenades, which residents can access, as you can see. And all these network is linked to the national work of the park connectors, which I've talked about, that's how it fits in and this is what it looks like. It doesn't look like Singapore actually but these are the promenades around the area.

Another interesting idea was, you recalled I talked about the national taps that we have and we have to capture all the rains in the sky. So what we did was we have dammed up two rivers to form fresh water reservoirs and instead of linking it with a pipe to optimize the storage of the reservoirs, what we have done is we have built a river to connect them and today this is wonderful recreation facility for our residents and people called it the Venice of Singapore. So it's been a very good facility for our residents and it also gives us a lot of opportunities to do very interesting urban design concepts where we looked at building forms, signature green spaces, court yards, terraces, view corridors. So some of the new designs that are under construction for example have a lot of terraces and roof gardens, some have court yards which are linked to the Punggol water way, and what we are doing is we are modelling the whole town to understand the microclimates. We have the hot spots so that we can reduce the heat and where are the wind flows so we can capture the wind flows. This is a tropical climate; we need wind flows, probably unlike maybe Europe. So you find that for every project that we now design, we can actually model the wind flows that go through the town and capture the wind and Punggol will serve as a living laboratory to test new ideas and technologies.

We are focusing on fives areas – energy, urban mobility, water resources and waste and maintenance. So very quickly, energy, very obvious we are looking at PVs, energy efficient lighting, elevator and energy regeneration system. We are using kinetic energy and movement of the elevator to generate energy for ourselves and smart metres. And of course, car sharing schemes, which was talked about, and electric vehicles and we are also looking at water solutions using rainwater harvesting, water efficient fittings and if you look at the lady who is washing her hands, she washes it above the system, water is captured and that is used for flushing, very simple idea to save water. And of course we are

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also looking at water sensitive urban design while weaving in plants to filter water before they are discharged into the reservoirs and so we are also looking at freshwater mangroves. Now, also resources and waste, we have introduced a separate centralized chute for recyclables and as a result, the number of recyclables have increased by four times, that's very significant. We also look at a concrete utilisation index to minimize the use of concrete and also studying maintenance optimisation solutions like self-cleansing paint for our buildings. A lot of these ideas would be found in a precinct that has been completed called Treelodge@Punggol and I encourage you to pay a visit. I think the site visit is tomorrow so you're most welcomed visitors.

Now we are working very closely with tertiary institutions and private companies to position Punggol as a living laboratory and we want to facilitate test bedding of emerging technologies and policies so if successful, many of these urban solutions can be shared with many other cities. And we're also looking at urban design of the entire area for the phase two; we're relooking at it and we 're looking at different new typologies we can explore to improve the way we plan the environment. So this is a underway and I hope when we are ready we can share with you. We have also embarked on a collaboration with Cam Dresser & McKee to develop an urban system model. This model essentially studies the inter-relationship between urban form, infrastructure and technology alternatives and evaluates whether we are meeting our sustainability targets. So this will help HDB to make informed decisions about which initiatives we should be implementing. We also work very closely with industries, so for example, we have a solar leasing model and we're trying to do things where it costs us nothing. So in the solar leasing model, the company supplies the PV panels and they make the money through long-term payments through the savings in energy. The residents pay nothing but they get cheaper electricity but right now HDB still has to subsidise a little bit to get the pilot off the ground. But the price of PV has come down tremendously and just in a matter of a couple of years, we should reach grid parity and we don' have to hopefully pay anything for this. And course community is very important, as Prof Cramer has said. We have to work with the community. Green towns need green people. You can't have green towns without green people so we are getting our students, our residents involved with green living and we need them to try to activate water way because we can only provide the hardware but we need the people to activate the place-making activities and the software. And we are also mindful of retaining heritage memories so much of the design actually has put in place memories of the old Punggol. If you go down and have a look, you will see signs of it throughout the town.

So to summarise, I think the critical success factors really are, it's really important for us to approach eco towns or eco cities in a very holistic manner, balancing economic, environmental and social considerations. We have to be long term, integrated and comprehensive and sustainable principles must cascade from a national level to a local level and of course, for us, we are in public housing; we are not in private housing. We look for affordable and viable solutions and business models, which are scalable and replicable and we want to work in partnership with the private sector and the community. Just one last point before Nicholas throws me off the stage, to start on a green field site is often not too difficult. Our great challenge is we have an existing one million flats, which we need to go back and retrofit. So we are attempting to do this through a modest pilot project in Jurong East and we call this programme the HDB's *greenprint* and we are going to try and go back to retrofit and relook at what we can do to make the existing towns a little bit more

sustainable than what they were when we first build them. I think it's going to be very challenging, far more challenging than building a new town but we will try. With 82 per cent of Singapore's population living in HDB towns, if we can make all our HDB towns more sustainable, then I believe Singapore will be able to achieve many of its national sustainable targets. Thank you very much."

