

**THE CHINA COUNCIL
FOR INTERNATIONAL COOPERATION
ON ENVIRONMENT AND DEVELOPMENT**

THE FIRST MEETING OF THE FIFTH PHASE

Diaoyutai State Guesthouse, Beijing

December 12 – 14 2012

Summary Record

January 2013

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ABBREVIATIONS

AGM	Annual general meeting
CCICED	China Council for International Cooperation on Environment and Development
CIDA	Canadian International Development Agency
CO ₂	Carbon dioxide
CPI	Consumer Price Index
EIA	Environmental impact assessment
FYP	Five-Year Plan
GDP	Gross domestic product
GHG	Greenhouse gas
MEP	Ministry of Environmental Protection
MISTRA	Foundation for Strategic Environmental Research
NGO	Non-governmental organization
NO _x	Nitrogen oxide
OECD	Organisation for Economic Co-operation and Development
PM	Particulate matter
PV	Photovoltaics
RMB	Renminbi
SERI	CCICED Secretariat
SISO	CCICED Secretariat International Support Office
SO ₂	Sulfur dioxide
UN	United Nations
VOC	Volatile organic compounds
WWF	World Wildlife Fund

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I. Introduction

The China Council for International Cooperation on Environment and Development ("the Council" or CCICED, pronounced "sea-said") was established in 1992 by the State Council of the Chinese government in order to foster cooperation in the areas of environment and development between China and the international community.

The Council is a high-level advisory body that puts forth recommendations on environment and sustainable development for the Chinese government's consideration. It has so far convened 21 annual meetings organized in five-year phases.

The Council supports the development of a comprehensive approach to sustainable development and environment through close cooperation between China and other countries. At present the Council is composed of 25 Chinese members and 25 international members who were chosen for their experience, expertise, and influence.

The Council is chaired by Mr. Li Keqiang, Vice Premier of China's State Council and a member of the Political Bureau Standing Committee. It was at his invitation that the members of the Council attended the first meeting of Phase V.

The CCICED Bureau serves as the executive body of the Council.

The Council's host institution is the Ministry of Environmental Protection (MEP). Previously known as the State Environmental Protection Administration, MEP is responsible for the Council and for ensuring inter-ministerial coordination. It has established the CCICED Secretariat (SERI) to support international and domestic contacts. The Secretariat supports follow-up in China to CCICED recommendations, and deals with routine matters when the Council is not in session.

The Secretariat is assisted by the Secretariat International Support Office (SISO), directed by Mr. Christopher Dagg and located at Simon Fraser University in Burnaby, Canada. Until April 2013 SISO was funded by the Canadian International Development Agency (CIDA), afterwards by Canada's Department of the Environment (Environment Canada).

This Summary Record of the CCICED's first meeting of Phase V was prepared by Patrick Kavanagh for SISO, based on detailed notes recorded during the annual general meeting (AGM). Representing SISO's interpretation of the discussions, the Summary Record does not necessarily reflect the views of all participants. To encourage frank and direct dialogue, the Summary Record presents an overview of the points made during comments and discussion sessions without attribution to individual speakers.

II. Annual General Meeting

Item 1. Adoption of the Agenda

China's Minister of Environmental Protection and CCICED Executive Vice Chairperson **Zhou Shengxian** called to order the first meeting of Phase V. He introduced the following dignitaries:

- Vice Premier of China's State Council and CCICED Chairperson **Li Keqiang**;
- Canada's Minister of the Environment and CCICED International Executive Vice Chairperson **Peter Kent**;
- Vice Chairman of China's National Development and Reform Commission and CCICED Vice Chairperson **Xie Zhenhua**;
- Managing Director of the World Economic Forum and CCICED Vice Chairperson **Børge Brende**;
- Deputy Secretary General of the State Council **Ding Xuedong**;
- China's Vice Minister of Environmental Protection and CCICED Secretary General **Li Ganjie**.

He welcomed guests, Council members, and observers to the 2012 AGM, focusing on the theme Regionally Balanced and Green Development. The Council adopted the agenda, and CCICED's 2012 AGM was declared in session.

Item 2. Adoption of CCICED Charter

The AGM unanimously adopted the revised CCICED Charter to regulate the activities of the Council during Phase V.

Item 3. Opening Ceremony

Executive Vice Chairperson Zhou Shengxian introduced Canada's Minister of the Environment and Council International Executive Vice Chairperson **Peter Kent**. These are the highlights of Mr. Kent's address to Council:

The issues of China's environment and development are growing more complex and more demanding in terms of policy needs. Therefore our joint efforts must be robust and must provide new insights, and above all lead to practical and implementable advice. We can assume that our advice to the State Council will have to be sharply focused and directed toward new and emerging problems, as well as those requiring ongoing attention. We need to formulate advice

that truly does seek a transformative change in how environmental problems are perceived, as well as acted upon.

While CCICED has the trust of many outside the country, it is China most of all that has expressed the need and vision guiding CCICED's work, and in this regard we note the success of the 18th Party Congress in elevating the concept of ecological civilization — or ecological progress — to the highest national policy level. By placing environment and development at the same level as the economy, culture, and social development, China indeed sends an important signal, not only to its own people but also to the rest of the world, about its resolve and its tenacity to create a new environment and development relationship.

We must take this shift of thinking into account when we plan the Council's future work. This first year of the new phase comes at a time when the global economic slowdown persists — and even in some cases worsens. We cannot avoid considering the impacts of this crisis on environment and economic relationships, on the implications for green trade and investment, and more broadly still for the success of the multilateral agreements affecting environment and development.

A number of past and present CCICED members attended the Rio+20 forum last June. The Council held a very successful side event with a roundtable chaired by Premier Wen, where it was possible to exchange views directly and with good insights. This session highlighted the need for a strengthened commitment to the concept of green development, both globally and on the part of countries. The implication for our work is that we may be called upon to provide advice relating not only to China's internal needs but also on matters relating to international cooperation and China's growing role on the international environment and development stage.

It is significant that China has gained valuable experience during the 11th Five-Year Plan (FYP) and now in the first two years of the 12th FYP. Over the coming years we can marshal CCICED's efforts around the subject matter of green development. I hope it would be helpful in focusing China's longer-term development strategy as well as providing advice of more immediate value, including planning for the 13th FYP. I've seen the emphasis given to green development in the recent [World Bank] report *China 2030*, and I think this is an important timeframe to consider for our future studies.

This year's studies and recommendations have examined topics concerning regionally balanced and green development. We take seriously the observation by Premier Wen and others that China's overall development pattern still appears to be "unbalanced, uncoordinated, and unsustainable." How can green development overcome these challenges? That's the question driving our studies this year, and I expect for some time to come.

The five-year study reports cover important ground. Our task force on the 12th FYP makes suggestions on how best to meet the mandatory pollution control targets in an optimal fashion, and lays out some longer-term approaches that might guide future action during the 13th FYP and beyond. A CCICED task force has examined the western development strategy from a green development perspective, producing the outline for a green development roadmap suitable for this fast-growing region.

We have also undertaken three special policy studies that are particularly relevant to the eastern coastal region as it makes a transition to a more developed and post-industrial condition. One of the special policy studies examined green development in the three most economically significant locations in eastern China. The second examined the serious emerging problem of regional air pollution, especially small particulate matter, PM_{2.5} — or, as we often call it, ‘smog’. The third study examined how China can develop a better emergency response to regional oil spills, suited both for reducing the damage and high costs associated with incidents such as the Bohai Bay incident in 2011 as well for preventing such future events.

Granted, these studies do not cover the whole array of issues facing China’s regional green development. But they have, I believe, helped us better understand the challenges and the opportunities for green development in different locations and for a variety of issues. The studies have considered the important role of local officials, and of enterprises relocating their production plants from one part of the country to another. And the teams have tackled the problems of integrated approaches to management in each of the problem areas examined.

Mr. Chairman, in your remarks to the Council last year, you noted that China needs an approach based on “protecting the environment while developing, and developing while protecting the environment.” You also characterized the new environmental protection way as “small cost, good returns, low emissions, and sustainable.” We must keep those thoughts in mind as CCICED formulates our recommendations this year and in the future.

Zhou Shengxian then introduced China’s Vice Premier and Council Chairperson **Li Keqiang**, who delivered the AGM’s keynote speech. Here are some of the main points:

When Vice Chairman Zhou invited you to review the meeting agenda and the charter of Phase V, both documents were adopted with a round of applause. This applause sends a message: in environmental protection and in our effort to develop an ecological civilization, there is a strong desire to strengthen international cooperation. On this, everyone agrees.

The history of human development is also the history of the interaction between people and nature. Some ancient civilizations prospered because of good ecology, while others failed because of ecological deterioration. During the past 300 years we created much wealth from industrialization, but we also paid a price in terms of resource use and the environment. In the latter part of the 20th century the international community began to think about issues such as limits to growth. New concepts emerged, such as the circular economy, green development, and ecological civilization.

The United Nations (UN) has convened conferences on environment and development, sustainability, and climate change. Gradually these discussions have been translated into actions by member countries. Thus the development of ecological civilization follows from agricultural civilization and industrial civilization — in fact it follows the direction of human civilization itself. In ancient China there was much ecological thinking along the lines of following the law of nature or the unity of people and nature. All this wisdom is still relevant today.

In the 1970s China began to pay more attention to pollution control and prevention. Since then it has actively participated in the course of the world's environmental development. During the last 30 years China modernized itself and practiced a basic policy of energy resource conservation and environmental protection. China has taken other measures to check environmental deterioration, but we are very much aware that we still face severe difficulties which constrain our country's development.

China has a population of 1.3 billion people. There is no precedent for modernizing such a large country, so we are now faced with a new challenge, but also a real opportunity. We should adopt the mentality of a tightrope walker: we should have the conviction that eventually we will reach our goal. It took developed countries 100 years to industrialize and urbanize. This process is in full swing in China, but at a faster pace. The environmental and development challenges experienced by developed countries have manifested themselves in China more intensely. Therefore we need to learn experiences, practices, and lessons from these countries.

We should also leverage our advantage as an emerging economy and avoid the pattern of “pollute first, treat later.” Rather, we can develop in a new fashion, using the concepts of ecological civilization. These include respecting nature, accommodating nature, and protecting nature. The development of ecological civilization will be integrated into the whole process of modernization. We should protect the environment while developing the economy and so achieve a win-win — incorporating people's well-being, economic development, and protection for the eco-environment.

We need to enhance our efforts in these five areas:

First, green development. Environmental problems that have been created in the development process should also be solved in this process. In other words we need a modernization process featuring ecological civilization. A good eco-environment is wealth that cannot be bought or borrowed. If we are poor and have a good environment, that is not good enough. If we are well off but the environment is bad, that's not good either. So we should optimize land development to form the right production space, living space, and ecological space. Meanwhile we will press ahead with major ecological, environmental protection, and energy conservation projects.

Second, we want to improve people's livelihood and well-being. Modernization and the development of ecological civilization are for the people. People want to live well, they want good jobs, more income, clean water, and a beautiful environment. As a government, we have a responsibility to mobilize all stakeholders' efforts to treat and prevent pollution. We should not leave things undone for future generation. Starting this year China monitors PM_{2.5} in the Beijing, Tianjin, and Hebei regions, as well as the Yangtze River and Pearl River deltas. This information will be made available to the public. This is only one indicator, but it is very symbolic. We hope that, with this effort, environmental quality will soon improve.

Third, we want to tap the huge potential of the domestic market and expand that market. We want to have a new form of industrialization and urbanization characterized by ecological civilization. This will bring about a huge eco-industry, for example, the application of renewable energy sources, the renovation of buildings to make them more efficient, or the treatment of wastewaters. All this will be new growth. Take for example the development of photovoltaics (PV). Currently, the domestic installation of solar panels accounts for less than 10% of total production. In the process of urbanization we will support the installation of solar power facilities, and thus promote the development of the PV industry. By 2020, China's solar capacity will reach 50 gigawatts. We can see that the ecological industry is an inexhaustible treasure trove.

Fourth, we need to deepen reform. Reform is essential to development and is also a strong driver of modernization. We need to step up reforms in many areas including enterprises, pricing, tax and revenue, finance, and government administration. We also need to improve the mechanisms governing payment for the use of resources and governing compensation for environmental damage and for ecological usage. We should also enhance the mechanisms for environmental performance evaluation, and the rewards and penalties schemes for behaviours and accountability. We should also use the right institutional setup to give incentives and disincentives, and use laws to regulate behaviours.

Fifth, we need more partnerships. Environment and development are challenges common to all the world. All countries want to develop and protect the eco-environment and promote green

development. That's why just now you adopted the agenda and the Charter unanimously — because we see eye-to-eye on this. That's where the interests of many countries converge. China is a vast economy, and if we can solve these issues well, it will be a great contribution to all human society.

Item 4. Addresses, Special Remarks, Issues Paper

Statements by the Vice Chairpersons

With International Executive Vice Chairperson Peter Kent presiding, CCICED Vice Chairperson **Xie Zhenhua** addressed the Council, emphasizing the following issues:

China is at a crossroads in development. The average per capita gross domestic product (GDP) has just exceeded RMB 5000 — but we still have 180 million people in poverty. Therefore we need to make more efforts to protect the environment and improve the well-being of people. At present we face serious challenges. Development is much constrained by our limited land resources. The average per capita availability of coal, power, and other natural resources is less than half the world's average. Our resource production is just 1/7 that of Japan. Our GDP takes up less than 10% of the world's total, but our energy efficiency is poor because of high pollution and high natural resource consumption, combined with low production.

These kinds of problems appeared in the developed countries at different stages over very long periods of time. In China, however, all these problems have cropped up at one and the same time. This has made things even more difficult and complicated for us. If we want to achieve our goal to make families well off by 2020 we must change our mode of production and adjust the economic structure. It is not right for us to follow the old road of industrialization. We must find a new path for ourselves.

The government has attached great importance to energy conservation and the reduction of emissions. Presently we focus our efforts on pollution control in the major river basins. During the 11th FYP period, the reduction of emissions became a legally binding target. With years of effort and the adoption of many policies and measures, per capita GDP energy consumption has decreased significantly. Emissions of carbon dioxide (CO₂) and sulfur dioxide (SO₂) have decreased respectively by 14% and 12%. All this has contributed to the increase of GDP and the development of the economy. At the same time new types of industry have appeared focusing on the circular economy; the production volume of environment-related industry had a value of about RMB 2.3 trillion last year.

These are all symbols of progress, and they show that the Chinese government takes responsibility for future generations. It is important for us to understand the concept of ecological civilization in the development of industry and agriculture and in the processes of urbanization. We should make efforts to develop new lifestyles and new industrial structures to protect the environment. Only in this way can we develop China into a beautiful country and create good living conditions for the people.

We hope to adopt a number of specific measures.

We aim to optimize China's spatial structure so that the population and the development of different industries and resources are arranged in a proper spatial pattern. By 2020 the forest should be increased by 3.12 million square kilometres, and we aim to maintain and restore the grasslands. Since the eastern and western parts of China are different in terms of culture and geography, we have suggested different development plans for them.

We hope that by 2020 the service industry can be increased by about 4% and also that environment-friendly industry can increase its revenues by about 8%. We plan to strengthen our environmental impact assessments (EIA) on the high-polluting and high-emissions projects, and to phase out gradually those energy intensive plants. We will make efforts to have more strict performance reviews and the evaluation of energy conservation and emissions reduction in different industries. And we hope that by 2020 we can save more coal and gradually decrease the use of coal in the future.

In all processes of production and consumption we need to promote the circular economy. For example, we must promote the reutilization of kitchen waste and of animal dung, and establish an institution for recycling. We aim to improve the reutilization rate by 15%. This morning we approved a plan for developing the circular economy, so this is going to be a long-term goal and we are going to carry it out in a down-to-earth manner.

We must readjust the energy structure and promote diversified and clean development. We aim to improve non-fossil fuels — such as hydro, solar, and biomass — so that by 2015 these fuels will provide 11.4% of China's total energy needs. Furthermore we must intensify our environmental protection, and particularly, address those forms of pollution that impair people's health. We must adopt integrated approaches and significantly improve the quality of the environment. For instance, we should focus on key watershed areas, control PM_{2.5} and other fine particulates, control pollution by heavy metals, and treat urban sewage.

We must promote ecological improvements and recovery, including the protection of natural forests and grasslands, new plantation, the reversion of farms back to grassland, and control of

desertification. By 2015, forest coverage will reach 21.66% and the total stock will be 13 billion cubic metres.

We must tackle climate change to reduce its impact on social and economic development and on people's health. We can raise energy efficiency, promote carbon sinks, control the emission of greenhouse gases (GHG), and take other measures. For regions at differing levels of development, we already have started some pilot projects involving low carbon products, "low carbon cities," and carbon trading. We also take an active part in international negotiations on climate change, where our principle remains: common but differentiated responsibilities.

Finally, we must improve our policy and institutions. We should exercise differentiated management so that China's regions will have varied investment, fiscal, land, demographic, and environmental policies. Resources will be reasonably priced, plus we will reduce the impact of CO₂ by pricing it. We must offer awards as incentives, support green, circular, and low-carbon development of industries, raise energy efficiency standards, and promote energy efficiency labels, as well as use other marketing tools. As usual we will organize Low Carbon Week, World Environment Day, and other publicity events. The media should also play a role to help shape opinion. The public should be encouraged to buy energy-efficient products, engage in green commuting, and oppose overpackaging. Thus there will emerge a way of living that is consistent with environmental protection and conservation, and so ecological civilization will become a leading concept.

International Executive Vice Chairperson Peter Kent then introduced CCICED Vice Chairperson **Børge Brende**, who presented the following remarks.

A nation has to be brave to seek independent advice outside the corridors of government. Since the 1990s China has shown, through the establishment of the China Council, that the nation is self-confident and brave enough to seek this kind of advice. We have an opportunity to make this fifth phase of CCICED an even more successful example of partnership by keeping our efforts focused on the most meaningful topics and potential outcomes.

During the past five years, when most economies in the western world have seen zero growth or have even been contracting, China has grown by 50%. China is now the second largest economy in the world. It lends more money to developing countries and emerging economies than does the World Bank. In the future — and I think already today — developing countries will look to China, and not only to Europe and United States or other industrialized nations, for inspiration when they decide their development paths. This provides remarkable new opportunities for

international cooperation and for global progress toward poverty reduction and environmental improvements.

This year's task force reports provide evidence that China has already made much progress on environment and development. Under the 11th FYP China achieved emissions reductions that normally occur during a later stage of industrialization. The efforts to reach this goal helped the nation begin to restructure its economy and to transform its growth pattern. At the same time, however, the progress made in China has not led to a level of environmental quality that fully satisfies the public.

China has shown that industrialized restructuring provides opportunities for environmental protection, because energy is used more efficiently and other changes in production take place. However, industrial restructuring in itself will not be sufficient to ensure further environmental progress. Towards 2020 China's environmental management system will have to be transformed from control of industrial single pollutants at relatively high costs to coordinated and dual control mechanisms at lower cost.

President Hu Jintao told the 18th Communist Party of China Congress that the whole Party must purposefully apply the idea of "putting people first" in the country's development policies and plans. This principle and approach wisely is being applied to environmental and development concerns, especially in relation to EIAs. But as we know, environmental issues continue to cause concern on the part of local people in China. Therefore I am so pleased that we will be examining social development concerns as part of our future work in CCICED.

A people-centred approach will highlight that environment and development policies must be designed to protect public health. It will entail that official decisions must as far as is reasonable be based on scientific knowledge and an understanding of the pollutants' effects on human health and ecosystems, and on seeking better economic and technological solutions.

This is a vast task for the government of China that likely will not be fully achievable in the short term. It marks a shift in focus, however, from pollution control to environmental quality improvements. Environment quality standards in watersheds, regions, and cities would then become drivers for emission control goals, with the effect that both quality goals and emission goals could be reached.

In pollution control and many other aspects of environmental quality, transformative change will include moving from single issue to complex and coupled issues. Significant institutional strengthening will be required to ensure the necessary coordination.

This year's annual meeting has regionally balanced and green development as its theme. Ultimately it is in the provinces and at local levels that environment and development issues are played out. Establishing a green regional development strategy for different regions' specific needs and challenges could be an important tool for signalling what the sustainable growth path in the different regions should be. Like others, I have been impressed to see how environment has been mainstreamed into development thinking within China.

Vice Premier Li Keqiang has also underlined the historic perspective on dealing with the environment. He said that, in ancient China, high environmental standards and proactive environmental policy played a very important role, and that there was — and is — a clear correlation between a country's welfare and the way it deals with the environment. I think this shows an inspiring vision from the leadership of China in establishing and building a true ecological civilization.

Special Speech by the Minister of Environmental Protection

International Executive Vice Chairperson Peter Kent invited China's Minister of Environmental Protection and CCICED Executive Vice Chairperson **Zhou Shengxian** to brief the Council in a special speech. Minister Zhou made these points:

I would like to share with you my views on how to promote ecological civilization and build a beautiful China.

According to the concept of ecological civilization, we must respect nature, accommodate nature, and protect nature. This concept must be integrated into all China's political, economic, social, and cultural development. The creation of an ecological civilization and the building of a beautiful China are the responsibilities of China's environmental professionals — for example, people involved in environmental assessments — who should be the leaders, agents of change, and practitioners for this development.

Ecological civilization is the aggregation of the material, spiritual, and institutional outcomes that people have achieved to protect and develop a good environment. It is a forum for harmony between people and nature, between people and people, and between people and society. To develop an ecological civilization we need to achieve these harmonies and also respect natural laws. We need to base development on the carrying capacity of environmental resources, and we should develop the right spatial structure, industrial structure, production patterns, and lifestyles. We must develop an energy conserving, resource conserving, and environmentally friendly society.

The building of a beautiful China is a new concept, a new vision for the China dream. We have had young China, lovely China, new China, prosperous and crowded and civilized China, harmonious China, and the revitalization of the Chinese nation. All these have been the Chinese dreams. Now this new concept is depicting the great vision of an ecological civilization.

A beautiful China is the sum of the beauty of our times, the beauty of society, the beauty of life, the beauty of people, and the beauty of the environment. Its prerequisite is the sustained and healthy development of the economy. This kind of society is characterized by social harmony, by a good eco-environment, and by a living environment that makes people feel happy and society more harmonious. It can help expand development space and improve the quality of growth, so as to achieve the perpetual development of the country and the great revitalization of the nation. Essentially it is an elevation of the ruling capacity of the Communist Party of China and an improvement of the ruling mentality and concepts.

A beautiful China should be a country with scientific development. We need to implement a basic policy of resource conservation and environmental protection. We should put people first and achieve coordinated and scientific development in the modernization process. In the words of ordinary people, a beautiful China means we have both money and a good environment. We are convinced that by pressing ahead with scientific development and by creating an ecological civilization we will build a beautiful country.