Mr You: "Wow, what a presentation, 61 slides in 15 minutes and I have the honour now to invite Mr Joaquim Oliveira Martins who is the Head of the OECD Regional Development Policy Division. He currently has projects that cover the determinants and distribution of regional growth, regional innovation, urban development and green growth and multi-level governance. He was the former Head of the Structural Economic Statistics Division, focusing on trade & globalisation indicators, productivity measurement and business statistics, please."

Mr Martins: "Good afternoon, I'm really extremely pleased to be here and really like to thank the organisers for this invitation. This has been for me a tremendous experience first time in Singapore and this impressive city, this impressive conference and this kind of public attendees for me is a great experience and I really hope to bring back all the lessons of the city back to Paris. So my presentation is basically about three points. I will try to explain this connection between smart cities, eco cities and the concept developed by OECD on green growth. Then I will talk about case studies because OECD is a lot about policy experimentation and the comparison of case studies, and then I will finish with the issue of financing of green growth because of course, the issue of financing in the current environment is extremely challenging issue. So some points about this issue of smart cities, eco cities. A lot of adjectives in these days about cities - compact cities, green cities, eco cities, you name it. At the OECD, we try to make some sense to get a sort of federating sort of concept. The smart city is all about innovation, technology, growth efficiency. Of course, the eco cities concept, as you described so well, is more about this idea of providing services to growth and development in the way that reduces the environmental impact in getting, you described very well this idea of metabolism (?) of cities. The idea of green growth is actually taking this link between efficiency, growth and green in a very positive and complimentary way and I'm really, my background, I'm an economist actually. I did a lot of macroeconomics and economics for a long, long time have seen environment and growth as a trade off. So there is a tension. You want to reduce emissions, well, you have to give up a bit of energy consumption so you have to give up a bit o growth.   And I think what we are sort of discovering now these two concepts can be really complimentary and synergetic so this is what we see as being trying to develop around this idea of green growth.

So green growth is about actually taking the opportunity around the crisis. The crisis of course is terrible, a lot of countries are struggling with it but of course it's also an opportunity to doing things differently and we should not in some sense go back to business as usual and sort of develop and put in place growth engine as they were in the past. So this is the idea about green growth, which is really a sort of triangle between this efficiency growth nexus. Of course, the environmental sustainability is in the nexus but also very important the social and equity dimensions. So it's like a triangle and this triangle needs to be complimentary and not in tension, not in a sort of trade off and of course, this complementary state is not a natural state of the world. If you do nothing, most of it is

going to be about tensions. For example, in a central government, the tensions can arise between the Energy Ministry and Environmental Ministry for example, and creating an integrated policy approach is something that really needs to be built and the idea is that building is complimentary actually works much better if we were to do it at the right scale. We deal, at the OECD, a lot with central governments and it's extremely difficult to get this integration of policies. People keep talking about the old government view. It's very, very difficult to actually get this thing right. When you do this policy integration, this complementary at rival cities or even for example my division between rural areas and the production of renewable energies seems to be much more concrete and in complementary way. So this logic for tackling this green growth at the urban is very strong. Of course, cities, we know are engines and you need new sources of growth, this complementary can be strong and they're constructed at the city level and of course cities are also very important focus with another concept that has been development in cities, which is this idea of inclusive growth. In many countries, most of the inequalities, disparities are actually within cities, within regions rather than across regions. The great disparities are not anymore between rural and urban. It's actually inside urban.

So the logic for the city scale actually came, this sort of synergy between green and growth comes from the fact that actually at the city scale you find that environmental quality is a factor of economic efficiency and attractiveness. We did a lot of simulations trying to understand on this idea of attractiveness. There is component there that is related to environmental quality, we see that indeed the things are not contradictory and they couldn't have actually a much more attractive cities. And cities now are competing a lot on for example on the attraction of high skilled workers, ICT, innovation industries and brains and these people, these segments, these sectors like a good environment quality. So environmental quality and efficiency growth and innovation are not at all in tension but on the contrary can be extremely complementary. There is another stronger argument too, in fact, that the urban form is absolutely essential. People have been talking about the problem of energy mix, shifting away from coal to gas, oil and then even to renewable sources of energy, carbon-free sources of energy. But actually there is a very important factor, which is the urban form that can be as important as the energy mix. And when you look at cities, you put the same number of people with more or less the same number of level of income, the same level of relative energy prices and you put in a sort of very compact, more dense urban form, you put them, sorry, oops, in a sort of much more sprawl urban form and you get the intensity of emissions that can vary from one to three, one to three. So that means that can be as important as shifting for example away from coal towards gas or towards carbon-free form. And this is important? This is important because a lot of cities in the emerging market and developing world are, this process of urbanisation is very fast and the density is increasing a lot.

One of the features of economic development in cities is the lowering of economic densities. In some sense, developments when countries get rich people want to have more space, right? But whether these cities are going to develop towards a sort of European-Asian model of a rather high-density city or towards say a more US-based model with a very low density will have tremendous impact on energy efficiency and the emissions generated by the cities and then the impact on the climate change. So this is a very important argument to look at the urban form and do seem in early stage because of course changing the form of a city is something that's sometimes extremely difficult, right, and to

do that at an early stage you can have a very strong impact. So what we have been seeing OECD is the decoupling between land use and city growth, population growth as working in some countries but many of the country, this decoupling didn't work and actually many cities use the land as being much, much greater than actually the growth of the city. And, of course, this issue of intensity of using energy and resources, of course, as you know will be concentrated in the emerging developing countries. Eighty per cent of the growth over the next 50-60 years is going to be concentrated in these countries.

So what are the good news? The good news is that there is a lot of policy experimentation so we don't know this solution, we don't have this miracle model out there that everybody could follow but there is a lot of policy experimentation. In some sense, we have to discover altogether what is this new path towards, this new development model, towards the green development model. So there's a lot of policy experimentation. I'm going to skip very quickly over this sort of like eight, nine slides of different sorts of policy experimentations. For example, in the way you want to reduce urban sprawl, you have a lot at local government level, central government and all levels of government, you have a lot of instruments related to taxation that actually can green the system. Currently, many OECD countries, the tax system is not green and actually favours actually favours the more broad economy. The tax system without in some sense increasing the distortions related with the tax system, you can actually green it and make it much more environmental-friendly. We have a lot of experience - preferential property tax, two-rate (?) property tax, special area tax, development fees. Smarter growth, we can also in some sense induce the countries the cities to grow in a much more smarter way through for example mixed-use development, transit-oriented development. There is a list sort of of a good cases and best practices that we have been collecting.

Privileging public transit and green mobility, again, there is a lot of experimentation in the OECD and non-OECD countries, bus rapid transit sort of systems in cities like BRT, which is a very famous case, Bogota, Mexico City. Of course, the use of bikes, now in Paris I just leave my car, you are Netherlands, you are used to bikes but in Paris, it was not a habit of Parisians to use bikes. Now it's become a sort of habit and people don't use cars anymore and it has even become sort of fashionable to actually use a bike in Paris. Financing public transit, policy solution, value-capture tax for example. You can value, you can put a price on the fact when you have a good infrastructure and investment. This raises the value of the area and you can actually use this, this as a basis for taxing. You can use congestion charges, occupancy toll lines, parking charges and fees. On the waste policies again, a lot of ideas spreading, for example, policy solutions like the energy supply companies that actually helps citizens' need to do this retrofitting and improve the environmental quality on their homes. The Toronto mayor, talked about the tower renewal programme, the 50-50 programme in Japan where you actually subsidise when people sort of achieve a substantial energy density, the Berkeley First. Water treatment, policy solutions like the water pricing schemes, the Toronto WaterSaver programme, the Melbourne purple pipes, just introducing these different types of water, a water that is drinkable and water that is less quality but can used for all kinds of things like washing cars or flushing, et cetera. Of course, these required the parallel system of distribution but these induces the huge, huge gains in terms of water efficiency.

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Waste diversion, recycling waste energy, San Francisco, Chicago, Horsholm in Denmark, Amsterdam, a lot of cases build a skilled workforce for the green economy. Of course, we need, as you said so beautifully, you don't have green cities if you don't have green people. And you need to train and inform people so there's a lot of success stories for example in Germany, this idea of a solar valley or in Massachusetts, the Clean Energy Centre - these are centres for training and education of people. And of course, about, this green growth is about innovation so there is a number of success stories, the Milwaukee Water Council, for example, the Environmental Water Academy in Denmark which is a joint venture between Denmark and Sweden and again this solar valley in Germany. So I went quickly to these cases but I mean my most important point is this policy experimentation. And by changing, dialoguing, we have maximised in some sense the chances to actually find if given important time a sort of senses about what is the best practices and of course, these will change over time. What is considered as best practices, even at a point in time may evolve in the future but we have, this is a search process. This is the most important message is that we have to put in place this search process to discover ourselves, sort of self discovery what green growth is all about.