A beautiful China is a country of social harmony. People are asking for a better eco-environment and for good ecological products, and the development of a beautiful China will inject new vitality into this process. China's traditional *taiji* diagram shows that everything has two opposite sides. Only with the unity of these opposing sides can we achieve harmony. Human beings are a part of nature, so we find both opposing and unifying relations between human beings and nature. So, we need to have harmonious development and harmonious coexistence between human society and the ecological system.

Advanced ecological ethics are the values we need to observe, and a well-developed ecological economy should be the material basis. The ultimate mark of a beautiful China is the development of an ecological civilization.

A beautiful China is a country that fosters sustainable development. During the 1960s and 1970s people were awakened to environmental and ecological ideas. In the world today we are seeing the green economy and low-carbon technologies. We are seeing a new round of industrial development and technological innovation. Green and circular and low-carbon development are becoming the new trend.

The Chinese government aims to address environmental and development issues at a strategic level. We will achieve harmony between people and nature, between the environment and the economy, and between people and society, and in this way enhance our capacity for sustainable development. To build a beautiful China we need efforts from people in different walks of life and different stages of life. We need the right master framework design, with targets and objectives and tasks.

We also need action on the ground. According to the requirements of an ecological civilization we should develop the right spatial layout, industrial structure, and production mode, and lifestyles that conserve energy and protect the environment. We need to step up efforts in building a resource conserving and environmentally friendly society. In this way we can have a healthy economy, a sound eco-environment, and happy people. We will be able to reserve more land for the future and leave a very good environment for future generations.

The Chinese government is committed to environmental protection. We are working hard to address and solve the outstanding environmental issues that will affect scientific development and people's health. But we still face major challenges. On basis of the 11th FYP, we have made progress this year in this area.

First, we have continued our efforts to reduce the emissions of major pollutants. We have focused on thermal plants, steel works, cement plants, paper mills, wastewater treatment plants, animal farms, and motor vehicles. Compared with the same period last year, emissions of a number of major pollutants are reduced in the first half of this year.

Second, we have further enabled environmental protection to play its role in optimizing the development of the economy. We have been strict with the environmental impact review of construction projects. For high-emission, high-pollution, and energy-intensive industries and projects we have enforced a very strict environmental threshold, and stepped up reviews. For projects not in compliance with the standards we have suspended or refused approval. I should also mention that, in addition to EIA, we should also start doing social risk assessments, and these should be considered in the development of all new project proposals.

Regarding construction projects, we now have a new context. These days, people complain to the government about projects located in their neighbourhood. The task before us is to step up reform in this area, and so we need to consider the following points: China is a country ruled by law, and we need to use laws to govern environmental protection; we need to expand public engagement and participation; and we need to practice information disclosure.

Third, our actions to solve environmental issues that affect people's well-being have achieved good results. For example, the State Council has published a newly revised ambient air quality standard, and we have begun monitoring PM_{2.5} indicators in Beijing, Tianjin, Hebei province, and the Yangtze River and Pearl River deltas, and furthermore publishing the information. This focus on PM_{2.5} shows that China is now targeting both primary and secondary pollution, so it marks a new stage in China's environmental protection.

Fourth, we have made progress in pollution prevention in some priority river basins. For the eight downstream provinces of the Yangtze River we have had a full review and evaluation of their river pollution prevention and control. We have done some restoration efforts along the Songhua River, and we are implementing measures to address drought prevention and control.

Fifth, and finally, we have enhanced our efforts for rural environmental protection. We published the 12th FYP for the remediation of the rural environment which specifies targets, tasks, and supporting and enabling measures. We have also adopted the task breakdowns for China's biodiversity strategy and action plan, and for China's action plan for the UN Decade of Biodiversity. In other words the protection of biodiversity has been elevated to the national strategic level.

China is still at an early stage of socialist development. Inadequate development and inadequate environmental protection coexist at the same time. If we ignore the protection of resources and of the environment, we will pay a high price — even if our economy improves. Therefore we must find a new way to protect the environment during the process of developing our economy.

It is important for us to save energy, save resources, and protect the environment. To achieve these goals, we must develop new lifestyles and new production modes, adjust our industrial structures, and rearrange the spatial distribution of industries. We need to adjust the spatial structure to make our environment more liveable and to have clear water and beautiful mountains. Zoning is important to help us identify the environmentally sensitive or vulnerable areas.

We will make all efforts to reduce major pollutants. We should take into consideration the total amount of emissions but at the same time the carbon emission intensity. In some highly polluting industries with high emissions we will further accelerate our efforts in de-sulfuration and de-nitrification.

We will take measures to address the environmental problems that hinder scientific development and affect public health. At present it is important to bring under strict control the highly polluting and energy consuming projects and industries. We will continue our efforts to handle

those big polluters that have greatly affected public health. It is the people's right to enjoy a good quality environment, and this is a public service that government should provide. Thus we will aim to address issues like safe drinking water, heavy metals, hazardous wastes, and PM_{2.5}.

As I mentioned already, this year the State Council approved the 12th FYP for pollution control in major areas. A package of policies will be taken to address PM_{2.5}. Reduction targets have been set for specific cities, provinces, and river deltas in China. Other measures aim to control the consumption of coal and therefore emissions of volatile organic compounds (VOC) and other multi-pollutants.

We will also have more ecological demonstration projects in future. Since 2000 we have been working to establish ecologically friendly cities, provinces, and counties.

Finally, we will make efforts to set up "ecological system institutions." We must improve our laws and regulations and make use of market approaches, for example fiscal and taxation policies and pricing. The ecological compensation system, the accountability system, and punishment for damaging the environment — all these should be integrated into the performance evaluation of local officials.

The CCICED Issues Paper

International Executive Vice Chairperson Peter Kent introduced CCICED Chief Advisors **Shen Guofang** and **Arthur Hanson** who outlined the 2012 Issues Paper to Council. First, **Shen Guofang** made these brief points:

Here at the beginning of the fifth phase many CCICED members are new, which makes our issues paper particularly important. Also, our AGM comes soon after the conclusion of the 18th Party Congress. One chapter in the Party's report to the Congress is entitled "Making Great Efforts to Promote Ecological Progress." This report has put the development of ecological civilization in a high position, ranking it among economic, political, social, and cultural progress, and it has called for the integration of ecological civilization into all aspects of development efforts.

Note that the literal translation of the Chinese phrase *shēng tài wén míng* (生态文明) is "ecological civilization." But the official English translation at the Party Congress was "ecological progress." On the posters here in this room you can see that the Chinese text refers to ecological civilization, while the English says ecological progress. In my opinion the phrase ecological progress is weak, and I personally prefer that we use ecological civilization.

Then **Arthur Hanson** introduced the Issues Paper at greater length:

Following the recent Party Congress, we now have three different levels of thinking we can take into account in our work with CCICED.

First, we have this broad level of ecological civilization, or ecological progress. Ecological progress has been elevated to join economic and other kinds of progress, where we have seen considerable advances in China for example in the reduction of poverty. So in that sense “progress” is a helpful word. But whatever the interpretation of these words, the new game is that at the highest levels of state policy, environment now takes a major seat at the table. A number of senior leaders have been concerned about the environment for a long time, but now it is officially on the agenda at a different level.

The next level comprises our efforts regarding green development. This field encompasses many subcomponents such as the circular economy, low-carbon economy, and so on. In the field we have a situation where every department and unit of government and various industrial sectors all have to take into account different ways of doing business. But green development is not just about any one department — it is how everything is knit together in dealing with environment and development.

The third level — an “operational” level — comprises the activities of MEP and others which are really about environmental protection and environmental management.

It is helpful to break all this down because we have to think about our policy recommendations in quite different ways within these three different levels.

The words of Premier Wen are important to keep in mind. He has talked about a “green and prosperous world” and I think what we are hearing is that China wants to play a significant role in helping create that kind of world. But China also recognizes that if other nations do not follow through, China will suffer as a consequence. In other words if we don’t have a green and prosperous world, it affects us all, whether it is through climate change, biodiversity loss, or a number of other concerns.

Premier Wen also has said that China’s development is “unbalanced, uncoordinated, and unsustainable,” and that’s really the starting point for this year’s Issues Paper. We were asked to look at regionally balanced and green development, and how to turn unbalanced, uncoordinated, and unsustainable into balanced, coordinated, and sustainable. That’s the big challenge, and it’s one that is not being met sufficiently at the present time.

This year we ought to look at three reports in particular. One is the *People's Republic of China National Report on Sustainable Development* put together for the Rio+20 summit. In 2002, for the Johannesburg meeting, China assembled a much slimmer report, but still a very interesting one. It's intriguing to look at the contrast between that earlier report and what has been published now, which is a very hopeful kind of document even with all the limitations and the challenges that need to be met.

The second report is *China 2030*. This is a joint effort by the World Bank and the Development Research Center of the State Council. One value of this report is that it takes the perspective of 2030, which is the time frame that CCICED must shift its focus towards. Also the report deals with the need for green development, but in opportunity terms. It makes the case that it is a good thing for China to become engaged in and to take full advantage of a green development path.

The third report, also focusing on the longer term, is by the Asian Development Bank and is titled *Toward an Environmentally Sustainable Future*. It is a very hard-hitting, blunt document that points out some of the shortcomings of today's development. It is aimed at the third level, the level of environmental protection and pollution reduction that I spoke about.

For the benefit of new members, we should understand what we mean when we talk about green development. One of our members is Hu Angang, from Qinghua University. His definition is "People-centred, unified, and harmonious development of the economy and the environment." This is a concise and useful way to explain green development in China.

China has gone through different ways of looking at regional development. The regions themselves are substantial in terms of population, and they have different stages of development. So one of the key starting points for the work of our task forces is this one word: differentiation. One size does not fit all. In a big country like China, people are different in their thinking and expectations.

This means that there must be differentiated approaches, approaches that are not necessarily based on political boundaries. There are many ways of looking at regional differentiation. Among the key approaches for our task forces are what we call ecological functional zoning and urban development clusters.

Another approach is to look at the gaps between rural and urban. How do you address some of these gaps — in income, happiness, education, expectations — between different rural and urban settings? We often hear people speak of China's "poor rural areas and rich urban areas." But there are many good things about rural lifestyle and experience that will be essential for the future of China. How do you make those rural areas sustainable?

We keep coming back to the idea of “capitals” — natural, human, and social capital, as well as financial and economic capital. But one kind of capital that’s absolutely essential is human capital, in the form of healthy and well-educated people. Human capital is the key to balanced rural/urban development in different parts of the country.

Another important example of China’s unbalanced situation is ecological services for healthy cities. The upstream stewards of those ecological services need to be compensated, but the users, the beneficiaries in downstream cities, have not been paying. China has one of the biggest eco-compensation programs in the world, but it doesn’t work as efficiently and effectively as it should. Furthermore, it is being paid for largely by the central government.

Under the concept of functional zoning, China wishes to designate the areas that need protection as opposed to areas that can be utilized intensely for industrial or other kinds of development. But the areas that need protection are mostly in Western China, which becomes costly for this region and sometimes makes it difficult to conduct economic development at levels locally desired. China’s functional zones are not working well now. How do we actually protect them? How do we compensate for the fact that they must remain green.

In Eastern China however we see a dream come true for many people. This region holds 3% of China’s land mass, 20% of its population, 45% of its GDP, and 70% of its international trade and investment. These are the people who have made it, whether in Beijing, Tianjin, Shanghai, or Guangzhou. They are getting rich, and the income gaps are getting larger between those areas and other parts of China.

In Western China the focus is on ecological services, poverty reduction, sustainable resource development, sustainable rural development, green industrialization, and infrastructure. If we think only of ecological services, China’s future must include something that no country has been able to do yet. First, it must eliminate completely any degraded areas such as deserts or damaged wetlands. Second, it must have adequate provisioning services, such as agriculture, and adequate regulating services like good watershed management. China wants and needs more food, more provisioning services, and the maintenance of regulating services. This is a huge challenge that no country has successfully achieved yet.

In Western China many mining and extractive industries are developing. In the case of rare metals, for example, China itself has said that for environmental reasons China should hold back on developing these because they are extremely difficult to manage, especially with many smallholders involved.

In Eastern China one of the big challenges is decoupling growth and pollution. The timeframe has to be something like 2030 to be able to do this, but how far can we go in decoupling economic growth and resource consumption and pollution emissions?

China's lack of coordination is largely an institutional issue. The PM_{2.5} haze over the country is a difficult problem, and it is not going to be fixed by 2015. That is just the beginning of a 20- or 30-year battle against smog, because of the many automobiles and other new sources of pollution. The dilemma is that no one province or city can deal with the problem on its own. It requires coordination across the different regions of China.

Similarly, the 2011 Bohai Bay oil spill was very expensive considering it was a relatively small spill. The incident exposed the weaknesses from the lack of coordination among the various response organizations. It was a dramatic example of an uncoordinated, inefficient, and costly outcome. And in Jiangsu province, a pipeline was proposed to pipe waste to the ocean from a pulp mill located a long distance away, perhaps 100 kilometres. The local people just said no, and the government responded and also said no. But it was a costly process due to the poorly coordinated effort in making a decision.

When we consider China's lack of sustainability, we need to move from targets — such as risk reduction targets or emission reduction targets — to actual environmental improvements. What are the outcomes we are actually seeking? Is it human health, or ecosystem health, or even a lowering of the impact on China's GDP? It is a fact that China's environmental problems have limited its real economic growth.

Something that people talk about a lot, but limited statistical information is available, is the wealth inequality in China. This issue has regional and sustainability implications.

Now I will focus on the specific issues.

China's environment still faces serious challenges despite serious mitigation efforts. In spite of all the effort made during the 11th and 12th FYPs, the challenges remain quite serious. The situation is getting worse, not better.

Today's regional development strategy really does not guarantee sustainable development within and among regions. This is an important conclusion, because despite the efforts of the National Development and Reform Commission and others, the regional development strategies are not based sufficiently on sustainable development criteria.

Mechanisms for differentiated regional green development are still at an elementary stage. This includes the very important mechanism of main functional zoning. We believe it is a good idea, but it is not ready yet as a reliable tool. It is not working well.

Industrialization and post-industrialization processes require separate but linked green development approaches. On the one hand we see an industrialization process that is not going to be perfect, especially in Western and Central China, but at the same time people are trying to understand in the big cities how to manage post-industrialization processes.

Green development coordination and integrated management are still limited. They lag behind GDP growth and economic considerations.

China lacks a clear long-term vision and strategy to guide national and regional action for green development. We do not want to be too critical of that — it is just that the game is changing as people are moving, and that requires a new strategy. In CCICED we should be thinking of how to help, and some of the roadmapping we have done this year is quite good for that purpose.

We need to consider the alignment of China's green development efforts with international green economy trends. China is well on the way to doing so, but it has to be carried out in a vigorous and helpful way, taking some international ideas but also giving to others China's own experience.

In conclusion, the period 2012 to 2020 — that is, the 12th through the 13th FYP — requires that we see transformative change, in environment and economy and in many social aspects as well. The big payoff will come 2020 to 2030 when we can achieve solid results with green development.

Putting people first is essential. As Xi Jinping recently said:

Our people have an ardent love for life. They wish to have better education, more stable jobs, more income, greater social security, better medical and health care, improved housing conditions, and a better environment. They want their children to have sound growth, have good jobs, and lead a more enjoyable life. To meet their desire for a happy life is our mission.

The role of CCICED is to support that mission with good policies and thinking, and good analysis based on the Chinese situation and on our experience from other countries. That is our challenge for the next several years.

General debate and comments

It is gratifying to hear that China will increase its wetland area, because oceanic wetland is decreasing significantly. Since 1950 over half China's coastal wetland has disappeared. In the next five years another 50 million square kilometres of wetland along the coast will be lost. The public does not understand the value of coastal wetland or the fact that we should protect it. Coastal wetland has a sulfur purification function so, if the wetland is lost, this function is lost. As well, coastal wetlands support a number of ecological resources such as fisheries and tourism.

China has reclaimed land from the sea since ancient times. In the past the method was simple: people used manual labour. It was a very slow process, which meant that the environment that was affected had time to make corrections. But now things are more sophisticated. People are using advanced technologies and machines, so it is not possible for the eco-environment to make corrections. The results are disastrous.

In the past, CCICED focused on land-based pollution, and little attention was given to oceanic pollution. For the next five years the Council should give more attention to pollution related to the sea, and the issue of coastal wetlands should be put on its research agenda.

CCICED needs to be looking far forward — to 2030, 2040, 2050, and beyond — for a long-term picture of where China wants to go and what it will look like. China needs to keep options open and ensure there are no investments or “sunk costs” that will become an inhibition to achieving those outcomes.

Item 5. Task Force and Policy Research Reports

CCICED Vice Chairperson Børge Brende chaired the presentation of the task force reports.

Task Force on Policy Mechanisms towards Environmental Targets for the 12th Five-Year Plan

In presenting an overview of their report, task force Co-Chairs **Wang Jirong** and **Dan Dudek** made the following points:

We conclude that China has great resolve and the right focus, and already it has taken strong measures. China's emission reduction targets under the 11th FYP have been exceeded, laying a good foundation for future development.

The Chinese economy is in a transitional period. In 2011, China's per capita GDP was US\$ 5432, making it one of the middle-income countries. But there remains great disparity between Eastern and Western China in terms of the stages of industrialization. The economy will enter a stage of medium level growth and it will be more driven by consumption. The centre of gravity of

economic growth will shift westward. China is now in the middle and late stages of industrialization, a process that is expected to be completed by 2020. By 2025 per capita energy consumption will slow, and by 2030 urbanization will be completed.

At the same time the public is becoming more aware of its environmental rights, and people now have higher demand for environmental quality. Already we see the NIMBY [“not in my back yard”] mentality among the public. Because environmental monitoring equipment is small and portable, and because of the easy access to information on the internet, these technologies will have a profound impact on environmental protection. Gradually, environmental issues are becoming as important as economic development and living costs. GDP, CPI (Consumer Price Index), and PM_{2.5} are becoming the “3Ps” that people are most concerned about.

Currently China’s level of economic development is similar to that of the United States, Great Britain, and Germany in the 1960s and 1970s. Although China’s economy today is about 1/5 that of the United States level in 1996, China’s current standards on PM_{2.5} are similar to those enforced in the United States back then.

In environmental terms China is in a transitional period. The country faces all kinds of environmental problems typical of different stages of industrialization. For example, China’s control over GHG and PM_{2.5} is quite advanced, but the problems of heavy metals and soil pollution, among other issues, lag behind economic development.

China will face more complex circumstances as it enters later stages of industrialization and urbanization, because the total amount of pollution will be greater. There will be a mismatch among industrial location, resource availability, and ecological vulnerability. And the public will make greater demands for environmental protection. So, we need to adjust our policies.

For example, there must be regional control measures. We must differentiate between secondary and traditional pollutants. There should be coordinated control to tackle a phased transfer of pollutants. We must respond to the public concern over environmental quality. We must be conscious of the cost-benefit analysis. And we should uphold fairness and justice in terms of the environment.

We propose a medium- to long-term pollution reduction roadmap. We must continue “total amount control” of pollution, and we suggest that during the 13th FYP there should be both controls over total pollution and quality improvement. Actually the demand for a better environment will force us to cut total pollution, and the cuts on total emissions will force economic transformation. We also suggest there should be pilot projects on environmental quality control in Beijing, Tianjin, Hebei province, and the Yangtze River and Pearl River deltas.

Environmental quality should become the bottom line of urban development. We should also take into consideration how much the public can accept.

At the same time we should make the prevention of environmental risks an institutional arrangement. For instance there should be national strategies and objectives, and a managerial system for uncertain risks. We should draw on international practice so that companies will become the main players in preventing environmental risks, and there should be a compensation system and an environmental damage assessment system.

The way government assesses official performance should gradually shift from overall binding targets on total emissions and guiding targets for quality, to a combination of the two. And then, it should shift to one system with binding targets for quality and guiding targets for total emissions.

In terms of environmental management, we must strive for new managerial approaches. We need a greater environmental authority with clearly defined responsibilities. We should also give a greater role to the public in monitoring.

We should encourage companies to build good environmental credibility ratings. The 12th and 13th FYP periods remain critical in our initial control efforts, but as we decide the targets we should adopt a differentiated approach. There should be top-down and sectoral control so that good performance gets rewarded. In typical industries we should introduce assessment systems which encourage companies to put pressure on themselves, to hold themselves to stricter discipline.

We should control the overall consumption of resources and energy so there will be role models for complete decoupling between resource consumption and economic growth. There should also be a bottom-up, regional total amount control which will result in different control targets in different regions. We should also make coordinated efforts to cut multiple pollutants.

Our target is to improve environmental quality, and to do this we must take as our foundation environmental functional zoning and environmental quality management. We must have medium- to long-term action plans and policies. Our efforts should be in different phases, and the public must have ownership over this.

In 2011, targets to cut SO₂, chemical oxygen demand, and ammonia nitrogen were all exceeded, but nitrous oxide (NO_x) emissions increased by 5.73% and the power sector saw a NO_x emissions increase of 6.84%. This makes our effort to meet targets more difficult. So, we must have strict control over the total emission of NO_x in thermal power, iron and steel, and cement sectors.

Furthermore, we must have special pricing policies for power plants with de-nitrification facilities, and policies to encourage small engine vehicles and restrictions on car ownership. There should be an environmental tax, plus efforts to control pollution in agriculture and in the papermaking, textile, and dyeing industries. For regions not in compliance, we should have a policy of “double offsetting.” We need corresponding industrial, environmental, and political policies for building a beautiful China.

Here is our suggested definition of “ecological civilization”: a society where the actions of the government, enterprises, and individuals are guided to procure the protection of human health, the provision of ecological services, and the long-term survival of diverse species on the planet while providing for the economic welfare of all people.

The first part — about protection of human health — is key. A transition is needed from discharge standards and amount control to ambient standards — standards based on levels that are protective of human health. From those ambient standards we can derive plans, the timing of reductions, discharge standards, and total amount control. So this redefinition is toward what we really mean by environmental quality.

Another issue is emissions inventories. In China there are multiple and uncoordinated emissions inventories that are generated by different methodologies, different government departments, and different jurisdictions. This makes it a challenge to plan, to do risk assessments, and certainly, to implement change.

A third element is permits. Permits have been on the books in China for a long time but they have not been well implemented. Permits are an essential part of the chain of responsibility and accountability that runs from the people to the government to sources. Permits serve to place in front of the sources — in a single unified document — all of their environmental responsibilities.

Fourth, we must bear in mind the duality of energy and the environment. Making decisions about energy investments means you are automatically making decisions about environmental investments. It is time to shift from end-of-pipe to a focus on efficiency and source reduction. For example, do we really need to invest in the next power plant? Shouldn't demand-side management be thought of as a pollution control strategy? In California, they have maintained per capita consumption of electricity relatively flat for 30 years by emphasizing this approach. This is something that would be transformative in China.