I want to finish with a sort of important point. Could you put it again? Can I do it? I have to skip. Can you put it again the last slide please? The last point is about financing. Why? Because of course these green growth strategy needs financing and as you know there is a lot of constraints now, all in Europe but elsewhere in the world, even in countries that are in very sort of sound fiscal situation, take for example Australia, very low ratio of debt to GDP, budget surplus. Even these countries are putting in place fiscal, very tight fiscal austerity programmes, Canada for example. So sources for financing these green growths sort of projects and infrastructure are really very, very tight and the demands are huge. In the OECD, we estimated that around 2030, we need like between \$35-\$40 trillion of infrastructure investments. So how can we finance these investments? Well, we have in Chicago in March a sort of event that we, a lot of the OECD, a roundtable of mayors and ministers because actually there are a few lockers (?) where the central government can talk with some national governments, with mayor. So out of these roundtable of mayors and ministers, there was Mayor Bloomberg, Mayor Rahm Emmanuel from Chicago, several people from the US Government and also a lot of ministers and mayors from cities and governments in the OECD, we talked about this Chicago Proposal on how to finance this green growth and this basically is based on three main principles. Some things that ensure the policy alignment across levels of government and other that make the existing sources of growth greener like, I give examples of the tax system, and the final is to tap new sources of finance and of course the participation of the private sector – the famous public-private partnership can be designed in order to make it more sort of efficient. So this is what this Chicago Proposal was about and I just finished my time. I would like to thank you for your attention. Thank you very much."

Mr You: "Everybody is making my task very easy here, keeping time, perfect. Our next speaker, Mr Ho Tong Yen, was appointed the Chief Executive of the Sino-Singapore Tianjin Eco-City Investment and Development Company on 1 January 2011. Mr. Ho is concurrently an adviser on the eco-city project in the Ministry of National Development in Singapore, and a board member of Singapore's Building and Construction Authority, and I would also like to welcome as the next Ambassador of Singapore to the United Nations, a former co-diplomat, please."

Mr Ho: "Distinguished guests, ladies and gentlemen, let us wait awhile for the slides to come on. Thank you. Now I'm pleased to speak to you today about eco cities, whether they are a fad or a sustainable option and I will do so with reference to the Sino-Singapore Tianjin Eco City, which we are developing and I think it provides a real life example against which we can draw useful conclusions. Now firstly, let me recall briefly recall the evolution of eco cities and sustainable development, a point that Mr Nicholas You also mentioned earlier. The term sustainable development first became popular and was defined in 1987 by the report of the World of the Commission on Environment and Development. Coincidentally in the same year, Richard Register, who coined the term eco city around 1979, he was one of the people in California whom Mr You talked about, he first used this term in the title of his book, Eco City Berkley. The point I'm making is, the discussion on eco city as long as the discussion, is as old, if not older, than the discussion on sustainable development itself. The eco city is therefore not a new concept and if it is a fad, it is one that has been with us for a long time. Unfortunately, for the two decades thereafter, there was limited success in turning the concept of eco city in a viable proposition. The world was increasingly plagued by environmental degradation and climate change. In 2008, more than half the world's population live in towns and cities. The need for sustainable cities had therefore become ever more pressing and governments around the world were looking for solutions to the sustainability challenges facing cities. This is the backdrop against the Tianjin Eco City came into existence.

In April 2007, Singapore's then Senior Minister Goh Chok Tong proposed to Chinese Premier Wen Jiabao that the two countries jointly build an eco city. Premier Wen welcomed the proposal immediately. Seven months later, the Prime Ministers of the two countries signed a framework agreement to jointly build the Sino-Singapore Eco City in the port city of Tianjin, which is less than an hour by train from Beijing. One of the contradictions in some so-called eco developments around the world is the destruction of large farmland and fragile eco systems in the name of building an eco city. However, this is not a problem for the Tianjin Eco City. Let me show you why. In 2008, this was the site of the Eco City. It comprised non-arable land, deserted salt farms and polluted water. There was nothing inherently eco about this site. In fact, this was one of the conditions set by the Chinese Government that the eco city must be built on non-farmland that's lacking in freshwater. While this poses considerable challenges on its development, it also ensures that whatever we build here can be replicated elsewhere. Now I'd like to draw your attention to the red and white bridge, which gives you a frame of reference as we switch to the next slide.

Today, the wasteland of the past is replaced by an emerging city, green buildings, nicely landscape streets and cycling paths, winter visor and solar panels to tap renewable energy. There are green private homes, there's also high quality public housing developed with reference to the experience of the Singapore Housing Development Board in public housing in Singapore. There are also different business and industrial parks to provide economic vibrancy for the city and jobs for the residents. The development of the eco city is guided by two main sets of principles of what we call three capabilities and the three harmonies. Now the three capabilities require that the eco city must be practical, scalable and replicable. That means that the solutions we implement here must be affordable and can be replicated in other cities in China, in Asia and elsewhere. The three harmonies are conceptually similar to the three pillars of sustainable development. There are three

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aspects of sustainability, harmony between people and the environment, harmony between people and the economy and finally, harmony between people and people. Various levels of the two governments are involved in the project. It is overseen by a joint steering council chaired by the Deputy Prime Ministers of the two countries. Below this, there are committees involving Ministers and officials who meet regularly to guide the city's development. Singapore ministries and agencies such as the Ministry of National Development, HDB, the URA and so on are actively involved in the development of the Tianjin Eco City.

While this is a government-to-government project, it is driven on a commercial basis by the private sector, which is core to ensuring that this project is practical and replicable. My company SSTEC is 50-50 joint venture between the Singapore consortium led by the Keppel Group, which contributes the capital, and the Chinese consortium, which contributes the land, and we are the master developer of the Tianjin Eco City. Our goal is to complete the 30-square kilometre eco city over a 10 to 15 year time frame with a long-term vision of supporting a population of around 300,000 people. In the initial phase, we are working on an approximately three square-kilometre start-up area, which is scheduled to be completed by the end of next year. On this screen, you can see a photo of the start-up area taken about a month ago. People sometimes ask because there are so many different developments around the world that has to be green, what is so eco about the Tianjin Eco City? Let me highlight some of the ways that we are different from other projects.

When talking about eco city, experts always point to criteria such as those shown on the slide. Was it build at the expense of large eco system? Is this city which is car-friendly or pedestrian friendly? Are there many green buildings? Does it tap renewable energy? I'm pleased to say that the Tianjin Eco City meets the criteria imposed by the experts. For a start, a green city begins with green masterplanning. The masterplanning of the Tianjin Eco City was jointly done by experts from China and Singapore and combines the ideas and best practices from both sides. The eco city was designed to encourage walkability. The basic building block is an eco cell roughly 400 metres by 400 meters with community walkways cutting through them thus allowing residents to walk through the blocks instead of having to walk around them. There is also a 12-kilometer long linear park or what we called the 'eco valley' running through the eco city and connecting all its major centres and notes (?). For Singaporeans, they can think it's somewhat like an expanded park connector. The eco city will also have a tramline running along it. It therefore is a key feature promoting walking, cycling and the use of public transport. The eco city is envisaged to be a compact mixed used development. Let us zoom in to one corner of the start-up area to illustrate this point. For example, the eco business park at the bottom of the picture is located adjacent to the public housing estate as well as private condominiums, thus ensuring that a mix of employees can live in close proximity to their workplace. There are also commercial centres, schools and neighbourhood centres, all located nearby. Most of one's daily needs can therefore be met within walking distance. This is also a high-density development, which optimizes the use of land something of particular importance in countries like China with a large population.

We also have objective measures with what we are trying to achieve. Some eco cities are as green as they profess to be. In contrast, the Tianjin Eco City has a set of 22 quantitative and four qualitative key performance indicators (KPIs), which include various aspects of

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sustainable development. These were jointly developed by experts from China and Singapore. Committing into a set of KPI upfront allows the progress of the eco city to be measured and compels both governments and the private sectors to find effective and practical solutions to meet these targets. For example, one of the KPIs is 100 per cent green building. China and Singapore jointly developed a green building evaluation standard for the Tianjin Eco City. This combines the best features of China's Greenstar and Singapore's Greenmarks systems. Where the attainment of green building standards in many other places is voluntary, in the Tianjin Eco City, all buildings must meet the G-best (?) requirements. Other KPIs include 20 per cent renewable energy utilisation, which we achieve through solar PV, solar thermal collectors, wind turbines and ground source heat pumps, 90 per cent green trips within the eco city, 100 per cent portable water, at least 50 per cent water from non-traditional sources such as rainwater harvesting, 20 per cent public housing and so on. Some may ask why include public housing as a KPI for an eco city? The answer is that we see sustainable development not just as being green but about building sustainable communities. The eco city is therefore not an exclusive village comprising expensive eco friendly houses but a city where there are green homes for all segments of society. Putting all these together, what we are trying to create is a high quality sustainable city where residents can work, play and learn all in a resource-efficient, environmentally friendly and socially harmonious way. This in a nutshell is the eco city that we are building in Tianjin.

Someone might ask while all these sounds good but does the eco city model work? Is this a sustainable option? To answer this question, I think it's useful to consider whether the market supports to what we are doing. Are homebuyers and investors convinced by our value proposition? What do the international community and media and experts like yourself think of our model? In this regard, I'm pleased to say that our results thus far have been fairly promising. In the past three years, renowned international developers such as Keppel Land from Singapore, Mitsui Fudosan from Japan and Samsung from Korea have committed to develop green homes in the city and the green homes which has been built thus far have been selling well. So far despite China's property market cooling measures in the past two years, the eco city has sold nearly 5000 homes. This shows that homebuyers are increasingly receptive toward eco development and are prepared to pay a bit more for green homes. Apart from developers, the eco city has also attracted large MNCs like Philip Hitachi, Keppel and ST Engineering. As this is a high profile government-to-government project, many companies see this as an effective platform to provide green products, services and solutions or to conduct research and development and test bedding of their products.