Fifth, regional coordination need not be a complicated idea. How did the Yangtze River delta become such a significant economic engine in China? How did the roads from Jiangsu to Shanghai to Zhejiang connect up so that where one ended at the provincial boundary it

connected with the other? It was through the joint responsibility and self-interest exercised by cooperation on the part of governments.

The final element to flag is water, where we have a duality between quantity and quality. We have distinct separation of management there — there is no integration. The pricing is irrational and so are incentives for water use. We see increasing climate stresses on water uses which are likely to become more intense. All these imply the importance of laying down a comprehensive integrated framework now, in preparation for the 13th FYP.

Task Force on Strategy and Policies on Environment and Development in Western China

Task force Co-Chairs **Ding Zhongli** and **Robyn Kruk** introduced the main points of the report:

The task force focused on three major questions: *Is it feasible for Western China to follow a green development mode? Can the resources and the environment support the current development model in Western China? And if green development is feasible, what are the key policies and strategies to support such a development mode?* We analyzed Western China in terms of the region's potential, coordination, sustainability, and balance. We found that the situation is highly uncoordinated, unbalanced, and unsustainable. This means we must face certain challenges.

First, we must consider the carrying capacity of the environment in the region, and if we want to guarantee balance then we must adjust our policies. Second, Western China is located at the upper reaches of many rivers, and therefore any environmental degradation in this area will affect the quality of development in areas at lower reaches. And third, Western China plays an important functional role in the protection of the environment — not only of China but also of the world — therefore in this region it is wrong for us to seek development at the expense of the environment.

Our research has uncovered much valuable experience from overseas, especially from Australia and Canada, both of which are geologically similar to Western China. We researched also in Sichuan, Qinghai, and other places, and on the basis of all this work our task force has produced a roadmap and a framework for green development in the west.

There are very clear synergies among the findings of this task force and the work of previous CCICED task forces and other research bodies. We acknowledge the very strong political commitment for coordinated, balanced growth, but China has not yet balanced socio-economic income levels nor arrested the degradation of the environment. A clear message from these task forces is that a business-as-usual scenario will not meet the high targets set by the government.

The major challenge is the translation of ambitious targets to action at a regional and a local level. We very strongly reiterate the importance of a focus initially on Western China, but in our roadmap we have provided a policy tool applicable to China as a whole.

Here are our recommendations:

The government of China should prepare and implement as soon as possible a green development strategy for Western China. We recommend an integrated roadmap. We believe there are risks in having a functionally based roadmap or one that is developed at the national, or regional, or local level, or on a sectoral basis. No one agency, no one level of government can effectively implement the ambitious targets set by the government. We also believe that if progress is not made on an integrated green development roadmap, there is actually a high risk of irreversible environmental degradation.

Programs to deliver eco-construction and other means of protection of Western China's ecological services, ecosystems, and biodiversity should be better integrated and coordinated with those for poverty reduction in provinces and at local levels as a long-term seamless set of programs with a more unified basis of delivery. We have already heard strong messages about the need to integrate in speeches by ministers and in task force reports. What is significant in Western China is that the areas of highest poverty coincide with the areas of greatest environmental fragility and with the areas of greatest resource significance to China as a whole. This makes integration and coordination imperative — and high risk. If it does not occur, opportunities will be squandered.

Invest substantially more in programs specifically designed to increase and improve human capital in Western China to reduce poverty, and to enable the pace and quality of green development to accelerate, especially through green infrastructure construction and servicing. Investment in human capital and poverty reduction should be considered at one and the same time. Building infrastructure in Western China helps bring about green outcomes but also increases employment and increases human capacity in the region.

Reform financial programs and mechanisms at all levels of government to more effectively target and drive green development via sustained funding. We make three specific recommendations: a) establish a green development fund in order to provide sustained, coordinated funding streams rather than project-based funding; b) establish a royalties-to-regions tax program, similar to those operating in jurisdictions internationally, again to provide a sustainable revenue source and direct benefit to local communities; and c) accelerate environmental fiscal reform.

Make main functional zoning work effectively to support decisions and actions which lead to regionally balanced and green development. We have heard from many officials that main functional zoning is

an important start, but there is still a long road to go. We have heard messages that there need to be greater clarity, linkages between main functional zoning and EIAs, and linkages between urban and rural planning. And ministers have acknowledged the importance of spatial planning.

Develop and adopt a sustainable urbanization model, including an eco-city approach tailored specifically to the needs and interests of provinces in Western China. One of our task force members described urbanization and the government's commitment to it as "the wind under the wing for Western China." We stress the importance of fostering eco-cities as a long-term strategy, and we highlight the importance of using urbanization as an opportunity to enhance well-being, to minimize negative resource impacts, to increase energy efficiency, and to ensure that public health and safety is given equal prominence in that part of the growth strategy.

Encourage new green industries that reflect the character of Western China in the key and limited development zones, especially in areas of high poverty and areas of the greatest potential. Industry has sent a clear message: give us the certainty so that we understand the rules under which we can operate in Western China. The government's commitment to improving employment, health, and well-being of the citizens of Western China means that green development offers opportunities in many respects. We strongly encourage the development of green entry standards specific to Western China, recognizing that the area is unique and that decisions taken in West China can have consequences for all of China, indeed for the whole world.

Strengthen institutional innovation to drive long-term green development. This echoes recommendations of previous CCICED task force reports and those of our colleagues presenting today. The critical importance of having reliable, consistent, transparent data was mirrored in every one of our recommendations. The need for public confidence in the data was mentioned by Premier Wen when our task force was established 12 months ago, and has been echoed by all the officials we met. We stress the importance of having a commitment both politically and financially to an independent monitoring system that actually measures progress on the roadmap.

Special Policy Study on Environmental Strategy and Measure for the Transformation of Development Mode in Eastern China

The Co-Chairs of the special policy study, **Sarah Liao** and **Peter Hills**, delivered an overview of the study's findings and recommendations. Here are the main points:

We very much wish to thank specifically Professor Tang Xiaoyan, from Peking University, who is actually the "real" domestic Co-Chair, the coordinator of our group, the leader, and the person with experience and expertise who has inspired all of us with her passion for the environment.

The study had three principal objectives: to get a better sense of the meaning of green development, to review the development strategy in Eastern China and to see what environmental challenges had arisen, and to identify lessons from this analysis and develop policy recommendations. The project took six months to complete, and involved desktop research and a literature review, quantitative data analysis, qualitative and case-study analyses, and brainstorming sessions with experts in different parts of China.

We can make the following observations about Eastern China:

The region is not homogenous. We found different development patterns in different areas. One distinct feature is the very high rate of growth, rapid industrialization and urbanization, and the associated high cost in terms of environmental degradation. However, Eastern China is now undergoing a process of economic restructuring. Tertiary industry is becoming more important and is growing at the expense of manufacturing industries.

Economic restructuring has produced some localized environmental improvements, and some evidence of the decoupling of economic growth and environmental quality. Economic growth has continued while emissions and discharges have turned down over time, indicative of some element of decoupling

The mega-events that we investigated — namely the Beijing Olympics, the Shanghai World Expo, and the Guangzhou Asian Games — had some interesting effects, both temporary and longer term. These included: some of the most dramatic and notable reductions in industrial production over a short term, the closure of certain industries during the period of the event, and serious controls on traffic. In the longer term, more sustainable benefits included infrastructure provision and longer-term industrial relocation. It is clear from our analysis that mega-events can produce quite significant environmental benefits.

The tertiary sector is becoming increasingly important in Eastern China and is the most important energy consuming sector in some areas. However, the use of clean energy remains relatively low, and total energy consumption is continuing to rise in the three areas we investigated. The role of the domestic sector as an energy consumer is also becoming more prominent as industrial output sources are being overtaken by service and domestic sector consumption. The saturation rates for consumer durables in cities like Beijing and Shanghai are now very high, and probably matching international standards. Domestic-related air pollution emissions are becoming more significant as industrial emissions tend to hold steady or diminish.

We have seen how air quality has changed in the Pearl River delta region. Between 2006 and 2012 there have been some improvements. The peak levels around Dongguan have been reduced, but at the cost of spreading air pollution and creating lower air quality standards over a wider sub-region. So yes, it is possible to achieve improvements, but these also result in some cases in a levelling out of conditions at a somewhat deteriorated level.

We developed four propositions which help define the scope of our analysis: a) government has a critical role to play in facilitating, promoting, and implementing green development; b) natural resource constraints and increased public awareness are heightening concerns for achieving a better balance between natural resources and consumption; c) market forces have an important role to play in influencing the pace of green development; and d) regional economic and environmental cooperation is a key factor in the pursuit of green development.

We emphasize that the pursuit of economic progress, or ecological civilization, or sustainable development is a long-term transition process and must continually be reinforced through the policy-making process. This point is reflected in our overarching prerequisite, which is a precursor to our recommendations: that the policy mechanisms and institutional adjustments are introduced and reinforced throughout the different levels of government.

Our recommendations for the whole of China emphasize the need for:

- Policy integration and coordination.
- A strengthening of regional monitoring capacity and measures, including establishing a new coordinating body under the State Council — like a “green development commission” — to serve as a platform for discussion of policies across a wide range of policy domains.
- More effective enforcement and much more stringent controls on minimizing the impact of development on the environment, particularly through the environmental admittance system and through strengthening the EIA system by increasing the rigor of its implementation to match international best practice.
- Developing a performance-based accountability system on green development at local governments, to monitor the performance of local officials.
- Heightening public awareness on environmental protection and promoting public participation.
- Accelerating the process by means of carefully selected pilot and demonstration projects.

We also make recommendations specifically for Eastern China:

- Adopt more stringent environmental standards and targets, even going beyond national standards.

- Establish greater information transparency.
- Advocate and promote green consumption concepts and behaviour through voluntary actions plus supporting measures such as tax incentives.
- Set up a regional fund for environmental protection and pollution control projects, for example to facilitate the assessment of environmental health risks or to deal with problems like industrial soil decontamination.
- Establish a regional financial transfer payment mechanism that would allow for environmental protection in less-developed areas and would encourage co-development initiatives between neighbouring regions.
- Promote corporate environmental governance and responsibility.

Comments on the task force and policy study presentations

Often we have tried to develop an entire country using a uniform paradigm despite recognizing our diversity in markets and scale. Commonly we build a few large projects instead of a lot of smaller projects — which is what the developing regions need more. We have adopted “global wisdom” but we have left behind our traditional wisdom. And often we fail at aid effectiveness and donor harmonization. We finance many projects in the developing regions without having proper coordination of these programs.

I do share the concern about whether to use the term “ecological civilization” or “ecological progress.” I think the term “civilization” covers a whole range of human interaction within a society — the way you think, live, conduct business, advance your cultural interests, and so on. So it is important that we don’t lose sight of that higher level of ambition or vision.

Given the urgent need for China to take dramatic, transformative action, and given the enormous energy this will entail, perhaps during the transformation of the various aspects of its economy and society China could take the lead in developing a few of the metrics that would help us gauge these sort of changes, particularly in comparing regional development in different parts of the country.

Instead of using Canada and Australia as comparative examples, it might have been more appropriate for the task force on Western China to look at emerging countries that, like China, face large population pressures. I am thinking of countries like Nigeria, Turkey, or even Brazil, which made its move westward during the 1960s. It would be more appropriate to look at emerging-country conditions rather than advanced-economy conditions.

Regarding the proposal to launch a green development fund, note that of the 60 or so such funds that have been created around the world, most have failed. Only the green development funds in

Norway and in Alaska are sustainable and are working. When planning for a green development fund, we should look at what has failed and not repeat the same errors.

Using royalties from businesses that go west is a very delicate issue. It has to be handled well because usually if it is handled by governments these royalties disappear. They go into the black hole. And it discourages private sector investment from going west. Therefore, discussions about the green fund and about royalty distribution should be carried out in conjunction with the private sector, for example with private asset management advisors and fund managers.

It is vital that good targets be established for green development, but again, these discussions should be done with those people who must implement these targets. There is no point discussing targets if you don't involve the parties who will be required to meet them.

The Council should be aware of the issue of short-lived climate pollutants such as black carbon, methane, tropospheric ozone, and some hydro-fluorocarbons. These pollutants can have harmful impacts on human health, agriculture, and ecosystems. They are also responsible for a substantial fraction of global warming as well as having regional climate impacts. Action to reduce these pollutants, especially methane and black carbon, can slow the global warming experienced before the year 2050 by as much as 0.5 degrees, as well as prevent over 2 million premature deaths each year and avoid annual crop losses of over 30 million tons. Many cost-effective options are available for addressing these pollutants, such as upgrading, trapping black carbon emissions from diesel engines, harnessing methane from landfills as a source of energy, and using new technologies to avoid the use of hydro-fluorocarbons. This issue of short-lived climate pollutant emissions is important in the regional, national, and international contexts. Perhaps the Council can consider starting with a special study.

In the three presentations we have just heard, the social aspects could have come out a bit stronger. At Rio+20 there was a strong plea to have the social, economic, and environmental strands better woven together. Here, equity issues and social considerations could be considered further. For example, when we do an EIA, we could also look at social and environmental safeguards.

Also we should look more at the South-South potential and at South-South collaboration. Lessons and proposals heard here are also applicable to many other countries in the South.

The current investment growth rate in China's west is excessive. If we cannot control excessive development we will face a very different situation in environmental protection. The western regions want to raise their per capita GDP to the eastern level in 10 years. Some of the western provinces are projecting GDP growth targets as high as 13%, or 17%. Many of them are relying

heavily on land investment or similar ineffective investments. If this cannot be addressed properly then it will be hard for us to achieve green development in the western regions.

As far as strengthening environmental protection is concerned, the market alone cannot work wonders. There must be complementary laws, the role of the government, and public participation. We need to give guidance to the market rather than give the market a free hand.

Special Policy Study on China's Marine Environment Management Mechanism Based on the Bohai Sea Oil Spill

Research team Co-Chairs **Shi Peijun** and **Olof Linden** presented the results and recommendations of their study:

Our study team focused on how to accelerate marine economic development and at the same time protect the marine environment. At present we have a solid foundation for marine economic development but we cannot afford to ignore some of the problems. The proliferation of “marine economic regions” at the provincial and sub-provincial levels makes it obvious that we do not yet have an integrated approach and that marine economic development is fragmented.

China's marine environment is deteriorating constantly. Of all China's important coastlines, there seem to be more problems in the Bohai area, and pollution here is increasing all the time. The economic activities are labour and energy intensive, which has put great stress on the local environment. At present land-based and ocean-based pollution are increasing and intensifying. The risks of hazardous environmental outbreaks and accidents also will tend to increase in coming years.

We have learned a lot by studying the experiences of other places, for example the Gulf of Mexico and the North Sea. In the United States and Norway the management of oil spills is effective and they have very quick emergency response.

China has a lot of natural disasters and in handling these the Chinese government is very effective. However it seems we are not efficient enough. We need an integrated approach to deal with oil spills and marine environmental problems. At present China's marine environmental management system is outdated, the management mechanism to deal with accidents is not effective or efficient enough, and implementation is poor. The government mechanism is fragmented: there are nine different agencies responsible for marine problems.

The government at present seems to have put more emphasis on marine economic development and less on effective regulation of the environmental performance of offshore industry. Therefore

we suggest the government should attach more importance to the regulation of the marine economy.

Here are our recommendations:

- Speed up the formulation of a national integrated marine development and environmental protection strategy.
- Establish a National Contingency Plan including the organizational setup for managing such a plan.
- Harmonize marine-related national environmental laws and marine environmental administrative functions.
- Improve legislation for marine environmental management.
- Strengthen law enforcement of marine environmental management.
- Enhance corporate environmental responsibility and improve environmental risk prevention capacity.
- Strengthen the capacity building of science and technology in marine environmental management.

The carrying capacity of China's marine areas, particularly the Bohai Sea, is rapidly deteriorating. The Bohai Sea ranks among the worst examples of degraded seas in the world. The reasons for this deterioration are well known: overfishing and pollution from a multitude of sources.

The root problems relate to lack of capacity, regulations, and enforcement. The result is lost ecosystem services and lost productivity. China is losing very large incomes it might have made from fisheries and aquaculture that cannot deliver high quality produce and, incidentally, are even delivering hazardous product. Just look at the incidence of shellfish poisoning in hospitals around the coast. In addition, coastal waters are not attractive to tourism due to harmful algae blooms. Human health is at risk. This means foreclosing present and future development opportunities: missed jobs, missed incomes, sector clashes, and conflicts between users.

The 2011 Bohai Sea oil spill illustrated insufficient laws and regulations related to the offshore sector, slow and inadequate response to a serious accident, confusion about who is in charge, and poor information from the operators to the authorities — and none to the public.

To strengthen marine environmental protection, a number of measures must be taken.

One government agency must be given overall responsibility for the environmental performance of the offshore industry. This agency must have enough authority and capacity to be able to check that regulations are always followed, do unannounced inspections of operations, and

impose serious fines and /or close operations if necessary. Other government bodies should be obliged to collaborate with this lead agency.

The revision of laws and regulations is necessary so that environmental protection and the safety of personnel always take priority over other interests. The revision of regulations should make it clear that the operators always have full responsibility for any damage.

The revised regulations should compel operators to guarantee that the best available technology in the world is always used in exploration and production offshore, and that sufficient cleanup resources are on standby with trained staff. The new regulations should also make it mandatory for operators to immediately inform the authorities in case of incidents or near incidents. With better regulations, fines, and other sanctions, operators would understand — as is the case in the North Sea, the Gulf of Mexico, and elsewhere — that they are fully responsible for always using the best available technology and for maintaining sufficient emergency response in preparation for the worst case scenario.

In case of accident, the operator must indemnify for all damage to the environment and to third parties. The operator must always give highest priority to safety and to environmental protection, ahead of economic interests. The operator must be fully transparent when it comes to incidents and near incidents and must report immediately.

Prevention of accidents must always be the top priority. But if a spill occurs, there will always be media attention, public outcry, and finger pointing. Companies as well as government agencies will always be criticized. The only way to deal with these situations is to be prepared. Have an oil spill contingency organization in place. Do everything possible to deal with the actual spill. Have lines of communication established. Be open, and inform and inform and inform, again and again, about what is going on.

Although we need stronger regulations and serious enforcement mechanisms, we also need positive goals that we can measure. How about the restoration of the Bohai Sea? We could close industrial point sources of pollution, treat sewage, phase out the overcapacity in fisheries, and so on. All this is possible. It has been done elsewhere, by countries economically weaker than China.

Special Policy Study on Regional Air Quality Integrated Control System Research

The study's Co-Chairs **Hao Jiming** and **Michael Walsh** presented the highlights of their group's report:

Air pollution in China is a serious problem. The concentrations of PM_{2.5} and of ozone in China are the highest in the world. The ratio of PM_{2.5} to PM₁₀ is high by World Health Organization standards, and this ratio is increasing.

To solve these problems, local responses won't help. Much air pollution comes from both local and regional sources. The regional sources are significant, which means we need to act at a regional level. In Eastern China, sulphates, nitrates, and ammonia account for about half the composition of PM_{2.5}, and to confront these multi-pollutants at a regional level we need to act against stationary sources, mobile sources, and area sources in an integrated fashion. Only in this way can we really improve air quality.

On the one hand, China has made a lot of progress and has come a long way in reducing emissions intensity, that is, emissions per unit of GDP. But because the rate of growth has been so great, overall the emissions have actually increased, and dramatically. Although we saw a slight reduction during the last FYP in sulfur emissions — a good sign — all other pollutants are increasing.

The good news is that during the 10th and 11th FYPs China made great progress in addressing auto pollution issues. In ten years it achieved what it had taken Europe 20 years to do, moving from Euro 1 standards in 2000 to Euro 4 standards for light duty gasoline vehicles. Even though the growth in vehicle population has been astronomical, the overall emissions increase was constrained because of this strong program. If we look however to the future, such a program must be continued, because otherwise the domestic forecast growth will continue to overwhelm the existing regulations. If we consider even forecasts from the International Energy Agency, it is dramatic to see that the growth of China's freight and passenger traffic will surpass the growth in both OECD countries and other rapidly growing countries.

At the end of the last FYP, China was scheduled to move forward to the next stage of pollution control, but it hit a wall because of poor fuel quality. Fuels and vehicle emissions standards have to be treated as a system, as they were in 2000 when lead-free fuel was introduced to allow the catalytic converter. China has now delayed the heavy duty truck standards — National Emission Standards IV — two times already, and that has contributed significantly to the increase in NO_x that we have seen during the 12th FYP period.

In addition, other aspects of the motor vehicle sector need to be addressed. Refuelling at service stations is only marginally controlled in a few cities, and is now a higher source of VOC emissions than are tailpipes. In Shanghai and in Hong Kong, marine facilities are also dominant sources. Other off-road, construction, and farm equipment sources need to be addressed.

China has shown that for short periods it can deal with regional air pollution problems, such as during the Shanghai Expo, the Beijing Olympics, and the Guangzhou Asian Games. But current laws, regulations, and organizational structures don't seem to allow those successes to become a permanent condition. So that is our challenge: to turn this into something we can institutionalize.

We have looked at how other countries have addressed this issue, and one of the key lessons is: this is an ongoing process. You have to establish your goals, determine your emission reduction targets, your control strategies, and your implementation program, and then evaluate and make adjustments as you receive more and better info.

Here are the group's policy recommendations:

Enhance legal authorities. This measure is needed to control PM_{2.5} and ozone and their precursors, and to address regional pollution and the major sources. It is striking that MEP does not have the authority to regulate fuel quality which is an important determinant of emissions from a variety of sectors, including the fuel sector. And we must increase the penalties for those who violate emissions regulations.

Improve institutional arrangements. MEP has multiple departments, including at least six responsible for air pollution control. But they are not integrated. No single entity has the authority and the responsibility needed to make it effective. The United States Environmental Protection Agency employs about 1400 people who worry about air pollution. In MEP we have maybe a couple of dozen, even though MEP deals with problems that affect more people and China has pollution levels much more severe than those in the United States. So more resources are needed in China. We believe there should be a dedicated atmospheric management department within MEP, as well as regional agencies. And we need an overall budget increase and a national clean air action plan.

Change the development mode. We have heard much about heavy industry, but it is dramatic when you look at the actual numbers: almost a five-fold increase in ten years in steel production, a tripling of cement, tripling of power generation. These increases in production create tremendous challenges from the standpoint of regional air pollution. We must move away from such high investment and consumption patterns, and away from the outdated production capacity of heavy industries. We must create new barriers for entrance into these heavy industries, and gradually locate these enterprises away from regions with the most severe air pollution problems.

Control pollution from coal use. Reliance on coal as a proportion of energy consumption should be reduced by 3% to 5% per year. Where we do consume coal, we need to shift to state-of-the-art

pollution controls, set regional caps on coal consumption, reduce the use of raw coal for residential heating and cooking, and apply the best technologies for end-of-the-pipe controls.

Strengthen control of mobile sources and fuels. Growth is almost inevitably going to be very high. Therefore we think that strict sulfur fuel standards need to be introduced in China. This is a cost effective approach to air pollution control. Also, tighter new vehicle standards are critical. These will have tremendous health benefits but also reduce black carbon and other short-lived pollutants that are critical from a climate standpoint. We need to control the VOC emissions from the whole system — not just the tailpipe, but the entire fuelling chain including the service station. We must promote public transportation but it must be clean and safe and optimize traffic management. Finally we must not forget the off-road sector that includes marine vessels, construction, and agricultural equipment.

Comments on the policy study presentations

The study group on marine challenges has stressed that the interaction between the oceans and land use mechanisms is very important. But does China have sufficient research capacities in these two areas — land use and ocean research — so that these kinds of interactions might be better understood and better controlled? The Co-Chair confirmed that yes, the group has been impressed by the research it received, and remains confident we have good knowledge of the relationships between drainage areas and what's happening in the sea.

The marine report offers many suggestions for handling oil spills. Here are three more: a) we should emphasize not only emergency response but also risk prevention, and in this area China has much experience, particularly in fire prevention; b) we need to “institutionalize” the way oil spill damage is measured so that our own short-term subjective human experience of the event does not disguise the actual scale of the damage; and c) we need to revise China's marine protection laws by removing contradictions within the legislation.

We should take care to mention China's non-governmental organizations (NGOs) in our policy recommendations. Note that the whole issue of PM_{2.5} was raised by NGOs. Although the United States embassy had been publicizing PM_{2.5} statistics for some time, the matter would not have been included in Chinese government action if NGOs had not played a big role in promoting environmental awareness among the public. If this ally is overlooked, if the great power of NGOs is not utilized, we would see a situation where environmental protection is still being led by government and by business.

It is true that public involvement is absolutely vital, because with the support of the public we can do better. But the listing of PM_{2.5} among the pollutants happened not entirely because of calls

from the public. The Chinese Academy of Engineering and the Macroeconomic Research Institute had already incorporated the WHO's guidelines. Starting from 2008, under the leadership of MEP, we revised standards for ambient air quality. It was made public on the MEP website and PM_{2.5} was already included. To include it in controlled pollutants is a step forward. Both the government and the public played a role in this.

When it comes to dealing with oil spills, the devil is in the details. It is true that there needs to be a single government agency to take accountability when the crisis happens, and that the operator needs to take accountability to manage the spill. But do we understand enough about all the conflicting requirements and priorities by other agencies so that these two so-called "single accountable" parties do not get handcuffed?

Dealing with oil spills is all about professional competence. When a spill happens, it is critically important to have the capability to manage it quickly. It is also important that the relevant government agency itself have the capability to assess the technical capabilities of those who need to have those technical capabilities. If you don't get this right, nothing will happen right.

The task force talks about the importance of safety as well as of environmental management. It is true: safety is the twin brother of environmental protection. If we don't do safety right, in the oil and gas business or in any other industry, we will mess up the environment.

Does California's broad range of experience in controlling VOCs apply to China? Indeed the study group did pay close attention to Southern California's practice in controlling PM_{2.5}. The team's international experts include a person from California, and the core members travelled to California to study on the ground. In fact, during the air quality group's next phase, control of VOC will be a key issue, and we suggest that during the 13th FYP VOC should be listed as one of the controlled pollutants.

Item 6. Draft AGM Recommendations and Discussion

Draft recommendations for submission to the State Council

With Vice-Chair Børge Brende chairing, Chief Advisor **Shen Guofang** introduced the draft 2012 CCICED AGM recommendations. Each of the five proposed recommendations is followed by a number of items or components. The final version of these recommendations, incorporating changes made following this discussion, subsequently was submitted to China's State Council. That final version is included in this report as section III.

Recommendation 1: Enhance institutional and policy innovation and enforcement to promote practical implementation of ecological civilization.

- 1) Develop mid- and long-term plan for ecological civilization construction at the macro level.
- 2) Reform and establish institutional systems adaptable to ecological civilization with great political commitment and wisdom.
- 3) Promote integrated institutional innovation towards the direction of green and ecological transformation.
- 4) Promote comprehensive pilot demonstrations of ecological civilization.

Recommendation 2: Establish a balanced and green regional development strategy, with eastern region as a lead and western region as a focus.

- 1) Establish general national principle and strategy for regional development to form a broader framework of regional green development.
- 2) Develop sustainable urbanization plans, and establish urbanization modes adaptive to differentiated regional characteristics.
- 3) Strengthen policy enforcement and establish coordination and cooperation mechanism for regional development.
- 4) Develop regional environmental performance evaluation and assessment methods, implement accountability system.

Recommendation 3: Strengthen joint control of air pollution to improve regional air quality.

- 1) Integrate regional environmental capacity, optimize economic structure and layout, and establish new regional joint control mechanism.
- 2) Revise relevant laws and regulations to provide legitimate guarantee for regional air pollution control.
- 3) Strengthen pollution control and implement multiple-pollutant synergic control.
- 4) Increase investment and strengthen science and technology development, and implement national clean air action plan as soon as possible.

Recommendation 4: Strengthen marine environmental protection and construct marine power.

- 1) Speed up the formulation of national marine development and environmental protection plan.
- 2) Strengthen legislation, law enforcement and governance mechanism of marine environment management.
- 3) Establish national marine emergency response planning system for major environmental incidents.
- 4) Strengthen the supporting capacity building of science and technology in marine environmental management.

Recommendation 5: Establish long-term mechanism with environmental quality improvement and risk prevention as objectives to promote strategic transformation of environmental management.

- 1) Develop and implement emission reduction policies to ensure realization of environmental protection objectives in the 12th FYP.
- 2) Promote strategic transformation of environmental management to adapt to new demands of socioeconomic development.
- 3) Implement differentiated sectoral and regional total amount control policies.
- 4) Implement actions and management system with objective of environmental quality improvement.
- 5) Establish long-term mechanism to promote institutional innovation, develop mid- and long-term emission reduction targets and roadmap.

Comments and discussion on the draft recommendations

These recommendations come just after the 18th Party Congress and its emphasis on ecological civilization. Therefore it would be good if we can speak more to what that concept means, specifically, that the commitment to ecological civilization cannot stop at the border. Yesterday the World Wildlife Fund (WWF), with the Chinese Academy of Science, released its *China Ecological Footprint Report 2012*. This report indicates that China's total ecological footprint is now more than double the capacity of China's ecosystems to support, which means there is a huge amount of impact being exported. China's dependence on mines and fisheries and forests overseas is having large consequences for many countries. We need to build this into the concept of moving toward an ecological civilization — a recognition that how China invests overseas, the terms on which it trades, the conditions on which China's companies act overseas, all should also be an important part of our CCICED agenda.

Thinking needs to be done about how much can be accomplished by government decree and how much by “incentivizing” citizens and businesses. Citizens and businesses want a better world, but it is always easier if someone else does the difficult work. Thus there is a strong disposition to shift costs onto other players — usually, of course, onto the government. Regarding Recommendation 1, Item 3, there should be more specificity about the need for a genuine cross-government signup, because it is important that all government agencies have a common approach and understanding about what ecological civilization means. It is unfair to leave this all to MEP. Ecological civilization has to mean exactly the same thing in all ministries, and it's vitally important that MEP has the full support of all other agencies.

The government needs to develop a broad, long-term vision of what ecological civilization will mean, in 2020, or 2030, or 2050 — a longer time frame than the FYP. This vision must address the concept on a number of dimensions, and broaden as it gets further away. Engagement with the public about the vision is important to set the scene for lifestyle expectations and investment decisions. We need precise but coherent goals beyond the 12th FYP, to 2020 and 2025. Then we need to tackle “normal policy stuff,” that is, policy coordination across these goals so that macro, micro, economic, regional, social, and environmental policies actually align and contribute to one another. And we also need: the engagement of the public around the changes and the reasons for them; efficient instruments; program stability and consistency, so that people and businesses can make decisions; comprehensive, reliable, and transparent information; and an effective, skilled, and honest regulatory system. But we must begin with that light on the hill — the grand vision with the longer time frame.

The recommendations address many matters at a national level. But with regard to industrialization and urbanization in Central and Western China, a lot of change will happen at the county level. But the governance, monitoring, and supervision capacities of these county-level governments are very limited. We should be concerned about the controlling ability of county governments in the environment sector. While it is good to have national policies and frameworks, we also need to look at the local levels. What is happening at those levels will have a big impact on the environment in Central and Western China.

The draft recommendations read like a list of command and control measures, punishments, taxes, and so forth. But civilization also rewards incentives, and we are missing incentives in this list. Agents of change are usually businesses, the private sector, the public, and these agents will operate more constructively if they help prevent the accidents and the other problems we are concerned about. And prevention is always the result of incentives, not of punishment. So we have to include more rewards and incentives in this list of recommendations.

In China, at the local or provincial or city government levels, the single most important concerns of officials are investment, job creation, and wealth creation. We should bear that fact in mind when we aspire to give environmental or ecological progress the same level of priority. Therefore we need to put in place a rigorous MEP-supported performance appraisal system for government officials. At the beginning of the year it would be expressed in terms of target setting, at year-end in terms of performance appraisal. Compliance, execution, consequence management, and transparency should be expressed not just in terms of punishment, but also with rewards and incentives so that the relevant officials can be held accountable. Such a system will help align officials fully with what the government is setting out to do.

Item 7. Open Forum

Open Forum 1: Regional Coordination and Green Development

This open forum was co-chaired by CCICED Vice Chairperson **Achim Steiner** and CCICED Secretary General **Li Ganjie**. In their introduction they set out the framework for the discussion:

China needs development which is sound and healthy. We want to moderate the pace of growth a little, and improve the quality of the growth so as to achieve a green transformation. The current international environment is complex and changing, and this has made our task more difficult. Regional imbalance is not unique to China but here it is even more serious and complex. A lot of initiatives have already been taken to address this imbalance, but to put all of them into practice will take time and effort.

We in the China Council have observed that China has achieved many transformations, in the economic sphere of course but also the sphere of sustainability and environmental protection, where China has seen new instruments, new markets, and new technologies. Yet at the same time, the era where some of these transformations have been “lower hanging fruit” is giving way to the need for deeper economic and structural transformation. For years China’s leadership has articulated repeatedly the need for balance. This afternoon we focus on the challenges presented by China’s regional imbalances, in wealth, income, opportunity, and ecological vulnerability. Such challenges are found in many countries but the context and magnitude of these challenges are unique to China.

We should also reflect on something peculiar to China – the ability to think in long-term horizons, both towards the past and towards the future. The timelines we sometimes use in our CCICED discussions transcend what we usually hear in daily life in other nations. China’s traditions and philosophy have as much bearing on these discussions today as do some of the technology frontiers and policy opportunities that we usually talk about. China’s ancient heritage and culture and ethics can provide some of the inspirational direction to guide us in formulating our advice today. Our societies will succeed or fail depending whether they address fundamental principles of living together.

The Co-Chairs then introduced the first of the leading speakers, **Erna Witoelar**, former Minister of Human Settlements and Regional Development in Indonesia. Here are some highlights from her talk:

The concept of sustainable development is great but it has been hard to implement a holistic approach in my country. Our government has been very “sectoral,” with people working in their own silos, so it has been difficult to combine the social, the economic, and the environmental

pillars of sustainable development. With the concept of the green economy, however, it is much easier to mainstream environmental aspects into economic development.

It seems that green development is focused on land use and special planning, which is where a lot of conflict exists, for example among conservation advocates, mining and oil and gas interests, and local communities. The good news about green development is that it produced the “green industry” movement: green technology, architecture, engineering, infrastructure, and so on. These innovations put the responsibility on ordinary people and professionals to live on a smaller scale, where things are a manageable size.

In Indonesia, we have a lot of challenges regarding land use. We have conflicts between national and local governments and also between government sectors, for example, public works versus the environment, mining versus forestry, and so on. There needs to be role-sharing between national and sub-national governments. Now that we are aware of ecosystem-based regional development, we can see that it is not in line with our habit of dividing our country into administrative borders.

Alas, the destruction is so much faster than the rehabilitation. We are frantically planting millions of trees each year but we can't get back to where we were. The replanting gives us a monocultural, man-made forest, short on biodiversity. We believe we should no longer “cut first, plant later.” We need to plan ahead to prevent bigger losses than what we have been doing in our current development.

We need special planning also to anticipate climate change; in fact we need a national action plan on climate change. For example none of our cities has at least 30% green open spaces; the maximum is around 17%.

Regional coordination among districts or provinces is vital in green development, because ecosystems go beyond administrative boundaries. In the case of river basins, for example, you can't stop the water at the boundary of the administrative region.

The eastern part of Indonesia is less developed than the west, and consists of thousands of small islands. But we keep making developments there that are more suitable for large islands. These buildings on small islands are on the wrong scale, and therefore uneconomical. So we should have a different approach to development there. In fact the eastern provinces are coordinating to advocate for building more ships, instead of more cars or motorbikes. For us, this is an unfamiliar way to do things, since we tend to think of our country as one nation, with a uniform mode of development. We like to go the easy way of having a single approach. So China is going in the right direction in moving toward a commitment to regional balance in development.

Simon Upton, Environment Director with the Organisation for Economic Co-operation and Development, spoke on the topic “Regional Cooperation and Green Development.” Here are some high points from his leading speech:

It is important to remember this: the challenges are so big we can’t afford expensive solutions. Cost is always an issue, and we cannot consider solutions so costly — no matter how beautiful they may be — that we can’t afford to implement them.

Incremental progress is not enough. Climate change modeling suggests that, as the world gets richer, per capita CO₂ emissions intensity falls. By 2050 everyone will be below the most efficient level today. But, in the process of reducing the intensity we’ve managed to double the overall volume of emissions. The point is that we need to do more than make some progress — we need to make a lot of progress.

The same point can be made about public health, in particular in terms of premature deaths from air pollution. By 2050 the number of deaths linked to ground-level ozone will have risen in every part of the world — even in so-called rich countries — as ageing populations can’t cope with the airborne pollution.

To begin to address these big problems, we need “joined-up thinking.” This means:

- We need to mainstream green into development and growth. Green thinking has to be integrated. For example, government ministries have to be talking to one another.
- You can’t manage what you can’t measure. This is true for household budgets as well as for national budgets.
- You must make decisions for the long term. China knows more about that than most countries do.

By 2050, 70% of the world’s population will live in cities. In thinking about how to make cities more compact, here are some key governance strategies:

- You need a regional, integrated, long-term vision.
- The vision must articulate the roles and responsibilities of all key actors and stakeholders.
- It needs good vertical and horizontal coordination.
- And it needs accountability, transparency, and reporting.

Once you build a city, it is there. It’s hard to un-engineer it. Here are some key policy strategies that will head off lock-in:

- Set explicit compact city goals.
- Encourage dense and contiguous development at the urban fringes.
- Retrofit existing built-up areas.
- Enhance diversity and quality of life in urban areas.
- Minimize adverse negative effects.

And you will need indicators to help you decide whether you are moving toward a more compact city with a different environmental footprint than a large, outspread, unplanned one. We can apply these indicators to one sector, for example transportation, which is a key element in how urban formation develops.

We like to use the “avoid, shift, improve” approach. In the case of transportation, we *avoid* a spread-out design, plan for a more compact environment, and think in advance about options for public transport, including for bicycles. We *shift* people in a way that they are happy about the shift, from private cars to public transport. And we *improve* by introducing infrastructure to support less polluting alternatives, such as electric vehicles.

For strategic goal-setting you need integration — joined-up thinking — in all aspects, including social, economic, and environmental. Integration is the key to coordinate multiple stakeholders. That means getting together often with overlapping urban authorities, cities, municipal areas, and territories. These administrative bodies have boundaries, but citizens don’t live within boundaries, they move across boundaries. So the people who manage the cities need to work together.

Among the enabling incentives we need carbon-pricing strategies and other policy instruments. Regarding emissions trading schemes, we expect to learn from China’s experiments at the regional level. But this is complex stuff, and in some ways a straight national tax would provide an easier revenue source.

Then there is the question of bringing the finance sector onside with the big investments. If we aim to stop locking in the future around high carbon, we will be making investments that will last 50 or 100 years. That requires innovative financial instruments with the same lengthy terms.

Human capacity is essential. In particular we need to build the capacity for doing assessments. There is no point having policies if you can’t enforce them, let alone measure the results.

We also need to promote consumer behavior and an awareness of green issues. Cities are great for achieving that because they are closer to the people than is the government. Some exciting environmental innovations have been the brainchild of local people responding to local issues.

How much can government really do? We need to be humble about the limits what we can achieve, especially from the centre. Regional and local levels of government can be more effective. People who create structures that are resilient and that they live in and can maintain will stay there for a long time. We know plenty of examples of societies — such as Angkor Wat — that looked resilient once upon a time but which nature reclaimed.

Zhai Qing, Director General of Department of Planning and Finance, MEP, reported on plans and progress related to regional coordination in the context of the State Council's 12th FYP for environmental protection. Here are his four main points:

1) In implementing our strategy for protection of regional environments, we will have different policies and management mechanisms for different regions. For Western China we will give priority to the ecology, to enhancing the supervision of resource and energy development activities, and to enhancing and securing ecological services. For Northeast China we will protect ecosystems such as forests, and do corrective and remediation work for soil erosion and desertification, particularly in the granary belt. For Central China we will maintain the region's environmental and resource carrying capacity, improve infrastructure, and develop the level of urban and rural areas. For Eastern China we need to reduce emissions of pollutants and accelerate the transformation of the economic growth pattern.

2) We need to develop the national environmental functional zoning plan to promote environmental health and ecological security. This plan will involve management by zone and by category. In our initial thinking we have five zones: nature, ecological function regulation zone, food and security protection zone, settlement development zone, and resource development and guidance zone. This year we developed technical specifications and rules, and in some provinces we did pilot projects.

3) We have been promoting the improvement of rural environmental services, for example, drinking water watershed protection. We encourage townships and large villages to develop centralized drinking water facilities, and smaller villages are encouraged to develop low-cost wastewater treatment facilities. We will also develop collection, transportation, and disposal facilities for rural residential waste. Already we have invested about RMB 30 billion, and 26,000 villages have benefited from the program.

4) We will develop an urban environmental master plan. The current plan focuses mainly on prevention and control of pollutants. It does not give much guidance about long-term development or city planning or limits to growth. Our master plan will help regulate the scale,

size, and layout of cities. Ultimately we want to achieve an integrated plan that covers protection of the eco-environment, economic development, city development, and land use. Thus it will be a 4-in-1 integrated urban sustainable development system. We want to make sure that environmental protection is changed from passive to proactive. The current disconnect between environmental planning and other kinds of planning will become a very active integration.

Dirk Messner, Director of the German Development Institute, presented a leading speech on the topic “Low-carbon transformations — seven key elements.” These are the highlights:

The global middle classes are growing rapidly. In 1990 we had 1.3 billion people defined by the United Nations as middle class. By 2030 there will probably be 5 billion defined as global middle class — 80% of them in the non-OECD world, especially China and other parts of Asia. Thus we cannot just scale up the current growth and consumption patterns. We must find new types of consumption, new growth patterns, and new forms of well-being. Western China, for example, cannot afford to follow the consumption pattern we have already seen in Eastern China.

Germany has been making the most ambitious energy transition in the OECD. My country is abandoning nuclear power and increasing renewable energies in the mix to 80% by 2050. This is a huge social transformation. It goes beyond technologies and includes consumption patterns and regulatory frameworks. China can learn a lot from the German experience, and I hope we can bring this issue into CCICED debates in future.

Finally, we must remember that we are under huge time pressure. If we cannot peak GHG global emissions by 2020, then we can't stay under the 2°C threshold. We all have to move forward much faster. China is an important part of this equation.

Here are seven elements of what a low-carbon transformation is about, and some reflections on what this means for China:

1) If you look at different types of significant social transformations — the abolition of slavery, the emergence of the European Union, “structural adjustments” in Latin America — you know the elements that drive these big changes:

- *Vision.* China is strong on this area. We have just been reminded of the capacity of the Chinese people and culture to think long-term.
- *Technology.* If you do not have the needed new technologies, you cannot solve the problems. Fortunately China does have low-carbon technologies.
- *Crisis.* Most big transformations are driven by crisis. We run into trouble and we change our policies. But we need to avoid a crisis this time, because if we have a climate crisis

then we run into irreversible problems. Therefore we need to ignore this type of driver in this case.

- *Knowledge.* To take preventive action you need an alliance between policy-makers and researchers. New knowledge needs to be translated quickly into policy implementation.

2) Three sectors are key to a low-carbon transformation: energy, land use, and urbanization. These are where most emissions come from. All three are relevant for China, especially when China “goes west” with modernization. Regarding energy transformation, the potential for China to invest in solar thermal power is huge because the Gobi Desert is there. In fact, solar thermal power stations already in the area are competitive and have been supporting the mining industry. We are making progress in carbon efficiency also in the urban sector, but one area where we have made little progress worldwide is land use, particularly forestry and agriculture. So China should invest in low-carbon agriculture.

3) Prices for renewable energy carriers are going down rapidly. We calculate that if renewables comprise only 20% of the global energy mix, then you would see price convergence with conventional energy carriers. China has been one of the drivers bringing these prices down, but China must make hard decisions now about whether to invest in these renewables or in fossil-based energy carriers in Western China. A low-carbon club of countries moving into this direction might be helpful in reaching this 20% tipping point as rapidly as possible.

4) Pioneers and change agents are important in any process of transformation. China is very good at learning from pilots, so the issue is how to scale up pioneering activities and learn from these pilots both within China and internationally. This is something CCICED already does, where scientists, researchers, and political decision-makers work together.

5) To achieve a low-carbon transformation, high upfront investments are unavoidable. But if you look to the whole investment cycle in the energy or building sectors, the investment costs for high-carbon and low-carbon energy solutions or building solutions are similar. If you decide to go low-carbon, during the first two decades you need upfront investment, but you gain with savings during the second part of the cycle. China however right now can afford to finance these upfront investments, whereas other world regions are troubled by debt. The structure of these low-carbon investments needs to be divided like this: 20% for energy infrastructure, 50% for buildings, transportation, and mobility, 15% for research and development, and 15% for land use and the industrial sector.