International organisations and international media have also given the Tianjin Eco City positive reviews. International media such as CNN, BBC and New York Times have reported favourably on what we are trying to do. Two weeks ago, I was also invited to the Rio+20 conference on sustainable development in Brazil where we give a presentation on the Tianjin Eco City as a model for sustainable development, especially for developing countries. Of course, in the course of developing an eco city, there are many challenges we have to confront and trade-offs that need to be made. For example, we often have to balance between idealism and pragmatism. Do we go for a lofty and perhaps costly environment ideal or what is viable right here, right now? Thus for instance a reporter once asked me, would you ban cars in the eco city? My answer is no. Given this aspiration

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of the Chinese people, we do not think it'd be practical to ban cars at this stage of China's development but what we will do is to make it convenient for residents to use other means of transport, especially public transport, thus increasing the likelihood that they would not resort to using private cars. This is the kind of practical approach that we are taking. A lot of what we do is not very costly or radical but if it is done across the board in many cities, I believe the net environmental impact can be very large.

Second there will always be different groups that pursue different goals, the central and local governments, the private sector, civil society, residents and so on. In developing an eco city, one would always have to try to balance and align these different goals. So far, the Tianjin Eco City's model of government-led project, driven on a commercial basis provides what I think is a good platform for us to try to align these different objectives. Third, the development of eco city in itself an important and valuable goal but it is not the whole picture. We also need to encourage residents to adopt eco lifestyles, change their living habits, rely more on public transport, practice more recycling and so on. In the early stages of the eco city's development, our focus was quite naturally more on hardware, from planning to building an ecologically friendly city. As we move to the next stage and welcome residents, and we have begun welcoming residents at the start of this year, increasing attention would have to be paid to software – to build a harmonious environmentally conscious society. And I think this is where Singapore and Chine will continue to work closely together in the next phase of the development of the eco city.

Which brings me back to the question posed at the start of my presentation – are eco cities a fad or a sustainable option? My view is that whatever name we give to such cities, at its core what we are trying to do is build cities that are more ecologically friendly, economically sustainable and socially harmonious. I think the pursuit of such goals is not a passing fad but goals, which government and various organisations have been pursuing for years. If the concept of building eco city has suddenly become extremely popular such that it can be considered a fad, then I think this is a good fad. In time to come, as mankind continues to urbanise, I believe that ecologically friendly cities would increasingly be seen as one sustainable option but really as a standard against which all cities should aspire to. Finally, to conclude, the logo of my company SSTECH is a seed. It represents the idea of an eco city that the two governments planted in 2007. Today, the city is beginning to take shape and we're beginning to see the idea of eco city spreading to other parts of China. In time to come, I believe that the Tianjin Eco City will not just be one green city but one green city in a forest of green cities.   And some of these new eco developments may replicate only a few of our ideas, others may surpass and become bigger or greener cities. To the extent that the Tianjin Eco City has helped to promote the concept that eco cities are viable and attractive proposition, I think we have done our part to promote sustainable development. Thank you very much."

Mr You: "I'm sure there are a lot of questions from the floor. I would like to invite all the speakers to come up and join me on the podium and we will engage in a question and answer session. We have quite a few questions that have come through the Pigeonhole so maybe we will start with one of these questions which has been addressed to the last speaker and that question is that, China real estate has gone in substantial prices over the years and the government is currently curbing home prices due to high inflation rates. Do you see sustainable supply and demand of eco cities in homes which are viewed as a

premium above average home prices? Do you see that as a viable alternative in China based on the Tianjin Eco City experience?"

Mr Ho: "Thank you. I think I would answer this question in two parts. Firstly, the premium, I think that if eco considerations are built in from the outset, if we do green masterplanning, we focus on walkability, we tap passive design features then it's not obvious that the premiums in large. And secondly, as the empirical evidence has shown in Tianjin Eco City, we have been able to sell green homes fairly well despite China's property market cooling measures. So I think residents are receptive but of course they are not just buying a green home. We have to provide for them an attractive proposition. It's a green home integrated in nice environment and I think if we give them such a proposition, Chinese buyers are willing to pay that small premium for green homes."

Mr You: "So basically you're saying that an eco city adds value, value that surpasses the value of just the price of the housing that would be the value proposition?"

Mr Ho: "Yes, I think that the Chinese buyers are willing to pay a little bit more for a nice green environment."

Mr You: "Thank you very much. Second question I think I will like to address Professor Cramer because she had talked about several initiatives in Holland that involved technology and you also mentioned the issue of involving citizens early on in looking at technologies. So basically, how do we involve citizens in looking at technology choices and how do we involve citizens in the evaluation of those technology choices?"

Prof Cramer: "Well, I can give a clear example of what I mean. There are people who like to buy a house but when you want to buy a sustainable house, there are people that are interested but then you first ask people who is interested to live in a house like that. Then you have for instance 500 people that signed up, then you have a meeting to see which people really want that kind of house and then the number of people will perhaps decrease but in the end, you have people that are really motivated and they like to buy the house and no advantages, not only the eco side but the whole story. Why do I think this is important? Because this is a new development and the ones who live in sustainable homes, they are our propagators of the new future. So if they start to complain, which was the case in the past, then you really have a bad case. You don't have people who are really promoting your case and the more people are promoting, the more it becomes just the way to live."

Mr You: "Thank you. I think now I would like to turn to audience for questions directly from the floor. I see Emiel Wegelen. Could you please come up and introduce yourself."

Question: "Thank you, Chair. My name is Emiel Wegelen the coordinator of the Cities Development Initiative for Asia, an undertaking by the Asian Development Bank and four European Governments and the city of Shanghai to help cities in Asia, medium-sized cities, to do a better job infrastructure planning and programming and leading those to finance. My question is basically to all of you. It seems that from the presentation, with the exception of Dr Cheong, most of you seem to be looking at new development but it seems to me we have another agenda and that is to deal with the existing built environment because the environment of the future is already there to the tune of 70 per cent, 80 per cent,

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maybe in Europe 90 per cent. We have an ageing population. We're not growing. In Asia, we deal with another phenomenon. It called informal settlements. In the cities in which we work, about 20 to 30 per cent, sometimes 80 per cent in most cities in Bangladesh live in informal settlements. So how do you apply these concepts under those conditions, is my question."

Mr You: "You want to take the first bite at it?"

Mr Martins: "I can start. Your point, of course, is extremely well taken. There is a big contrast between say cities in Europe and of course cities in rapidly urbanising countries. If you take a city like Paris, scrapping rate of buildings in Paris is probably one per cent a year so it's not much you can do about it renewable and renovating buildings. Most of it has to be done to sort of retrofitting but even this retrofitting takes place in a very sort of slow manner. For the cities that are in the rapidly growing countries, of course I think what is important is the opportunity. It's the fact that you have a possibility now to have an influence on the urban form and if this urban as I say which is rapidly sort of for decreasing in terms of density, if this urban form now takes a model which is low density, sprawling model, then we may lock in the form of these cities in a way that is going to have sort of tremendous impact in their energy consumption and in terms of impact on environment.

Now, one thing I would like to stress is that in terms of infrastructure and investments we have a lot of evidence on in some sense the economic return of infrastructure and investment. And what is very surprising is that we say infrastructure is very important for development, we can overcome these bottlenecks but when you look at the return of infrastructure investments, in many instances this return is very mixed. We don't have the impression that we are putting all these money on these infrastructures – road connections, et cetera, et cetera – and you are not getting the economic returns. And the main reason for that is because in many cases these infrastructure and investment are not well complimented with other conditions. For example, in terms of regional development, when you are able to complement infrastructure and investment for example, human capital, investments in human capital, investments for example in business conditions, those systems have a sort of a chance to work. In examples where we put in place this infrastructure without the other conditions in place, often actually even leads to a sort of leaking effort across regions which generates this kind of mixed impact of infrastructure. So it's not really the fault of infrastructure investments; there are other conditions that are not in place. My last point is about the idea of compact cities, which I think it's very important both for the developing world because we have to in some sense induce a more sustainable urban form, but also for the countries where the population is ageing where in some sense to manage this shrinking of the population and shrinking of cities. The concept of compact cities I think is a very powerful tool and instrument to deal with both situations."

Mr You: "Dr Cheong, maybe you could share with us the Singapore experience, after all, 30 years ago Singapore was pretty much one big slum?"

Dr Cheong: "Actually, my reaction to that question is really this, I actually do not see the term eco city, I actually find the term eco cities and eco towns a little narrow. I would say that the more important thing is to have sustainable development so particularly in Asia,

and Singapore was like this about 50 years ago, we had exactly the informal settlements and the slums. Nobody talked about eco cities but people did talk about the basic essentials, which now of course has become popular to call it sustainable development but at that time, basically economic growth means you need jobs, environment means okay, basic, less pollution, basic sanitation, water and social meaning, well, people you got to get the families and you muster some social actions together. So I think these values and principles continue. Rather than to say it's an eco city, so how can you look at informal settlements and make them more eco. I would rather say that these things don't go away. They were the same things they were many years ago and the same things today. But some cities are probably a little bit more sophisticated along the journey but we still need to find housing, we need to find sanitation, we need to find just clean water for people.

So when Singapore was 50 years ago, we had a lot of slums in the city and surprisingly, the first thing the independent government did was to form the Housing and Development Board (HDB). It was formed even before we formed the Economic Development Board because it was felt that housing was so important for people to have housing but this became the key component for moving everything forward because by building very affordable, very cheap affordable housing, we could move the people from the slums into housing with running water and electricity. But it also means that you can start to clear up the city of the slums, re-plan the entire area, re-parcel the land, bring in all infrastructures and then start development. And when you start development, that generates revenue for the government and it starts a very good cycle whereby government has revenue in order to provide more social services for people and then it generates jobs. So something has to start in that cycle. So I would say my response to that is it's actually more about the very basic need you need to take care, particularly in cities in Asia."