6) Low-carbon transformation means we are changing a whole system. We need to make progress in several arenas of change: the growing number of actors involved in low-carbon transformation, including companies, cities, and research institutions; the introduction of green

innovations; shifting norms, values, and heuristics; new concepts of what economic development means; international learning processes (such as CCICED); and finally, new policy regimes. At this point we are all learners and beginners. Since we are all at the start of these low-carbon transformation processes, the possibilities to learn from each other are important. Transforming the system means we must foster “legitimacy for change.” And we must recognize that power dynamics will change with more low-carbon companies in the economy. Finally, we must demonstrate that a radical and ambitious low-carbon energy transformation — like Germany’s — is possible and can work.

7) Three mechanisms drive these arenas of change forward:

- We need transformational policies. Incremental change is not enough. We need to decouple, not just make efficiency gains. We need to find the right transformational policies for different sectors, regions, and circumstances.
- These arenas of change need to co-evolve, to be mutually reinforcing. For example, if we are making progress with new technologies it will be easier to change policy regimes. We need co-evolution or social interchange.
- To make this big transformation toward a low-carbon economy, we need a “social contract” among the main actors — the state, society, NGOs, the private sector, and research — that will serve to help stabilize these big change. China’s introduction of the concept of an ecological civilization moves exactly in that direction.

The open forum then heard from **Hu Angang**, Professor of Public Policy and Management at Tsinghua University. He outlined changes in China’s development during the past 30 years, and made these points:

According to the United Nations’ Human Progress Index, China in 1980 was in the lowest ranking group, by 2000 it had moved to the middle group, and by 2020 it should be in the higher level group. Not only is China progressing in absolute terms, but it is catching up with more developed countries.

The Human Development Index shows a similar advance. In the early 1980s, about 97% of Chinese people ranked low on this indicator, but by 2020 it is expected that a similar proportion will rank high. The life expectancy of Chinese people has been increasing along with their educational development. Even in Tibet, life expectancy is higher than in India. And access to education in Tibet has been improved compared with India, though Tibet still lags behind other Chinese provinces.

There are several reasons for these big changes:

- The growth of China's economy during the last 30 years, when the income of Chinese people increased 10 times.
- Large-scale migration of the population, narrowing the differences among different parts of the country.
- The tax sharing system, which has provided a lot of dividends because of the transfer payments made by the central government to less developed areas.
- In Tibet and Qinghai, the progress that has been made especially during the past ten years.

What is the vision of China in 2020? China will become a higher medium income country, very similar to high income countries. Many better developed areas in China will become high income areas. China's Human Development Index, currently 0.703, will increase to 0.76. By 2020, China will be a well-off society.

As for future development, we need green investment in, for example, hydro power and other infrastructure. The investment in green development will increase greatly during the 12th FYP to RMB 3.4 trillion and it will further increase to about RMB 8 trillion. As the central government has said, lip service does not work. We need to take substantial actions and specific plans.

We hope these investments can have ecological benefits, for example, lead to better management of the environment. The number of people who benefit from green investment should be an indicator of the progress and efficiency of the policy. If the future RMB 8 billion green investment can be made, we need to calculate how it can benefit the whole population. Empty words will lead us nowhere. Only substantial actions can create substantial benefits.

The last of the leading speeches was delivered by **Veerle Vanderweerd**, Director of the Environment and Energy Group, United Nations Development Program. She reflected on the earlier speeches and made suggestions about revising the draft policy recommendations. Here are her four main points:

First, the earlier conference speakers all stressed that we need to find a new development path. We need transformations. How many times has the word "new" been used? As Vice Premier Li Keqiang noted, there is no precedent in history for what China is going through; there is no blueprint it can follow. Indeed China is probably the first country to try charting a way toward the post-consumption society — while at the same time having over 500 million people still in poverty, and while still having to industrialize in different regions.

All the speakers have highlighted the fact that the sweep of history that has taken centuries to happen in the rest of the world has happened in China only in the past couple of decades. All the problems are appearing at the same time. This is why when we talk about ecological civilization, we need first to define that vision. We have to identify what is this new development paradigm, what is this new era we are going into. Charting this new route is not only about deepening environmental management and pollution abatement strategies. It is just as much about changing the economy, defining new ways of producing and consuming, and changing lifestyles.

The concept of economic progress has to go beyond GDP. We need different norms and milestones for sustainable economic success, and these norms and values have to incorporate environmental and social factors. In other words, for the growing economy to be sustainable and inclusive it has to become a *tool* for achieving ecological civilization. The economy is not a goal in itself.

Second, this new definition of progress means that we need a new way to measure it. An earlier speaker has said that “what we cannot measure, we cannot manage.” We must identify targets and goals for ecological civilization. In particular we need a new indication system. Ecological civilization must put people first. It is all about improving people’s livelihood — which doesn’t mean only improving their income. It means also improving their health, their housing, their physical environment, proper education, and security. GDP is only one part of it.

Third, one aspect that hasn’t been given enough attention is the crucial link between a sound environment and poverty eradication. This new economy should first focus on the bottom three billion and bring them into the economic mainstream. We need to give more attention to the woman who lives on one dollar a day. There are many examples — India, for example — which show it is possible. The first requirement is to give people access to water, sanitation, and energy. But then come more difficult issues: access to land, to microfinancing, and to legal recourse.

Remember that more than four billion people in the world have no access to legal recourse. When you are treated wrongly, how can you defend yourself if there is no legal system? How do we make sure the three billion at the bottom of the pyramid, or the 500 million poor here in China, have a say in the policy-making that impacts their lives? That’s why in the draft recommendations, when it says “green economy” I suggest “inclusive green economy” to make a plea for the three billion of the poorest people at the bottom of the pyramid.

Finally, I ask that in the policy recommendations we consider referring to Rio+20. From that conference we have an outcome document, a strong one, about integrating the three strands of sustainable development. We cannot say that environmental action and social action and

economic action are unrelated. The name of the game is to change our economy and to better incorporate and address environmental and social issues.

The Co-Chairs then invited speakers to deliver brief “leading comments.” The first of these comments was presented by **Tang Min**, Counselor of the State Council and Vice Chairman of the YouChange China Social Entrepreneur Foundation. Here is a summary of his main points:

Although I am new to the environmental area, I have a couple of suggestions drawn from my perspective in other fields of work.

First, I hope that information in future CCICED reports can be benchmarked or compared with other developing countries. Already some reports include comparisons between China and Australia, or the United States, or Germany. But China lags behind a lot of the practices and conditions in those developed countries, so those comparisons are not relevant or useful. On the other hand some developing countries are encountering similar kind of difficulties and challenges as we are. They already have found good solutions, their policies are being implemented, and their lessons can be useful to China.

Second, why do we have so many environmental issues? Because this is a typical case of market failure. People all want a free ride. China’s market economy is even more market oriented than in developed countries, because people are all profit driven. Local governments, entrepreneurs, individuals are all profit driven. Therefore if we do not take advantage of the market mentality and utilize market and pricing mechanisms, we have wasted a good opportunity. We can’t always rely on government actions or administrative orders.

How can we correct the current distorted market mechanism? In the United States, emissions trading is well developed, and such a system should be introduced to China. Energy pricing is another issue. If the energy price can reflect the cost and price of renewables, then the renewables will be developed well. We already use tiered, categorized pricing and tariff systems for water and power in the business sector, but can we extend that to the residential sector? The point is, if you use renewable sources you will benefit, while big users and big polluters would have to pay. We need “command and control” to some extent but we can also rely on market forces.

We must also consider public participation, public engagement. There is no need to mobilize people because the public in China is already concerned about the environment, about issues like PM_{2.5} for example. Already, the public is leading the government environmentally, because people want to enforce their environmental rights. If this problem is not well handled, we will see social

tensions similar to what we have seen in China with land expropriations from farmers. We should learn from international experiences and prevent the problem from becoming worse.

How can we leverage this public force into green development and environmental protection? How can we encourage people to have positive and constructive participation in the environmental area? One way is by increased transparency. We already have some transparency, but for people to have more participation — or at least, not to panic — then we need greater transparency. We also need to present information in clear straightforward ways that people can understand. And we should take advantage of the new media formats which have already become an important means of social mobilization. Finally, we should work closely with environmental NGOs — the earliest NGOs in China.

Hau Sing Tse, Executive Director of the African Development Bank, offered these leading comments:

I well appreciate the discussion about what is green growth or green development, or “inclusive green growth.” In the African Development Bank we focus on how we do green infrastructure and on the private sector’s role in the process of making growth not only green but inclusive.

Earlier speakers articulated well the structural transformation that China is going through. On the question of regional strategies, however, I have a different take. I would argue that regional imbalances could actually strengthen how China will realize its ambition of achieving green growth.

In the west, the pockets of poverty are in the fragile areas which, at the same time, have the natural resources that can be exploited to fuel growth. Furthermore, the sharper the differences among the regions, the easier it is to target the eco-compensation, the fiscal transfers, and so on. It is important to understand the comparative advantages of different regions, but also important to understand their comparative disadvantages, because these facts will affect your policy choices.

Next, the Co-Chairs introduced **Li Xiaojiang**, President of the China Academy for Urban Planning and Design. Here are the high points of his remarks, which concerned China’s counties and townships:

As we know, China’s population and industries are concentrated in the coastal areas, along the main railway routes. Other areas are sparse. It seems however that things are beginning to change. Between 2005 and 2010, industrial development in Western and Central China

accelerated. Also, because of the high cost of living in big cities, people are moving to smaller cities and counties. This is a new trend. To some extent Central and Western China are catching up.

We have a lot of small counties with populations of about 200,000. These counties house about 50% of the urban population — a different pattern from what the government had planned. Between 2006 and 2010 in the big cities there is negative population growth. However in small cities and counties there is not negative growth, which shows there might be a population shift.

So we face a lot of challenges. In the past we focused on the big cities. Now however we are also considering the economic development and needs of the small and medium-sized cities. This is because these counties and townships can help the development of the rural areas in China.

A lot of the resources, however, are concentrated in big cities, while smaller and medium-sized cities cannot get the resources they need. Now Hebei province has set a good example for us. They have been changing their allocation of resources — some for the big cities, others for small and medium-sized cities.

At the same time we are facing increasing environmental problems. In Guizhou for example you might find the coal, chemical, and other polluting industries concentrated mainly in townships, which means it may be difficult for us to control the pollution at this level.

To sum up, during this round of industrialization and urbanization, more attention should be directed to small towns and townships.

Siebe Riedstra, Secretary-General of the Ministry of Infrastructure and the Environment of The Netherlands provided the last of the leading comments. Here are the highlights:

We are all pupils and all teachers. It's important to stress that because whenever we want to make decisions toward green development, it's a complicated step. We are asking for many big things — green consumption, green production, inclusive social development — and if you are a growing country with a lot of people, or a small country, it's a major challenge for you.

Green development calls for new instruments. We already have a long tradition of sanctions and stimulus — taxes for example — to motivate people to carry out new types of consumption or production. But we also need more participatory social arrangements. I believe in multi-stakeholder involvement — of civil society, enterprises, government, all those institutions.

It is important to give good examples to each other, to learn from each other, for example by practicing green development pilot projects. In the Netherlands we have had good results with multi-stakeholder projects that can be replicated anywhere in the world, involving waste management, electric-powered transportation, energy production from water treatment plants, and sustainable food consumption.

General debate and comments

China's entire coastline is ecologically deprived. Here are suggestions for two changes to the draft recommendations. In Recommendation 2, concerning regional development, I suggest adding: "In the coastal regions we must pay special attention to the marine ecosystem, which has very high value but which is vulnerable to human activities." And in Recommendation 4, I suggest adding: "The large-scale rapid pace of land reclamation activities on the coast adds to the tremendous pressure on the seas."

These are good recommendations but I hope they can be strengthened because the current development of Central and Western China is not "normal." It is growing too fast, and different sub-regions are competing in terms of the pace of growth. Some places want to double their economy in five years, and bring the annual growth rate to 15% or 20%. Some Western China regions aspire to achieve the same per capita GDP as Eastern China by 2020, which is why they have to grow so much faster.

A lot is happening in Western China's urbanization. They are building industrial parks that are useless, and properties that are not occupied, and unnecessary infrastructure. Their GDP is driven by high investment, and by energy and resource industries. They are creating better investment conditions but at a cost in resources and environment. They are trying to compete against Eastern China, producing a high growth rate with undesirable consequences. It will not be beneficial for green development if all regions want to grow by 13% or 17% for a long time. There is no scientific or economic basis for that. It is just not possible.

We need an indicator system more in line with concepts of scientific and green development. Although the development plans for Central and Western China talk about other indicators, on the whole people are basically competing on the basis of GDP. That is the reality we are living with. We need instead indicators that measure human capital, natural capital, living standards, employment, education, and health and medical services. Such indicators may help reduce people's motivation to be single-mindedly focused on GDP growth.

We need to push beyond rhetoric and talk about concrete guidelines, about practical policy frameworks, so that the process will operate to actually guide and produce the green

development we want. In this light it is worrying that we are not establishing a policy for guiding development in Western China. We hear a lot about the region being relatively pristine and therefore having a tremendous capacity to absorb environmental insults. But given the excessive public investment plus the extractive industries, there is need for a dynamic policy framework, one that can adjust to changing economic conditions and levels of investment but that continuously provides environmental benefits. One example of such a framework is an American policy regarding air quality management called Prevention of Significant Deterioration, or PSD. It is used to evaluate the sanctioning of new emissions sources in areas where the air quality is actually quite good and you want to preserve that, but at the same time you want development to occur.

The focus on energy, land use, and urbanization that we heard about earlier would give precision to that kind of framework, but we also need to look at traditional air and water issues. In Western China water is in short supply. New industrial development will drain supplies that are already stressed by climate change and overburdened by industrial discharges. You need EIA and sanctioning processes that address the uniquely sensitive nature of those ecosystems. You need to find a way to maintain those ecosystems as opposed to degrading them so that every place is not only equal in per capita GDP, but also equal in per capita environmental suffering.

CCICED's recommendations to the State Council are usually drafted in general terms, lacking details. They are styled this way for several reasons. We do not want CCICED to drift away from a policy focus into becoming a body that only recommends technology. This is why we allow longer research reports, where writers can address issues with as much detail as they want. But when we get to the point of making recommendations, these must be understandable to senior decision-makers who may or may not be knowledgeable in the technical field.

Sometimes it is necessary and valuable to highlight the technical side of things, for example, with the reports on PM_{2.5} and the Bohai Sea. Unless you understand the technical nuances — say, of how smog forms — then you won't understand the problem. In the case of both those special policy studies, the writers were able to make a highly technical field understandable and also explain clearly how laws would have to be changed. For example, the PM_{2.5} report points out that current air pollution laws are already obsolete because they focus on problems of the past such as coal burning and SO₂. And the Bohai Sea study showed the fragmentation of authority and the regulatory framework that is insufficiently robust in the face of intensive development and emergencies.

Also we must remember that CCICED's recommendations are only one part of a large conversation that is happening in China. We are communicating with the premier, and at that level the Council does not have the final say. Its function is more to orient the conversation. But

there is no doubt that the task force reports — the substance of the work — will live on well beyond the presentation of the recommendations.

Clearly we have to focus on the reality of implementation. That means in future we must consider matters below a national level, even to sub-regional levels, for example as with the Bohai Bay study. Even though it concerns a small area of China, the issue is a huge and difficult challenge, not so much a technological challenge as a behavioral and institutional one.

An important factor in green development will be the strategy for the auto industry, which has grown very fast. Some forecasts say that eventually there will be 500 million autos in China. The problems this creates will not simply be environmental. The issue is also energy security — how can we supply power to these cars? It is about land use — how do we build roads. And it is about the planning and layout of cities. So we need to look a more integrated approach to developing the industry. This issue should be included in CCICED research, and soon. If we wait until the number of cars reaches 300 million, it will be too late.

Regarding the control of PM_{2.5}, the State Council has already approved an integrated strategy on pollution control — but it is a plan only for the 12th FYP period. We must have an even longer-term plan. MEP and the Chinese Academy of Engineering should work together on a strategy, so that by 2030 we can bring up air quality air in China to a higher level.

The starting point for discussion about the modernization of Western China is how to avoid prolonging the current growth pattern. It might happen that old, dirty industries will be driven toward the west because employment and poverty are issues there. But prolonging the old development pattern in Western China needs to be avoided. Three principles are key:

- *Avoid lock-ins.* During the next ten years key decisions will be made regarding city planning, energy, transportation, and other kinds of infrastructure. These should be green decisions.
- *Leapfrog.* Instead of copying the Eastern China development paradigm, Western China should leap over that mode and embrace a new, green paradigm.
- *Invest in knowledge.* Universities and other knowledge infrastructure helped drive modernization in Eastern China. These knowledge structures are still missing in Western China.

What China is doing now is important and relevant for many other countries. For example, what is happening in Eastern China is relevant for the OECD, and what is happening in Western China is relevant for many developing countries.

In the draft recommendations, the conceptual framework for green development still fails to sufficiently link poverty and the environment. It doesn't recognize the relationship between poverty and the lack of clean water, air, land, and so forth, or the fact that new green industries can boost employment.

We need more research on differentiated industrial, fiscal, and taxation policies for different regions. Xinjiang region, for example, has limited water but is rich in other natural resources. Therefore we must have strict rules to protect the water but for the development in other areas probably we can apply looser or preferential policies.

We have been bringing forth new concepts, novel ideas, but not much related experience, whether in China or overseas. Therefore we should have pilot or demo projects before we try to introduce those new ideas everywhere. MEP already puts more focus on cases and pilot projects. In other words in addition to the macro policies we should also make efforts at the mezzo and micro level so we can identify the strategies that suit the characteristics of China.

We have heard many terms: transformation, ecological civilization, green development, the green economy, and so on. Clearly we are at a moment where the drivers for change are unusually acute, both environmentally and socially. The convergence of the environmental and the social in terms of changing economic policy paradigms is something that both the Party and academics have recognized and is finding its way into policies.

The regional imbalance conundrum is acute. In some ways China is a mini-reflection of the globe today, given the enormous imbalances in economies. Maybe China is actually pioneering this transformative approach to deal with inequities or inequality or imbalances. In the formulation "the east leads but the west is the focus" the key question is: does China's west follow China's east, or does the west invent its own development model? If the competition is only GDP versus GDP, then Western China is perhaps heading for a serious ecological and social crisis.

Constantly we have heard the appeal for integration. You have to integrate these concepts because only then can they be transformative. You can't solve economic problems in the environmental domain alone, and you cannot have economic policies if you are unable to maintain the natural foundations. The degradation of ecosystems is a great cost to China's economy. It is through integration — sectoral linkages, rural-urban linkages, or public policies and markets — that this problem will be addressed.

How to implement green development in Western China? What are the tools? Many countries, developed and developing, have experimented with fiscal transfer mechanisms to deal with regional imbalances. Also we have the notion of the social contract, and public awareness, and

information transparency — all these are ingredients that may help China translate its vision into a practical toolbox that it can deploy. But what is the strategy for a region like Western China, because the concept of green development means there has been an evolution from the model applied 20 or 30 years ago in Eastern China. So the assumption is already in place that something else must drive that development.

Open Forum 2: Strategic Transformation and Green Development

This open forum was co-chaired by CCICED Vice Chairperson **Børge Brende** and CCICED Deputy Secretary General **Xu Qinghua**. In their introduction they suggested three points for discussion during the session:

- How can the transformation toward green development be given the same value and priority as other elements in a moderately well-off society?
- How can green development best help to narrow the wealth gap between richer and poorer in China?
- What are the most significant challenges to be faced in constructing a new green development governance model appropriate to China's condition?

They then introduced **James Leape**, Director General of the World Wildlife Fund. Mr. Leape delivered a leading speech on the topic “Towards Decoupling Growth from Resource Depletion — Strategic Transformation for China.” Here are the highlights:

As a global society we are living as if we have two planets to support us. We already use 50% more resources each year than the earth can sustainably provide. We must recognize the growing significance of China in that overall picture. Five years ago, the China Council commissioned the first-ever analysis of China's ecological footprint, and yesterday we released the third edition in that series, the *China Ecological Footprint Report 2012*, prepared by the WWF in collaboration with the Chinese Academy of Sciences and other partners.

It tells us that China now has the largest ecological footprint of any country in the world. This is in part a factor of the size of China's population, but also a factor of the rapid growth in consumption per capita in this population. China's per capita biological capacity — how much biological resource there is in the country to support development — has remained relatively constant since 1960. At the same time China's share of global population has actually declined slightly. But China's ecological footprint shows a strong rise. Although China's population is 20% of the global total, it provides 25% of total footprint.

The components of that footprint are the amount of land converted to cropland or to grazing, or harvested for timber, and so on, but one component stands out — the rapid increase in carbon

emissions, especially in recent years. From 2003 to 2008, carbon footprint grew 76% so is now more than half the total footprint.

Another factor is the unfortunate decoupling of efficiency and consumption. Even though China's production efficiency has been rising, consumption has been rising more quickly. Thus the use of resources rises more quickly.

China's per capita footprint is still significantly lower than that of other industrialized countries. For example, it is less than one-third the footprint per capita of the United States. But China's per capita footprint already exceeds the earth's ability to sustain it. If everybody lived as the average Chinese person lives today, we would still need more than one planet to support us. China has already surpassed sustainability, even if it still lags behind industrialized countries.

The challenge before us is pressing. The fact that China's ecological footprint is 25% of the global total, that its footprint is more than twice its own biocapacity, and that China is using more than twice as much resources each year as its own systems can provide, all mean that anyone can plainly see the depletion in China's own ecosystems, but also mean that there is growing pressure on ecosystems around the world from consumption here in China.

The transformation that needs to happen starts with valuing natural capital — with recognizing that future prosperity depends on natural capital which is the foundation for the economy. For example, after the 1998 Yangtze basin floods, China set about restoring wetlands and lakes in that system. China worked with governments and international corporate partners to restore 300,000 hectares in the middle of Yangtze basin. That restored area has benefited local communities in terms of agriculture and fisheries, but also in terms of flood absorption capacity equal to more than half that of the Three Gorges dam. This is natural capital — recognizing that healthy lakes and wetlands have direct value in supporting the economy — and that recognition is fundamental to thinking about the transformation that has to happen.

A second dimension of this transformation is measuring progress. Economic and government decision-making will be driven to grow GDP, but we have to get beyond this. We have to find new indicators that measure what really counts — to measure progress towards an ecological civilization. A few weeks ago, jointly with the China Centre for International Economic Exchanges, WWF released a first attempt at a "green economy indicator system." This is about bringing green into GDP, bringing social and environmental sustainability into our calculus of national accounts.

One idea that China has pioneered in recent years is "drawing red lines" around arable lands, that is, limiting the total conversion of arable land around the country. We need to do the same

thing with ecological assets. It is time to draw ecological red lines to make sure that important ecosystems and ecosystem services are protected as development goes forward.