Mr You: "I definitely would like to support what you just said because I think it's impossible to envisage a sustainable city or sustainable urban development if 20 per cent, 30 per cent or even 50 per cent of the population is excluded. It just doesn't make any sense. You cannot have an ecological city when half of your population is lacking basic services. Another question from the floor, yes, this gentleman on the right here."

Question: "Hello, my name is Madhav Joshi. I'm from India, an architect and urban planner. My question actually directs back to the moderator's first expression about eco cities or cities in general. If one accepts the analogy of cities as a living organism with its own capability, with its own metabolism and capability to adopt and evolve, then can that analogy be extended to find a way forward or would it have limited life?"

Mr You: "That's mine. All right, with your permission, I'll try to answer that. I think I would link that to another concept, a concept that of course coming straight out of Rio+20 where a lot of the debate was about the green economy and I think one of the issues that we are becoming more and more aware of is that there is no one size fits all for cities and the struggle for sustainable urban development, despite all the advantages and technologies, despite all new thinking and new concepts and new tools that we are for designing, planning or infrastructure, each city is its own case. Each city has its own culture, has its own context, has its own physical environment, built environment, has its own people. And the real challenge, and I think this is where the eco city concept is very useful, is to remind us that perhaps the real struggle for sustainable urban development is

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precisely place-making. It's how do we make the existing city with its own characteristics greener, more sustainable, more socially inclusive. It's not about looking for a model that can replicated and infinite all over the world. So I would say yes, the lesson that we can learn from the eco city movement is that the real promise of the green economy is perhaps finding these tailor made solutions, tailoring the technologies, tailoring the planning, the design, the urban design using all these tools to the specific context of each and every city because there we will have to find, we'll have to bridge and marry global expertise experience and technology with local know-how and local culture. Otherwise, I don't think it will social or culturally meaningful."

Prof Cramer: "I was the only one to use the word the eco cities because I think that sustainable cities is more proper expression of what we all mean. So I was not completely not following the rules."

Mr You: "I agree with you but as historical search told us the eco city concept was actually was born way before the sustainable development concept was even thought of. Any other questions from the floor? Any reactions, any further points that any would like to make?"

Prof Cramer: "I want to raise one point and that is something that we are confronted within the Netherlands quite a bit. That is when you set up a consortium of companies, then you also need new financial arrangements and that is quite different from the way we finance projects in the past. I don't know whether that has been the case in Tianjin where you have just one developer or whether a group of companies involved to do the job and how did you finance in a way that really balances the costs and the benefits proportion of it."

Mr Ho: "I can answer that question. Well, essentially in the case of Tianjin Eco City, there's a 50-50 joint venture with the Singapore side contributing the capital and the Chinese side contributing the land. Now this is the master developer. The contribution by the Singapore side was approximately two billion RMB and the equivalent land was contributed by the Chinese side. Then what happens is the master developer does not necessarily develop every plot. Each of the plots can be sold or we can form joint ventures with other developers and then they'll develop property and sell that property so it finances itself. The government in turn gets taxes from the sale of land, from various other sources and that finances the development of the eco city."

Mr Martins: "I just would like to reinforce the point you stated. We say that indeed a one size fits all doesn't work but in some sense we need it repeatedly and endlessly because each we discuss with regions, with cities, with countries, there is always this tendency, tell me, tell me what is the best model? Now, it doesn't exist. There are some principles there are some mechanisms, which are general, but then you really to put in place these sort of complementary. If you need to put in place these governance systems, you really need to look locally and look at the specific conditions in each city. There are three points I would like to, which seems to me are important. We all agree that cities are key but don't forget that cities are integrated in a wider system of regions and sometimes for example managing excessive urban growth actually entails that we need for example to develop in the different region. This is very important.

The rural-urban linkages is something which is extremely important on the point of view of governance, for example the revision of certain public services. Sometimes, the administrative boundaries don't fit very well with the function of the areas of city and agglomeration in order to deal with this complexity of the economy and the functional areas that don't fit with the administrative boundaries, you have to put in place a better governance system and sort of, I would like my final message is really about this governance, the importance of governance, both vertically and in alignment of objectives across different levels of government, central government, region states, municipalities, but also across sort of local government because as I said the economy doesn't take into account always this administrative boundaries. So we have to have in some sense coordinating units that fit much better with economic and environmental realities and also social realities."

Mr You: "Thank you very much. I would now like to bring this session to a close. I just would like to thank once again all of our speakers for not only very, very interesting informative presentation but also for having kept time, very important. The timing is very important. Thank you. Anyway, I wish all of you the best for the continuing of your sojourn here in Singapore and I will encourage all of you to go see what's happening in Punggol City."

[End of Transcript]