Another dimension of the challenge is consumption. China's large footprint comes in part from a drive toward an increasingly western pattern of consumption. Part of the challenge is to bring back the bicycle — to bring back forms of urban transportation that are more benign than the traffic jams you see across this city and other cities in China.

It is also a matter of diet. If current trends continue, the global footprint by 2050 will be the equivalent of three earths. However, if we make dramatic improvements by introducing renewable energy and by reducing carbon emissions, but we continue to eat meat, we will still need the resources of more than one planet. It will only be by reducing our meat consumption — eating the way Malaysians do — that we have hope of reducing the world's ecological footprint. Collectively as a global society and also here in China we need to be aware of the impact of meat consumption on our sustainability.

China's strategic transformation is of course about what happens here in China. But it is also increasingly about how China is engaged overseas. China is an important investor in many developing countries, and for many commodities China is the world's biggest market. So China can play a huge role in shaping the course of development worldwide. In some regions, China's investment has become so large that development in those regions is actually tracking the health of the Chinese economy. In other words, what happens in Africa reflects what happens in China.

China's cooperation with countries in Africa and in other regions is important for their ability to build ecological civilizations in their own nations. Therefore, bringing the idea of ecological civilization into development assistance policy, into China's investments around the world, is crucial. It is not just about what the Chinese government does. It is also about what Chinese business does.

Increasingly we have global norms defining sustainability in agriculture, commodity trade, and other sectors. The Forest Stewardship Council is increasingly becoming the global norm for sustainable management of forest resources. We have a similar system in place for palm oil, which is the main driver of forest destruction in Southeast Asia. More than 13% of the palm oil market is now covered by a sustainable certification regime.

Major global corporations are now stepping up to these systems. 57 of the world's largest brands have now committed to eliminating deforestation from their value chains by 2020. They will source certified sustainable supplies of pulp and paper, timber, palm oil, soy, and beef, the biggest drivers of forest destruction in the tropics. You now see the ten largest retailers in China

signing up to begin to look at this challenge — to look at the role they need to play in sustainability. The private sector has a huge role to play. Both global actors and Chinese companies are part of helping to build an ecological civilization in China and in the countries where they draw their supplies.

The Co-Chairs introduced **He Jiankun**, former Executive Vice President, Tsinghua University. His leading speech addressed the topic “Strategy Transfer of Low-Carbon Development in China.” Here are the main points he made:

China’s economy faces incredible pressures in transforming to a low-carbon development model. Over the past 20 years China has made a big effort to reduce carbon emissions. Since 1990 energy intensity per GDP in China has declined by 56%, and CO₂ intensity per GDP has decreased by 58%. However, total energy consumption increased 3.5 times, because GDP grew 8 times. Coal production has reached 3.5 billion tons — which exceeds what our environment can sustain — and the proportion of imported oil has reached 55%. Our failure to put limits on our use of energy is creating extremely severe challenges to our environment.

Under the Durban Platform to address climate change and to keep global warming under the 2°C limit, all nations must enhance their efforts to reduce CO₂ emissions by 2020. Total CO₂ emissions in China are about 25% of the world total, and are growing quickly. Therefore it is imperative that low-carbon development should be put into place in China.

It will be necessary to coordinate domestic and international issues, short-term and long-term, and national and regional situations. By 2020, CO₂ intensity per GDP should decrease by 40% to 45% compared with 2005. Because of China’s unbalanced growth, the eastern areas are more developed and are growing faster. It is important for us to hasten the transformation of the model so we can achieve our CO₂ emissions peak targets in the eastern cities around 2020. But China will pursue these controlled objectives in a gradual way.

Our medium and long-term energy strategies will be transformed from traditional security supply, and we will guide energy demands. The 12th FYP has already proposed the rational control of energy. New and alternative energies should be used to enhance our energy portfolio now. By 2050, the proportion of new and renewable low-carbon energies should be about one-third. This will make it possible to reach the peak energy demand faster, but consumption will continue to grow slowly. We hope that gradually this demand will be resolved by non-fossil fuels, so the use of fossil fuels will reach a peak and then gradually decrease.

To meet these goals, China must transform to an industrial system characterized by low-carbon emissions. It must first achieve a peak of energy consumption and carbon emissions in industry. To achieve this target, energy consumption in industries must steadily decline. Communication, transportation, and construction will probably continue to have energy consumption, but we hope we will be able to depend more and more on new and renewable energies.

Accelerating the transformation of this pattern of development will be key to achieving low-carbon development in China. We need to change the mode of economic growth, and to expand final consumption from investments and exports. The rapid growth of investments stimulates infrastructure construction and industrial capacity, which encourages rapid development of energy intensive industries. This will adversely affect our situation, so we need to adjust the industrial structure and reduce the energy intensity per GDP. If we can reduce the share of investment in GDP by 1% and increase the share of final consumption in GDP by 1%, it will contribute to declining energy intensity per GDP by 0.45%.

So, in order to define the position of low-carbon development in our overall development strategy we need during the next 20 years to have a peaceful and positive international environment. China will then be able to accelerate its transformation model to become a greater economic power. It will change from a society that is resource-dependant and given to extensive expansion to a technologically innovative economy. Instead of blindly pursuing an economic growth rate there will be greater focus on the quality and efficiency of this growth.

The high-carbon development path characterized by copying and pursuing and chasing others will change to a low-carbon path characterized by independent innovation and green growth. So, we need to strengthen the construction of our legal, fiscal, and financial policies in order to support low-carbon development.

Next, the Co-Chairs presented **Roger Beale**, Commissioner of the Climate Commission of the government of Australia. The topic of his leading speech was “Strategic Transformation and Green Development: a Critical Decade.” Here are the highlights of his talk:

This is a critical decade for China and the world. If China fails to cut air, water, and land pollution it will condemn another generation to chronic health problems and to shorter lives than they need have, and reduce its capacity to feed itself.

Environmental degradation is already a large drag on China’s national GDP and a threat to social harmony. If we fail to move very soon toward a low-carbon economy, in China and abroad, it will be very difficult to keep within the agreed 2°C guideline on global warming. Investments in

the next decade must be able to survive a low-carbon future or run the risk of being made redundant long before the end of their engineering life.

Thus, this is a critical decade. The decisions we make this decade will cast long shadows into the future. To make the wrong decision would be a great economic waste as well as delay the achievement of an ecological civilization. Achieving a moderately well-off condition for China's population by 2020 and through to the 2030s will depend on green development. This is vital to a sustainable improvement in well-being.

The good news is that we are seeing great progress in the 11th FYP, and the 12th FYP raises our ambition in tackling these problems. But it is important to embed green development and ecological civilization as a goal into a longer time horizon, looking forward into the 2020s and 2030s.

The critical challenge for this decade is to embed institutional change to ensure that these policy objectives are delivered efficiently and we enter the next decade on a trend of accelerating environmental improvement as well as improved living standards. The key strategic transformation is to mainstream green growth into the economy, the bureaucracy at all levels, and the culture so that it becomes a natural part of growth and improved living standards.

I will focus on climate change from an Australian perspective, as an example to bring out the key themes.

If we are to stay within the 2°C temperature increase guideline, globally we need peak emissions at around the year 2020, and then a decrease at around 10% per annum, and be virtually carbon free by 2040 to 2050. This will give us a two-in-three chance of achieving the objective. At the moment we are overshooting this target.

Currently, emissions are growing at 3% per annum with China responsible for 80% of this growth. If this situation remains unchanged, the world is heading for 4°C to 6°C warming by 2100. That will be bad news for all of us.

What does that mean? It means that globally we will have to start to reduce total emissions rapidly. It means that China's emissions must peak at some stage in the decade ahead or early in the 2030s, and that by 2040 we must be on a track that is much lower.

So, the investments we make and that China makes during the 12th and 13th FYP will need to be able to operate in an environment of significant carbon constraint. This is particularly important for long-lived assets in the power, transportation, and infrastructure sectors.

If these assets are heavy greenhouse polluters they are likely to suffer early closure or severe restrictions. Institutional arrangements — planning decisions, regulatory requirements, market signals and above all a consistency and sustainability of policy direction — are essential if wasted investments are to be avoided.

And it is great to see that already China is not just thinking but acting on low emissions investments. China is already leading the world in many of the sectors of renewable energy. It is important for me, as a member of Australia's Climate Commission, to be able to tell the Australian public what China is doing, and I know this is true around the world. We need to keep up with China. China is not acting alone but it is becoming a very important power in renewable energy.

For China this makes commercial sense. The countries that act and invest now in clean energy and transport will inherit the future. But it also has a global impact — the cost of solar PV panels has fallen by 75% over the past four years in Australia, and 45% over the last two — and much of that is due to the influence of China.

China might play a similar role in wind as it builds under licence. And, providing that its rigorous safety standards are maintained, it might similarly be able to reduce the costs of nuclear power as it builds the newest and biggest fleet.

This isn't good just for China. The reduced costs of renewable energy have helped the world to meet its renewable energy and emissions targets, and action feeds back into global negotiations.

We will only build an agreement on the back of broad scale domestic action across the world. Action builds trust and the domestic confidence that goals can be achieved. Trust and confidence underpin productive negotiations. We simply cannot wait for an agreement in 2015 or 2020; we must all act now to build the base for lifting the ambition of those future agreements.

Both the China and Australia experience suggest certain measures we need to take.

We must get policy coordination right. Climate must be integrated with the other arms of the green economy — micro- and macro-economic growth, the restructuring of the economy away from export-oriented high-polluting industries toward consumption, energy policy, efficient energy supply markets with effective price signals, support for vulnerable people and regional areas, and urban planning — are all vital to reducing carbon footprint while boosting economic efficiency and social harmony.

These policies must be coordinated right across the board. Using carbon prices, trading, or taxes will only work if price changes are allowed to actually flow right through to final consumers who then change their behaviour and make choices.

We need clear agreements about responsibilities for measures and they shouldn't conflict with each other. We need the right policy instruments. We will always have a mix of regulatory requirements, government subsidies and investments, and market signals, but it is important that they do not contradict each other. They should support each other.

We have to integrate climate adaptation policies into broader policies to deal with or avoid natural disasters and to include planning, infrastructure investment, and the development of adaptive markets such as water trading and insurance so that you get the maximum amount of autonomous adjustment and adaptation to climate change.

We need program consistency over time. This has been an Australian failure. We have gone from policy A to B to C at a bewildering speed, which has made it hard for businessmen to make decisions and not get burned.

Finally, you need good scientific and administrative information, to underpin all these efforts. And you need good, honest, and capable regulatory systems to ensure that we are able to deliver what we are aiming to do with consistency and rigor.

In Australia we've learned many of these lessons the hard way by making costly mistakes, and like every other democracy we go on doing it. But if we can get this right, then this dream of an ecological civilization — which I think of as man living in harmony with man, man living in harmony with nature, and man living in a way that preserves the opportunities of successive generations — will be capable of being delivered.

Next, the forum heard from **Cheng Lifeng**, Director General of the Department of Environmental Impact Assessment, MEP. His leading speech described the role of EIA in China's environmental management:

Advancing ecological civilization and building a beautiful China is the mission of the environmental protection community. We must implement the 18th Party Congress policy, to engage in green development, a circular economy, and low-carbon development. We must protect the environment and advance economic development at the same time. We should reverse the trend of ecological degradation and speed up the transformation of the economic growth pattern.

Green transformation is a key link in our economic transformation. In particular, EIA is the core of our environmental management system. It must be taken seriously as we promote green development in China. From four perspectives, here is how EIA promotes green development

- At the national level, EIA should be a key indicator in making important regional development decisions. We have accomplished EIA for five major regions in China, and next year we will assess ten industries in Central China. We have analyzed the ecological capacity and assessed possible medium- to long-term ecological and environmental risks of key industries. We propose solutions and the results of our research have become an important reference for making major national and regional strategic decisions.
- At the regional level, EIA must be used to change our mindsets. We must integrate EIA into planning for regional development, so that there will be scientific and reasonable urban zoning and agricultural and ecological layout. EIA should be used to help promote balanced development of China's population, resources, the environment, economy, and society.
- At the industrial level, EIA must be an important factor in overall control over the location, layout, structure, and scale of development. In this way the concept of the circular economy can be promoted and we can realize the dual achievement of energy efficiency and emissions reduction. Already we have barred industries that are energy intensive and that have high emissions.
- At the institutional level, we continue to implement a policy that no new polluting projects should be approved and that existing polluting projects must be brought under control. We have addressed a number of important issues that people are concerned about. Despite its fast economic growth, China has actually made progress in environmental quality. EIA management at the source has played a big role.

Now, China has entered a critical stage for building a moderately prosperous society. In all respects we are speeding up the green transformation and building a beautiful China. We must focus on the following:

- To strengthen the role of EIA in overall decision making, we should continue to deepen the role of EIA in planning and in strategic decision making, and pay more attention to the overall impact on regional ecological systems and on people's health. We must give closer attention to the coordination of economic, social, and environmental benefits. And

we should promote the reasonable layout, location, structure, and scale of major land development projects.

- We must strengthen the role of EIA in macro-economic regulation. In light of regional development strategies and functional zoning, we must promote the role of EIA in the development of Western China and promote that region's ecological services. In Northeast China we should speed restructuring in old industrial bases and close backward facilities. We should support eastern regions in disseminating advanced techniques and skills for preventing and controlling pollution. And we must ensure that we will not exceed the cap for pollution control.
- Finally, we should promote democracy and transparency in EIA, strengthen the legal system and revise environmental laws, and toughen penalties if projects advance without EIA. We must also ensure the public interest in environmentally sensitive projects. There should be transparency in government information. The public should be allowed to take a bigger role. We should have strict control over market access. And we should coordinate regional development and environmental protection so that we can reverse the trend of ecological degradation and create pleasant living conditions for people.

The Co-Chairs presented **Ashok Khosla**, Chairman of the India-based think tank, Development Alternatives Group. He delivered a leading speech about environment and development issues that are common to India and China:

We are in the middle of massive change. During the past 50 million years things have not changed so fast as they are changing now. The loss of species today is going at a rate faster than since the dinosaurs disappeared. We are also losing energy resources, fisheries, and land to soil degradation, and we are losing fresh water resources. China and India are both under all kinds of stress, some physical, some economic. Agricultural productivity is expected to fall somewhere between 15% to 50% by 2080. And consider the vulnerability of areas to floods and landslides, issues related to labor productivity, air pollution — all these are massive problems threatening life everywhere.

Food prices were steady for many decades, but all of a sudden in recent years they have been increasing. We know this is happening because countries have been buying land abroad. Between 2001 and 2012, overseas buyers bought more land than the area of Great Britain.

Similarly, commodity prices are going up after decades of being steady. And look at all the natural disasters, the exponential rise in hurricanes and typhoons. It is no wonder that the global economy is a mess.

Interestingly enough, we talk a great deal these days about human well-being, climate, and ecosystems. But 20 years ago these issues did not exist. Perhaps in the coming decade there will be new issues that we have never thought about. This means we now have to develop systems that can deal with surprises, and not just the old issues that we inherited from our forefathers. We must be prepared and we must make our systems resilient.

China and India have some similarities. Their populations are huge. India is only one-third the land area of China, but the two countries' forest cover and deserts are similar. China has about 400 million people who earn less than \$2 a day, India 600 million. These very large numbers of people were left out of the economic progress we have seen in both China and India. One of the problems we have not dealt with during the first four phases of CCICED is this issue — that there are very large numbers who have been neglected and forgotten.

100 years ago tigers were everywhere. Today you rarely see them in the wild. Their numbers are decreasing rapidly. In India there once were about 100,000 tigers. Now there are fewer than 2000. In another five or ten years there will be none. Worldwide there are twice as many but they also will have disappeared by 2025.

So, we are basically living on a planet which is in fever. We all recognize there must be fundamental changes in lifestyles, livelihoods, consumption patterns, and production systems. We need a contraction, and also a convergence, a convergence between people who use too many resources and people who use too few.

The distribution of global income today leads us toward a number of priorities. We must maximize human well-being and minimize resource consumption. That means we need to optimize the resilience of our economic and ecological systems. The concepts we need to absorb are efficiency, productivity, conservation, and dematerialization. These ideas can lead us toward genuine, absolute decoupling of resource use from GDP.

The world is at risk from two “diseases.”

One is “influenza.” It is a terrible, terminal disease. Influenza may feel pleasant for a while, but eventually it destroys you. People at the top live well. A typical German family, for example, spends US\$ 520 for food for one week. According to the European Union, 40% of this food is wasted — and 17% is thrown away unopened in its original packaging.

But affluenza involves a lock-in, an investment that may lock us — for decades or even centuries — into unsustainable patterns: soil erosion, pesticide runoff, mining inefficiencies, production leading to huge quantities of pollution, logging and land clearing, rapid urbanization, exploding resource use.

But there is another disease, called “povertitis.” This one afflicts a large number, the 50% to 60% of people who are at the bottom end of the scale. They have their own kind of “efficiencies” — a typical family in central Africa spends US\$ 5.10 for one week’s food. The environmental result of that kind of poverty is often desertification. So, both rich and poor destroy resources in ways that are not acceptable.

We have to deal with both these diseases, and fast. But that requires planetary medicine. It requires us to look at new ways to do things. The only way out of this is to change our societies to make them more just, and more green.

We must rethink national development in order to adopt new strategies for materials use. We must invest in people, in nature, and in global security. We can work with the ideas from the Club of Rome on “factor five” reduction of materials use and through technologies that are already available.

For example, the New Delhi headquarters of my own company, Development Alternatives Group, is probably the greenest building in the world. It uses virtually no original material, and is constructed mostly of mud and industrial wastes, including fly ash from power stations. This is a very nice building, and many multinationals want to rent space in it. But it is a totally different approach to the use of materials.

In all our countries we need to re-examine what it means to industrialize. We got carried away by industrialization — but classic industrialization is no longer sustainable. We need to create products that everyone needs, and jobs and livelihoods, and we need to conserve our resources.

Instead of machines, we must use nature to do our work for us. The most important thing that nature does is teach us. The so-called “blue technologies” such as biomimicry can transform our production and consumption systems. For example, a beetle from the Namibian desert knows how to pull water out of the air — and a scientist from Oxford University has developed a fabric that just does that. Similarly, a termite hill has taught us how to keep buildings cool without having to use energy. All this is documented. The recent report to the Club of Rome, *The Blue Economy*, lists 100 technologies that are all about creating efficiency, equity, and employment.

China and India have shared thousands of years of faiths and culture —from Buddha to Lao Tse to Confucius — which have respected the unity of all life and the balance among them. You might call it ecological civilization. Now, we need to re-learn from these traditions everything that we forgot during the past couple of hundred years.

The four principles of sustainability that we must singlemindedly focus upon are: equity, environment, economy, and empowerment. As Mahatma Gandhi said: there is enough for everyone's need, but not enough for even one man's greed.

The last of the open forum's leading speeches was presented by **Lars-Erik Liljelund**, Chief Executive of Sweden's Foundation for Strategic Environmental Research (MISTRA). He spoke about Sweden's experience with eco-innovation. Here are some of the points he made:

Sweden is perhaps not well known as a place where green transformation got going, but in 1967 ours was the first country to start an agency for the environment. In Scandinavia we had a problem from neighbours, especially the United Kingdom, of cross-border sulfur and acidification. So Sweden and Norway got together to see how to handle the situation, and this was the starting point for our environmental work.

In Sweden we have intensive innovation and research activities. The system for innovation is based on the "triple helix" model — cooperation among science, industry, and government.

Eco-innovation is based on a policy mix. We use legislation, regulation, standards, fiscal policy, information, and so on. This policy mix is the point of departure for market-based mechanisms like trading schemes, price mechanisms, taxation, subsidies, and so on. We have had good experience using market-based mechanisms.

Sweden, like China, is extremely dependent on exports. In fact, exports per capita are higher in Sweden than in China. Our big industries are forestry, steel, mines, and so on. Companies such as Ericsson and others mean we depend on exports, so we try to combine this situation with the pressure for innovation regarding the ecological situation. The result: environmental regulations, requirements, and standards are all important drivers for technology development and innovation.

One example is Sweden's experience with NO_x charges. We introduced a charging system for NO_x whereby those who are affected get money back from the system, and those not affected are net payers.

Another example is the use of waste. Waste management has been driven by legislation. First we introduced a landfill tax, and then the legislation forbade putting burnable waste or organic materials in the landfill, which means that soon the landfills are not used any longer. Now we have waste combustion for energy production, combined with stringent regulations to control the emissions. Today, Stockholm, the capital of Sweden, is run only on waste.

In Sweden the new concept is “bio-based economy.” That is, our economy must be based on reusable biological resources coming from waste management. For example, you have to pay those who take care of your waste. In fact, now you can be paid to give waste to the collectors, because the value of the garbage is increasing.

What has been successful is technology procurement. It can be used as a problem-solving tool to achieve cost effectiveness and improved environmental performance, and to stimulate innovation. With technology procurement you have an innovation-oriented public sector to create demand for new solutions and to drive innovation transformation in society. And it is not restricting public procurement to existing solutions. It is very much a drive for development of new products and functionalities for the future.

Among such initiatives are examples from the foundation I work for, MISTRA. We have a research program looking for systemic change in the Swedish fashion industry, involving better uses of cotton. Another program invites the business sector to submit ideas for innovation, especially in the energy sector, after which we find the right scientists and provide financial support for the development of these ideas.

The open forum Co-Chairs next introduced speakers who delivered brief “leading comments.” The first of these was presented by **Li Xiaoxi**, Honorary President of the School of Economics and Resource Management at Beijing Normal University. He spoke about China’s green development index:

The index aims to promote green development in China, especially in the provinces and cities. We want to raise public awareness about resources and improve public participation in green development. Also the initiative responds to UN proposals on green economy, and cooperates with international platforms for green development communication. The *China Green Development Index Report* has been translated and issued by the international publishing house Springer.

The main ideas underpinning the index are these: we highlight the relationship between “green” and “development.” We emphasize that green is indispensable in the production process. We

stress the responsibility of the government in promoting green development. And we strongly value the openness and authority of data sources.

The index makes use of a large number of specific, tiered indicators. The index has ranked China's provinces and provincial-level cities, with Beijing and Shanghai leading the way in terms of green development. Among other cities, Shenzhen leads in green development.

The deepening of economic restructuring should go hand-in-hand with a green economy. This idea is based on China's well-established concept of scientific development and the new notion of a Green New Deal. From a strategic point of view this idea is very influential, as it concerns relations between man and nature. This is our priority. Green economy is important not only to China but to the world. Our future reforms will be closely associated with green transformation, and they will help address the relations between government and resources.

The next comment came from **Lim Haw-Kuang**, Executive Chairman of Shell Companies in China:

As a businessman I would like to share a story about what Shell has been trying to do to become a strategic partner of China and also help advance green development in a small way. A few years ago, I was asked a simple question: how can Shell become a strategic partner with China? So I came up with four strategic priorities, all having some link with green development:

- We work with Chinese partners to develop energy projects overseas and bring cleaner energy in the form of liquefied natural gas back to China.
- China has huge unconventional gas resources. Unconventional gas at the end of the day is a clean form of natural gas. We are applying our North American technology and know-how, and working closely with our Chinese partner and being aggressive in developing the resources here.
- To apply technology with more energy efficiency, or to conduct business operations more efficiently, we must apply research and technology. This is what we have been doing in China. We are always looking for more innovative technology, trying to find ways to develop energy in a more efficient and environmentally friendly manner.
- As an overseas Chinese, I like to work with Chinese enterprises and help bring them overseas, so we identified a number of Chinese organizations in the oil and gas service industry, and took them overseas. What has this got to do with green, clean development? When we take them overseas, we expect them to go through the green supply chain and also to enhance their safety and environmental standards. When they go outside they build a platform to provide services, and at the same time show they are better environmental citizens.

Zhang Yuzhuo, General Manager of the Shenhua Group Corporation, spoke on the topic “Clean Energy: Golden Key to Strategic Transformation and Green Development.” Here are some of his points:

The key for China’s green development of energy is clean coal. My company is the largest coal company in the world. We are also an integrated energy company, supplying 12% of China’s primary energy, and 6% of coal for utilities.

We work on clean coal conversion, to convert coal into liquid fuel. One of our refineries can produce 25,000 barrels of oil per day from coal. We produce polypropylene and polyethylene from coal. We also deal with CO₂, and we were the first to inject CO₂ deep underground.

As for the use of clean energy in China, coal will be the primary energy source — but we can use coal cleanly. We can convert the coal through gasification and liquefaction, and we can produce thermal and electric power, liquid fuel, and chemical products. During that process we can clean up the pollutants as well as CO₂.

We should take two steps for the transformation of China’s clean energy: we should use clean coal technologies, and we should promote the large-scale development of renewable energy sources.

For the next eight years we should reduce the use of coal. Today it is almost 70% of China’s energy mix. I hope we can reduce that figure to 57% by 2020. Furthermore, by 2020 energy intensity can be reduced by 44% of the 2005 level. We can further reduce CO₂, SO₂, and NO_x from current levels. By 2050 we can further bring coal down to 43% of the mix, and the intensity can be further reduced by 78% of the 2005 level.

How can we do all that? Today, new forms of energy are very expensive, but coal is cheap. We can combine the clean coal with new and renewable energies in one energy system. And, we can deal with the CO₂ and we can produce multiple products. The target of clean energy is a strong driver for strategic transformation and green development, and for the harmonious development of energy, economy, society, and environment.

John Forgách, Chairman of the Board of ForestRE Holdings, spoke about his experiences in the forest industry:

We have had many frustrations in trying to promote green enterprises over the past 20 years, whether it's in biodiversity or clean technologies or renewables. We have tried all those things. We are deluding ourselves if we believe we are going to change the world and create an ecological civilization unless we address the issue of human resources.

If you want to create a green company, the most difficult thing is to find qualified executives to run the company. The business schools are not producing the right graduates. They are producing graduates who want to create the next hedge fund disaster. And the environmental schools are producing romantic biologists and zoologists and forestry engineers who are unable to do a discounted task flow, so they are useless in business.

As China moves toward its green and ecological civilization, and talks about “people first,” there are two dimensions China must consider: a) preparing the right human resources for success in this enterprise, and b) the search for an alignment of interests between the bottom-up and the top-down initiatives.

Business schools in China have to help prepare executives for this activity, whatever you may call it — going west, going green, creating an ecological civilization. These schools should address two issues that are currently lacking.

First, we need business cases. Business schools should start immediately finding ecological initiatives in order to create business cases that can be traced through their lifespan, through their implementation, so these cases can be corrected, altered, or compared. Currently there seem to be no green business cases in China. This means we have no parameters, no basis to measure performance. Whether it is in dairy products with Nestlé, or in green retailing with Walmart, or in renewable energy with the power companies, business schools must start working with companies so we know where we are and what we are doing.

Second, business schools should seek to create joint programs with environment departments. In other words, business schools should train business executives who have a heart, and environmental executives who have a head.

The other issue is the question of the alignment of interests. When an investor comes into a new country, it is not enough to have brilliant top-down ideas, policies, and suggestions. You need to seek alignments with the people who will be affected by your enterprise — the people at the bottom. It can be very difficult to find an alignment of interest with the people in the jungles of the Amazon or Papua New Guinea. Typically, no one asks their opinion about how to run the business. In my own business, I have learned that if I do not find an alignment of interest with

the people who will be around my timber investments — 2000 kilometers distant from my headquarters — they may decide to cause harm to my company's assets.

The important factor in protecting these assets is gender. Gender balance in investment, in the management of green business is vital. It is gender balance that keeps the equilibrium out in the field. If we educate and empower the women who live near our timber investments, they will form a family and create 15-year investment horizons which require schools, safety, and security — and that will help protect our assets.

The final speaker was **Trutnev Yury**, aide to the President of the Russian Federation and former Minister of Natural Resources, Russian Federation:

In the course of its rapid development Russia has fulfilled its targets under the Kyoto treaty. At the global level, however, it is not clear that everybody knows what we should do in the future.

China's development has aroused much interest in Russia. We have noted the great improvements, and in particular that environmental policy in China has progressed rapidly in recent years. One example is cross-boundary rivers between China and Russia. Our countries have put in place a mechanism for information exchange about cross-boundary rivers. This cooperation has been quite productive, for example, fish have come back to some rivers and the rivers now meet ecological standards. I extend appreciation to our Chinese friends.

I believe we should press ahead with such cooperation. Just now we heard about the situation of tigers in India. In Russia, tiger numbers in the wild have stabilized at 500 to 600. Russia has a natural reserve set aside for leopards and tigers, but I think this work should be shared. We should cooperate in protecting these animals. We hope that we can work with China to establish an ecological corridor through which we can exchange monitoring data. I hope that on this basis we can increase the population of Siberian leopards and tigers. Although these two animals perhaps are only a small part in the entire ecological system, but their plight is meaningful for the future of humanity.

General debate and comments

In introducing the general discussion, the Co-Chairs made the following remarks:

Where it still feels like squaring the circle is in energy, in the sense that without access to electricity, there will be no development — but then, electricity at any cost will hamper development.

In Germany, on a sunny day, 40% of electricity comes from solar. In Denmark 35% comes from wind. These are advanced, competitive economies, so it shows that a country can be competitive and at the same time to be willing to pay somewhat for a more sustainable economy.

During our discussion I would like us to touch on the question of how do we see the energy development in China in coming decades? Is it possible to move from coal-fired plants being the main source of electricity to cleaner technologies, and then find a bridge between this and a more renewable energy society? Can we square the circle? Are there business models that could work?

The Co-Chairs opened the discussion, and Council members made the following points:

Is progress enough? The answer is no. It is not enough for China or for the world simply to do better than we are doing now. We have to actually find a way to get in balance within the limits of the earth's resources. It is not enough to be lower carbon or to be more efficient, or to have cleaner fuels. We know the science and the arithmetic. There is only so much carbon we can put into the atmosphere between now and 2050 if we are going to keep the temperature from rising more than 2°C. These are absolute numbers. Somehow we have to confront that reality and not just talk about how we can improve. As we look at carbon capture and storage, or the role of gas, or renewables, it has to be with an eye toward what the numbers tell us, and not just toward making marginal improvements.

In China and in the wider world, we must confront the challenge of the assets that will have to be stranded, the tens of trillions of dollars worth of known reserves in coal and oil and gas that we simply cannot afford to burn if the climate is to stay within 2°C. How do we confront that question, which is of national significance for many countries and hugely significant for many companies?

An environmentalist once proposed advising China “not to use coal, period.” This is an environmentalist without a head, because China needs security of energy supply. Coal consumes about 70% of China's primary energy needs. The 12th FYP and 13th FYP indicate that China has a clear roadmap toward cleaner energy with a lower-carbon economy, reducing the coal footprint and increasing cleaner energy in a meaningful, sustainable manner. It aims to do this while ensuring energy security, economic growth, political stability, and social harmony all at the same time. So let's not talk about one aspect and forget about all the other competing parameters, the harsh realities that all need to be managed at the same time.

Where is China heading in terms of “unconventional fuels”? In order to achieve energy security, you need diversification. You can't bet on one option. So, over time, cleaner energy in the form of

renewables and cleaner natural gas will continue to gain prominence. China has huge unconventional gas resources, probably as much as the United States and Canada do combined. By unconventional we refer to tight gas, coal bed methane, and shale gas.

If you look at shale gas, China is still at an exploratory stage in terms of understanding the subsurface and applying advanced technologies. Also, China needs new policies and regulations to govern the development of unconventional sources, which are a completely different challenge operationally and environmentally. When you develop shale gas in China, there is a learning phase. Let us not rush into thinking this will be like the United States in five years' time. Much can be learned from the United States and Canada, including how to operate in an environmentally and socially acceptable manner. China's large population makes shale gas development difficult. So let us not have a romantic hope. But, would shale provide large amounts of cleaner energy to help meet China's requirement, and also help reduce the carbon footprint? The answer is yes, and so let us work harder to make it happen.

If climate change is 4°C it will be a complete catastrophe, not just for the world but for China. It is not just an environmental issue; it is also a development issue. It will not be enough simply to be cleaner. The question is the total amount of carbon you put into the atmosphere. If we just fall into the trap of saying: ok, let us do as much as we can, then we will come up against limits that we have to take very seriously.

If we want to succeed in controlling climate change, we need to come up with a plan that is realistic, achievable, and believable, so that people will buy your story and implement it. We are talking about practical implementation, about compliance. But if on the other hand you try to impose something that people can not do, or will not do, then we will fail.

Yes, we are talking here about "silver buckshot," not a silver bullet. But businessmen with a head will understand the arithmetic and the science. They will understand that we will not be able to exploit every fossil fuel opportunity. Indeed if we develop every fuel resource currently on the books we would blow the 2°C limit in a big way. We need business people not to make big bets and plays that they will regret. For example, if we crack the carbon capture and storage with coal, it would be better to turn it into electricity and use that for transport purposes rather than as fuel to be readmitted into the atmosphere.

In developing alternative energies, China faces more difficulties than do developed countries. In those countries the energy requirements are pretty stable, which is why alternative energies can replace traditional ones. Their energy portfolio can change quickly. But China is at a lower level of industrialization and its economy is growing fast, so the consumption of energy is increasing. In China alternative energy at this point is low, even though China every year increases its

alternative energies by 10%. Still, because of China's size, every year both the investment and the growth in alternatives in China are the largest in the world.

Under these circumstances the need for coal continues to grow. The rate of growth will slow but the total will increase. This growth probably will extend beyond 2020, so China has to improve the efficiency and cleanliness of the coal it uses. It also must extend the capture and storage of carbon.

China needs an integrated, comprehensive set of policies and mechanisms: energy conservation, energy efficiency, and a lower rate of carbon emission. It must improve its energy structure, which will include nuclear energy. Many countries are turning their back on nuclear, but this will be an important part of China's energy structure. China is developing its third-generation nuclear stations based on the latest safety criteria. Nuclear energy will gradually replace coal and thus will help us achieve a low-carbon economy.

The problem with coal is the GHG. Sometimes governments go into too much detail in regulating technology. Governments should be technologically neutral. It should be left to the business sector to find and develop the right technologies. That is, we should be able to use coal, but without the GHG. In most countries, the use of the resource is difficult to regulate, but you can always regulate the impact of its use.

China, because of its size, needs a more integrated, systematic approach in the development of its energy sector. It needs a more holistic approach, with more upstream-downstream thinking. The shift to renewables also can create a disaster depending on what type of energy you are using. For example, using biomass can create big problems. It is important to have a business model so that governments are clearer about the playing field.

Earlier we heard comments comparing people from business schools with environmental graduates. Note that many global business sectors, such as forestry and marine resources, have been trying to institutionalize their environmental consciousness by way of certification systems, stewardships, and so on. The only sector lacking this way of thinking is the financial sector. Seldom do you hear discussions about how the financial industry contributes to sustainability.

In fact, China is relatively advanced in terms of its green policies in the banking sector. This year the banking regulatory authority launched an aggressive green investing governance system. The problem is, once again, that we may have great policies and regulations, but in China none of the executives know how to implement them.

Item 8. Open Forum Briefings and Adoption of Recommendations

Briefings on the open forum discussions

CCICED Secretary General **Li Ganjie** introduced CCICED Vice Chairperson **Achim Steiner**, who briefed the conference on the discussion in Open Forum 1: Regional Coordination and Green Development. In addition to summarizing the exchanges that took place during the forum, he made these observations and raised these additional questions:

What is clear is that the challenges of achieving equity and sustainability have created an imperative that demands of leaders and practitioners in China not just an incremental approach, but a transformative approach. Transformation was a term frequently used during the forum.

Our Chinese colleagues who presented yesterday reminded us that this discussion is not beginning from point zero. China has already put into place a number of instruments and planning frameworks and implementation processes, among them the strategy for protection of the regional environment, the national environmental functional zoning plan, and the urban environmental master plan.

On the need to address the green economy, green development, green cities, green growth, green infrastructure, and so on — where precisely is the delineation of this green concept? What is its focus in terms of people? How does it differentiate between the poor and those better off? We must remember that the success of green development is to be measured not only in terms of its ecological dimension but must also be rooted firmly in appreciation of its social dimension, particularly focusing on the poor.

The notion of integration is critical. In order to achieve transformation you cannot look only to individual sectors, individual enterprises, or individual development initiatives as being sufficient. The answer is to link these different areas of action.

Cities and urban areas are key points of integration, where the kind of transformation that the green development concept envisages is easier to realize. Speakers highlighted the capacity of citizens at the local level to be architects of specific solutions for their area.

How, in practical terms —tomorrow — do you begin to work on this? How do you set priorities on the basis of the aspirational and the visionary? The task every day of officials and citizens at local levels is to translate these visions into practical action.

Li Ganjie then introduced CCICED Deputy Secretary General **Xu Qinghua**, who briefed the conference on the discussion that took place during Open Forum 2: Strategic Transformation and Green Development. Aside from summarizing the discussion, he made these points:

The 12th FYP is a key period and the next 20 to 30 years will determine whether China will move from being a large economy to being a strong economy. The deepest structural problems have now come to the fore even more clearly. The development of the economy, poverty elimination, and guaranteeing people's livelihoods are becoming even more onerous tasks. China's development is still uneven. 128 million people are still very poor.

The whole world is trying to regain its balance after the economic crisis, and so is China. The forum believed that green development is the necessary choice to build an ecological civilization and a beautiful China. Green development provides a new engine both for economic growth and for industrial competitiveness.

Extensive growth must ease into intensive growth — from blind pursuit of economic growth toward equality and efficiency, from a copycat high-carbon path toward indigenous innovation and a low-carbon path.

Recommendations for submission to the State Council

With **Li Ganjie** presiding, Chief Advisors **Shen Guofang** and **Arthur Hanson**, and **Ren Yong**, Coordinator of the Chief Advisors' Support Team, briefed Council members on the revised 2012 CCICED recommendations. They emphasized the following points:

Our revisions to the draft recommendations have been made on the basis of the speeches by Vice Premier Li Keqiang and by Ministers Zhou and Kent, the remarks delivered by the CCICED Vice Chairpersons, and the comments and suggestions from CCICED members. The revisions have been carried out on the basis of this year's theme, Regionally Balanced and Green Development. We have aimed for a macro- and mid-level orientation toward the State Council level. We will prepare a concise ten-page version for the State Council but a more detailed version for relevant ministries.

In the document's introductory paragraphs we have added this sentence — "Effective coordination and cooperation mechanisms for integrated ecological system management, air and watershed pollution control are missing among regions, provinces and cities." — as well as some content related to poverty and ecological deterioration.

In line with the speech by Vice Premier Li Keqiang, we propose the following revisions to Recommendation 1, Item 2:

- At the central level we should launch a Commission for Ecological Civilization, to ensure that ecological civilization is fully integrated into China's political, economic, cultural, and social development.
- Environmental protection agencies should play the role of leader, driver, and practitioner in the development of ecological civilization. Furthermore, there should be a new integrated ministry with a large portfolio in charge of ecological management.
- The relations between central and local governments should be well coordinated in terms of the development of ecological civilization. Their respective roles, responsibilities, and authorities — especially in financial terms — should be clearly delineated.

We propose adding under Recommendation 1 a new Item 4, to create an indicator system to help engage the public. We should develop objectives and targets and methods that take account of the differences among the regions, as well as evaluation measures for decision-makers at different levels and in different regions. The roles and responsibilities of government, business, and the public should be clearly defined.

Under Recommendation 3, Item 1, regarding mobile pollution sources and vehicle pollution prevention and control we have added quite a bit of content. In the meantime we also included an additional item about enhancing efforts in multi-pollutant control.

Regarding Recommendation 5 — which concerns the task force on the 12th FYP — some Council members pointed out that the recommendations in this section are not the same as what you find in the task force report itself. We checked and found that the English and Chinese versions of the task force report have different structures, but the content and conclusions are the same. We suggest that these recommendations should respect the task force reports. Therefore, for the Chinese version of the recommendations we adopt the suggestions in the Chinese version of the task force report, and for the English version we use the English version of the report. This will not have an impact on the substance of the conclusion or on the use of this information by decision-makers. In fact the task force made an interim report to the AGM last year, so some of their suggestions were already adopted in last year's policy recommendations.

We should flag one issue for general discussion, specifically the detail under Recommendation 1 about reform and establishing new government institutions — namely an environment commission and a “super ministry” — capable of creating and supporting an ecological civilization. The idea of a commission is very much in line with the Chinese way of bringing together high-level people, crossing boundaries, and so on. But does CCICED feel comfortable about offering specific recommendations about the structure of the Chinese government?

Comments and discussion on the revised recommendations

The way the proposal about the “super ministry” is expressed does not cause concern. It would have been worrying, however, if it proposed picking up responsibilities for agriculture, energy, forestry, and so on, because you would have run the risk of losing the purpose of ecological civilization. The fact that it is a consolidation of environmental issues and responsibilities is an important defining purpose. Perhaps it would help to add one sentence: “This super ministry should support and not detract from the other ministries’ responsibilities for ecological civilization in all their work.” So it is not setting up a competitive enterprise. It is setting up a coordinating, facilitating, and supporting exercise, and it doesn’t exempt anyone else from their responsibilities.

Also the “ecological civilization commission” is not clearly explained. This commission is similar to the body we have now, the Central Guidance Commission for Building Spiritual Civilization of the Communist Party of China, which is an organization where we have discussions on important issues. Its job is to coordinate different ministries in order to facilitate work in this area. It doesn’t mean that MEP will be expanded or replaced.

Each year for the past five years we have included this kind of suggestion in our policy recommendations. The thinking behind it is that the environment is a system that needs to be looked at in an integrated and holistic way. If we divide up that system administratively, it will be difficult to manage the whole thing. An obvious example is water systems, and last year at our AGM we proposed setting up an organization that would deal with water from its source to the ocean. In China’s current institutional setup, much of the organization and distribution of tasks is not totally rational, and we need some kind of institutional innovation and reorganization.

A commission for ecological civilization is a good idea. The concept of a “whole of government” focus on achieving ecological civilization and ecological progress should be supported, since every ministry has the responsibility to work in a coordinated fashion to achieve that end. But the wording of the recommendation is somewhat too firm. We should be hesitant to encroach on a sovereign government’s structure of government responsibility. The wording could be changed from “a super ministry should be established” to perhaps “a super ministry may be established” or “the government of China may wish to consider the creation of a super ministry to achieve these very valuable and worthy ends.”

Obviously a body like CCICED can propose areas for substantive improvement, but the actual “wiring” of institutions is something governments must do themselves according to their particular circumstances. But there does need to be, at the highest level, the capacity to assemble

representatives from various ministries to ensure that they are all interpreting a concept like ecological civilization in the same way. The concept needs to be shared and integrated. A commission is an excellent way of pulling together and assembling the key agents to ensure that they are treating the concept consistently.

The idea for a “super ministry” is surprising to see. Perhaps what is being called for is actually to boost the capacity of MEP to provide the coordinating capacity that is required. Every ministry coordinates with others. For example, finance ministries have the capacity to coordinate financial and fiscal matters across all of government. The environment ministry has to have this same capacity. But that doesn’t make it a “super ministry.” The real point is that everyone is working toward the same concept and understanding it in the same way.

In many respects these recommendations raise more questions than provide answers. We should look back at the work of the environmental governance task force from some years ago, because this topic was addressed in that context. It recognized the importance of having a high-level advisory body directly connected to, and reporting to, the premier. The question was: was that sufficiently robust and did it have sufficient power and remit to provide this capacity. The task force looked at different examples of environmental governance work: the Council on Environmental Quality in the United States, for example, and Germany has a high-level commission that advises the government directly. Some countries use a nominated individual who ensures that ecological issues get addressed. So there are a number of different strategies.

In Recommendation 1, Item 2, the very important words “coordination mechanism” are absolutely essential. This is the key, because these functions will flow throughout various ministries.

Regarding the “super ministry,” how is it to be established? By transferring functions and individuals from existing agencies? Or through a consolidation which might be challenging just on a personnel basis, since people will bring differing philosophies, mandates, working styles? The devil is in the details.

We have been talking about coordination mostly at the national level, but the relationship between the central government and local governments is crucial when we think about implementation. We know there is a great degree of flexibility and independence in terms of implementation at provincial and local levels. So, finding a way to establish a more direct line of responsibility and accountability beyond what has been done in relation to individual employee’s performance evaluations is needed.

In the Chinese version of the recommendations, where it speaks about air quality and public health, three different terms have been used: to *guarantee* public health, to *ensure* public health, and to *protect* public health. We need to think about consolidating and using the same terms so that this relationship between the environment and public health can be properly defined.

A commission is necessary given the newness of the concept of ecological civilization: how to think about it, operationalize it, interpret it? But it will take time to do that. Is it necessary at this point to think about the operationalization of these ideas, in terms of the mechanism? Could we not just have the commission set up, look at how it would function, what are some of the elements of ecological civilization, then look at what are the options. In the Canadian government we effectively use cabinet committees at the political level, but at the same time in the bureaucracy, at the public service level, we have many committee structures created just for the purpose of coordination. So there are different ways of coordinating operations. Perhaps we should park that decision for the future until we get a handle on how the commission can operate.

The phrase about the “the east leads but the west is the focus” may sound elegant, but when we consider green development, Eastern China may not necessarily be the model for how you want to think about the rest of the country. Perhaps this language should be modified.

The new ideas about environmental protection that have been proposed by the 18th Party Congress should be more entrenched by being elevated to the level of a law that would have to be approved by the National People’s Congress.

Regarding Recommendation 5, we should strongly support the addition of human health protection. Officials our task force has met with at both national and regional government levels in the environment area all spoke of difficulty in getting timely indicators from the environmental and ecological sphere in order to obtain an indication of risk. Health indicators should be given high prominence, because international experience suggests that they often provide a timely if not real-time indicator to guide risk assessment and the need for action on a national or regional basis.

Council members adopted the recommendations by acclamation.

Item 9. Closing Session

Secretary General’s report and 2013 work plan

CCICED Vice Chairperson **Achim Steiner** introduced Secretary General **Li Ganjie** who presented to Council his report and CCICED's 2013 work plan. Secretary General Li underlined the following issues during his speech:

I would like to briefly review what we accomplished during 2012, the first year of Phase V.

First, we successfully ran a side event at the United Nations Conference on Sustainable Development, Rio+20. Premier Wen attended, and he had warm and frank dialogues with the participants of the meeting on the topic of sustainable development. This fully demonstrated the importance that the Chinese government and the premier himself attach to CCICED and is an example of the support he has delivered to this organization. It also highlighted the importance of the Council as a high-level platform for dialogue and exchange. The premier commended efforts by CCICED, and said that the Council is vibrant because it has an "eternal theme" which is sustainable development. The Council's importance as a platform is reflected particularly in the cooperation between China and other countries, and in its influence on global environmental work. So we will continue to run CCICED and it will become better and better.

Second, we achieved the transition from Phase IV to Phase V. We completed the nomination of new members and the revision of the charter and supplementary provisions. We identified the key areas of research. We received a lot of support from funding partners. The Chinese government doubled its funding support to CCICED on the basis of Phase IV. All the main donors increased their support. So far we have secured about US\$ 24 million, an increase of one-third compared with Phase IV. This has provided a lot of assurance for the operation of the new phase.

Third, we have achieved the expected results in policy research. On the topic of regionally balanced and green development, Chinese and international experts did great research work, laying the foundation for this successful AGM. We also held a strategic salon where we invited experts from economic, social, and environmental backgrounds to have open discussions. This has injected new vitality into the Council's research.

Fourth, the policy recommendations have been given a lot of attention by the senior leadership and by ministries. Some of these recommendations are already reflected in the policies being implemented. For example, in 2011 in our recommendations we proposed that a pro-green transformation evaluation system should be developed for decision-makers. In Aug 2012, the State Council issued the 12th FYP for energy conservation and emissions reduction. It provides that the State Council will evaluate the performance of provincial governments on their emissions reduction and energy conservation targets. The result of this evaluation will be

incorporated into the overall review of these leaders, and a performance-based accountability system will be instituted.

Another example is that in 2011 the Council proposed a low-carbon industrialization development plan including carbon intensity reduction targets for heavy industry and the chemical industry. In August 2012 the State Council issued the 12th FYP for energy conservation and emissions reduction that set targets for energy conservation for industries. We also proposed to develop China's green supply chain system, leveraging green consumption and the green market to improve the green transformation production system. We also proposed to enhance emissions reduction in mercury-related industries. In the 12th FYP for strategic and emerging industries and in the 12th FYP for the nonferrous metal industries, all this has been reflected.

The Chief Advisors and their support team have written a report on the major policy progress in environment and development in China and the impact of CCICED policy recommendations. This report has been made available to you.

Fifth, the Chinese government has further enhanced its leadership and support to CCICED. The capacity of the Secretariat has improved and its operation has become more efficient and effective. The Secretariat and SISO as well as the Chief Advisors and their expert support team work together to ensure the proper operation of all activities. I am grateful to all Council members and experts for their contributions during the past year, and I particularly thank donors and partners for their assistance to CCICED.

Now, here is the report on the CCICED work plan for 2013:

First, policy research. This has been the core task of CCICED, in order to lay a solid foundation for the policy recommendations. During this new phase we will base ourselves on the 12th FYP period and look ahead to the 13th FYP. We will align with the vision of China being a moderately prosperous society by 2020, and also with the new vision of building an ecological civilization and a beautiful China.

In 2013 we will conduct research on environmental protection and social development so as to integrate the development of ecological civilization into all aspects of social development. We will continue and finish the task forces that were launched in 2011, one on environmental protection and social development, and the other on sustainable consumption and sustainable development. Meanwhile we will have three special policy study projects, promoting green development and public participation in public policy-making, corporate social responsibility in green development, and promoting urban green commuting. We will also establish pilots in Tianjin and Shanghai on the subject of green supply chain. These pilots will help make the

recommendations of the Council more practical and executable. In total there will be six projects and all these will make presentations to CCICED in 2013.

We will also launch policy research projects which will be completed and presented to the AGM in 2014. For 2014 the research focus is management and institutional innovation of green development. One task force has already been decided, the evaluation prospects of green transformation. We will also look at the mechanism of institutions of sustainable development and at the effect of China's overseas activities on global sustainability. In our research we will also consider the 18th Party Congress and the first session of the 12th National People's Congress which will be held early in 2013. We will consider the key research areas identified by these two major events.

Second, we will run the 2013 roundtable. We will invite officials from the central and local governments and experts from home and abroad. At this event we will share recommendations made by CCICED in 2012 with the participants so as to expand the scope of influence of the Council. In addition we will have discussions on the environment, society, and green development in relation to the theme of the AGM 2013, and so help lay the foundation for that AGM.

Third, we will organize and run that AGM. It will be held 13-15 November in Beijing. The theme is Environment and Society for Green Development.

Fourth, we want to cement partnerships and expand the scope of cooperation. We want to increase publicity about what we do and expand our influence. We also want to increase exchanges and interactions between CCICED and its members, donors, and partners. We will also carry out capacity building to improve the Council's level of operations and management. We will also explore creating mechanisms for the long-term management and stable development of CCICED.

2013 will be a new starting point for China, a new era, a new time — and we are given new tasks. There will also be new challenges. We are convinced that with the concerted efforts of the members during the new phase, and with the support and assistance from donors and partners, CCICED will continue to play its important role in the sustainability cause in China and the world. We will live up to the expectations of Premier Wen. We will be here for a long time, and we will be better and better.

Comments and discussion on the work plan

Over the past 20 years CCICED has made a huge contribution to the theory and practice of development, but the time has come to recognize that generally accepted models of development have not always worked and are no longer considered viable. Now in the new phase the Council needs to spend more time and effort on “green and inclusive” development. Regional, rural-urban, and rich-poor divides need to be addressed in an aggressive way. People aren’t going to accept any longer being excluded. Large numbers reject the notion they are second-class citizens. They may even take to the streets and do violent things. It is important that the Council address not just big issues, big industries, big sectoral growth, but also the necessity of bringing everyone onto the process in a clear and well-defined way.

Engaging with China’s activities overseas is a new frontier for CCICED. There is huge potential for the Council to make important contributions to looking at how the idea of ecological civilization comes to life in China’s involvement in other countries. The task force or study that is planned should tackle China’s official cooperation with other countries, that is, development assistance and bilateral investment. It should also look at the role of the finance sector. The guidelines issued by China’s banking regulatory commission last February are an impressive start in bringing sustainability into lending practices, and it will be important for CCICED to examine how those guidelines can be brought to life in the context of investment in Africa, Asia, and Latin America. And it can also look at how Chinese companies are operating overseas, and how global norms can apply to those activities both in terms of compliance with local laws but also in stepping up to meet a higher standard of sustainability, for example, for timber or mining operations.

At the same time, the China Council should make it a priority in coming years to look into establishing new kinds of working partnerships, whether with governments, companies, or perhaps with regional institutions such as the Asian Development Bank.

In the wake of the financial crisis, this is difficult period for the planet. The eyes of the world are on China. China has taken an extraordinary position in the global economy. Its appetite for commodities and its capacity to invest abroad mean that it is projected constantly in the minds of everybody outside of China. China needs to maintain a common standard as it develops its ecological civilization, domestically as it moves westward, and to do the same for its offshore operations. If China does not apply the exact same standard of development abroad as it does at home, it will lose credibility, it will lose its license to operate, and it will aggravate its very delicate image today in the world. So the Council has an important role here, which is to study how China can adopt exactly the same standards of sustainable development offshore as it does at home.

We also need to discuss how to manage and organize the institutional structures that will implement these big concepts and long-term visionary agendas. A European study asked: if we wish to achieve transformative change focusing on sustainable development, are our research structure and capacity sufficient to achieve this goal? In Germany and in Europe more broadly, the conclusion was no. The study found that the investment in research is still dependent on the past: we don't invest in the issues that are important now. Interdisciplinarity among natural scientists, social scientists, and engineers is weak, as is communication of the results of science and research to the wider society and to political leaders. The translation of scientific results into educational programs is not well in place. So in CCICED we should focus on these mechanisms during the next few years.

We do need to talk about inclusive green development, in line with the outcome of Rio+20. As we move toward this inclusive low-carbon economy, at the same time we can make poverty history, in China and in the rest of the world — if we take a scientific approach. The contribution of China to world development and moving the whole planet toward a new sustainable future, including defining sustainable development goals, could be a great contribution in which we in CCICED would like to play a role.

A great deal of China's economy is based on its coastal environment and offshore activities. But these ecosystems are in a bad state in some parts of China. We are land animals and we tend to forget what is going on under the surface of the sea, but we have indications that the status of some of China's coastal seas is in fact worse than anywhere else in the world. We have to approach these problems and deal with them. Why not set the goal of restoration of the Bohai Sea? Make a blueprint or plan for restoration of this area. It is possible. It has been done. The countries around the Baltic Sea 30 years ago agreed to clean up that body of water. The situation in the Bohai is worse than it was in the Baltic, but the Bohai Sea is more open to the ocean, so it should be possible to restore this area in a shorter time.

For the Council's new task force on sustainable consumption, the challenges are evident. China will have the world's largest consumer class. This has an impact domestically, of course, but also internationally because China's consumption patterns will influence the whole planet. We see large corporations already putting their designs in place to serve the Chinese market, and this is also affecting the global market. We are challenged now to build an infrastructure which will influence lifestyles and consumption patterns for some time. We look forward in the task force to discussing a road map to the year 2050 to bring in social innovation and civil society action that will foster a more sustainable consumption pattern. No country on earth has yet done this.

Closing remarks

CCICED Vice Chairperson **Achim Steiner** offered a general summary which included these comments:

Many people appreciate the work of CCICED because its value as a forum and its relevance extend well beyond China. Often in the past the Council maintained a strict focus on China's development choices and path. Its value in generating new ideas in development, in transitioning toward green development, a green economy, green growth, and so on, mean that this forum has relevance well beyond China. This is a tremendous tribute to those who matured and shaped the China Council over the years.

This year at the Rio+20 meeting we were fortunate to have the presence of Minister Zhou and Premier Wen. The first-ever CCICED side event held during the summit was a tremendous success. It indicated that the value of the Council's work deserves to be heard, understood, and appreciated well beyond the traditional forums in which we have operated.

The emergence of a discourse about the future of China's development — particularly the concept of ecological civilization — echoes how the wider world now is discussing development. The sustainable development goals issuing from the Rio+20 summit and the framework to articulate these goals will both be of relevance to the discussion within China. But perhaps also the thinking and practice within China that emerged out of the 18th Party Congress could feed into the global sustainable development goals. We are a community of seven billion people who have to live on the planet together. The frameworks that will shape the evolution of our economies will increasingly reflect the discussion that China has already launched. At the end of the day ecological civilization cannot be achieved only by environmental protection, but the notion must transcend into every area of the institutional, political, and economic landscape.

Achim Steiner then invited CCICED International Executive Vice Chairperson **Peter Kent** to make closing remarks. Following are the highlights:

We have reached the conclusion of a successful and important AGM. I would like to thank Minister Zhou for his assistance and cooperation in this meeting, and for his many years of support for CCICED. Also I recognize the central role that Secretary General Li plays in Council work, and we are grateful for the contribution of the Secretariat and the Chief Advisors. Their commitment and dedication and the high quality of their work are evident not only in the arrangements for and substantive contributions to this year's meeting, but also in the support they bring to the Council's activities throughout the year, every year.

That CCICED has been able to keep pace with rapid change within China and globally in ever more challenging areas of policy relating to the sustainable environment is testimony to the quality of the partnership that the Council truly embodies. Inevitably there is debate, among and within our various countries, on how best to balance economic growth, environmental protection, and social development.

But whatever course we take, we are probably agreed on two points: 1) how China's environment is managed and how the environment interacts with development matters not only to China but to all of us; 2) in working together in support of China's continuing and impressive efforts to address issues related to environment and development, we learn lessons that can be applied in our home countries and abroad.

Thus, international cooperation is of mutual benefit. It serves all of us and it serves the international community. International cooperation is based on trust, respect, and partnership — all of which of course are the foundation of CCICED. The many governments and organizations that provide support for the Council — support that I salute — the hundreds of Chinese or international experts who have served on the Council or engaged in policy research over the years, all are evidence of the strength and durability of this partnership.

The reports we heard yesterday and the recommendations we discussed this morning underline our common interest. The recommendations are substantive and are of a very high quality. We hope that the final version will be helpful to the State Council.

I was struck these past few days not only by the concept of ecological civilization, or ecological progress, but also by the very rich exchange of different views related to its meaning and how it may be effectively implemented. I heard that ecological civilization is key to ensuring a sustainable future for our planet. I heard that China's commitment to this concept demonstrates the desire for creating a nation that cares not only for the improved well-being of its own citizens but also that of all humanity. I heard that this goes beyond being simply a question of economic and environmental indicators — it is about a way of life. I also heard that with China's increasingly important role in the world, and as it moves along this path, joint international learning must take place. What these different views have in common is the importance of making harmony between nature and society a reality. The words of Vice Premier Li also made a profound impression on me. He talked about the fact that we have created wealth out of industrialization, but we have also created environmental costs. We have only one planet, and growth cannot be unlimited or unrestricted.

And for China it is a major challenge, because there is no precedent for a country of 1.3 billion to modernize. And as the Vice Premier also reminded us, we cannot leave our environmental problems for future generations.

Our work ahead in 2013 as we focus on the relationship between environment and social development, and during the balance of Phase V as we seek to help make green development and ecological progress a reality. It will indeed be challenging, but we agree it is a task we accept with enthusiasm, in the knowledge that the challenges – while they will be many – are to make progress on issues of fundamental global importance. I am honoured to be part of this common effort.

Achim Steiner invited CCICED Executive Vice Chairperson **Zhou Shengxian** to make closing remarks:

In Phase IV we did a lot of work. Those were an extremely constructive and fruitful five years. I'm sure that the next five years will be full of hope. I have three observations:

- 1) Each time we meet, I learn a great deal and I am also very stimulated and inspired. Our Executive Vice Chairmen, our Council members, the experts, and the staff have worked very hard and are extremely committed to our cause, and this has impressed me greatly.
- 2) Each time we meet, it is a huge driving force that gives a great boost to the protection of the environment in China. As the Minister of Environmental Protection, my greatest challenge and test is how to use and make the most of all the ideas and proposals that are given at this council. These results are almost like wonderful weapons, or tools, that we have in our hands. The question is how are we going to use these, how are we going to put them into practice, not only at the national level but at the level of our ministry.
- 3) Each time we meet, we make proposals to the Chinese government, and I can tell you that the Premier always comments on these recommendations and delegates them to various ministries for serious consideration. There is always high-level follow-up and steps taken. For example, when MEP changed from a council to a ministry, and when China began using market forces to promote pollution mitigation, these changes were promoted and driven by the results of CCICED research.

We have also arrived at a number of common understandings. General Secretary Xi Jinping said in one of his statements, which impressed me greatly: "China needs to learn about the world, and the world needs to learn about China." The 18th Party Congress drew up a number of important

decisions for China's future. The proposal for building an ecological civilization has been very much accepted and supported by Council members. I am happy to see the many positive reactions and suggestions that have been proposed. I believe we have a consensus on four points:

- 1) Our work in the future will revolve around how to modernize and set up an ecological civilization. We will plan and put this into practice. This will be our main direction.
- 2) This concept of an ecological civilization proposed by China is an important contribution to global development and environmental work. But the concept is not just an isolated idea. It is rooted in the ideas that came out of the global conferences on environment and development, starting with 1972 in Stockholm and running up to Rio+20 in 2012. The concept comes from the wider world, from everything that has been done up to now.

Although the 1972 Stockholm Declaration was inspired in part by a quotation from Chairman Mao Zedong, in China at the time the prevalence of leftist thinking meant that a lot of these measures were not put into practice. By 1992, and 2002, and 2012 of course the situation in China was very different. Each of these conferences has given a boost to the protection of the environment in China. We are very grateful for the world's past experience for helping us in this regard.

The green economy concept was first proposed by Achim Steiner, and he has encouraged us greatly. Today the concept of green development has been accepted worldwide thanks to the contributions of United Nations Environment Program. This green trend is totally unblockable, so whoever has a faster and earlier understanding of it will be able to progress faster and take an active role. Whoever is late will be much more passive and will find themselves lagging.

- 3) We need stricter environmental admittance standards to promote coordinated regional green development. What do I mean by this? We need to raise the threshold of environmental admittance criteria so that we can push this green transformation. This will be difficult in certain respects. You can say it's like a revolution — it is not going to be clean sailing. There will be all kinds of resistance. When we are promoting green development, every day we have to be prepared to overcome all kinds of dissonance and interference and uncoordinated actions. So the task will be very hard.

- 4) China is at a preliminary stage in its socialist growth and it is the largest developing country. At this point it is important to sustain the concept of "developing and protecting at the same time, and protecting and developing at the same time." This is a new path which means we will have to turn our backs on the traditional path. Environmental protection has to become integrated with economic development. If we just talk about the environment without

considering economic development, it is like looking for fish in a tree. But if we only talk about economic development without considering the environment, we are essentially draining the pond to catch fish.

CCICED has passed through 20 years of eventful growth and has been a witness to China's progress. I firmly believe this present phase of the Council will continue to contribute its new thinking, new actions, and recommendations for the benefit of China's environment and development.

Finally, **Achim Steiner** made some closing observations:

Thank you, Minister Zhou. All of us in CCICED feel that you have guided this Council with extraordinary clarity and political instinct. Throughout the six years since you and I were thrown into our respective appointments, I have been a student of your ability to master the art of when to put the foot down on the pedal, and when to take it back — to sense the opportunity. You have presided over an extraordinary period in China's articulation and maturing of its own understanding and development in the 21st century.

You have seen the graduation of a state environment protection agency into a Ministry of Environmental Protection. In terms of your ability to relate to a global audience, but also to speak on behalf of China's reality today, you have been an extraordinary force in CCICED. I think the Council hopes it has been a good companion to you.

The rest of us are, at the end of the day, only contributors of ideas. But I often think that when you wake up in the morning and you must think about ensuring clean air and access to clean water for one in five citizens on this planet. It is an extraordinary responsibility. In terms of the CCICED contribution to meeting this responsibility, you have been a master at making use of it. I want to thank you on behalf of all of us for your leadership, because without leadership a forum like this would not function.

With thanks and congratulations to all participants, Vice Chairperson Steiner declared the First Meeting of the Fifth Phase of CCICED adjourned.

III. Recommendations to the Chinese Government

China Council for International Cooperation on Environment and Development

Policy Recommendations from 2012 AGM

The first Annual General Meeting of CCICED Phase V was held in Beijing during December 12-14, 2012, with the theme of *Regionally Balanced and Green Development*.

The CCICED members observed that the 18th CPC Congress Meeting provided a clear roadmap towards green prosperity and a 'Beautiful China'. At the 18th CPC Congress Meeting, it was accepted that the Government of China put Scientific Development strategy as a highest guiding principle for the modernization of China, and listed Ecological Civilization, economic, political, social development and cultural construction as the five components of modernization. The government aims at major progress in resource saving and in constructing an environmental-friendly society by 2020 when an overall well-off society target is to be achieved. CCICED welcomes this coherent approach, which promises a more rapid and substantive shift towards a new era in the relationship between people and the environment.

CCICED members believe that balanced and green development is essential for China's scientific development and for construction of an ecological civilization. Members believe that China's green transformation is currently at a critical stage. There remain unprecedented challenges and pressures for achieving the objectives of green development. There are still prominent problems of "unbalanced, uncoordinated and unsustainable" development, with intensifying resource and environmental constraints. These issues are reflected sectorally, regionally, and even within regions.

Although China has made great efforts in the past decade to promote regional development and has achieved impressive progress, some problems and conflicts continue to intensify: large regional development gaps, especially in providing basic public services; imbalances of regional environment and economic benefit distribution, and a lack of coordination among policies related to population, economy, resources and environment. Effective coordination and cooperation mechanisms for integrated ecological system management, air and water shed pollution control are missing among regions, provinces and cities. And there is evidence of new types of environmental issues emerging, such as those related to PM_{2.5}, and concerns about potentially unsustainable patterns of domestic consumption especially in richer parts of the country.

CCICED members have stressed the importance of addressing poverty alleviation while preserving fragile ecosystems, as a significant proportion of poor people live in these areas. There is a reliance on an extensive development mode in ecologically-fragile and lesser-developed regions, leading to potential conflicts between future environmental and development trends.

The members have concluded that, with further economic development, upgrading of industries and technologies as well as enhanced environmental protection efforts, the conflicts and constraints between resource use, economic development, and environmental protection could lessen. However, impacts from a “catching up” and “leap-frog” development mode in central and western regions with fragile ecological environments, together with a gradual transfer of polluting industries and other factors, may make the environment and development relationship more difficult.

Overall, the double pressure of environmental pollution and ecological degradation may threaten the foundation of green development in China. A key constraint is the institutional and policy-enabling environment, which today is a bottleneck for achieving balanced, and sustainable regional development. This is a key issue that the new central government must resolve.

Based on the discussions during AGM and findings of relevant studies, CCICED proposes the following five major policy recommendations to the Government of China:

RECOMMENDATION 1. Enhance institutional and policy innovation as well as enforcement in order to promote practical implementation of ecological civilization.

China’s government has recognized and committed to deepen reforms in key sectors, eliminate ideological constraints and institutional/policy flaws for scientific development, and clearly has set out some of the tasks of institutional innovation for creating an ecological civilization. It is necessary to speed up the establishment of strategies, policies, institutions and mechanisms that are compatible with an ecological civilization, and to conduct comprehensive pilot demonstrations for practical implementation. Our four detailed recommendations are to:

(1) Define and develop mid- and long-term plans for an ecological civilization at the macro level.

Based on the reform and opening-up policies of the past 30 years and the practice of scientific development in the recent decade, there should be little doubt that China can and will achieve the target of developing an overall moderately well-off society by 2020, with significant progress in resource efficiency and environmental protection. However, according to China’s target to become a wealthy, democratic, civilized, harmonious and modernized country by the mid of this century, the next 30 years beyond 2020 is of particular importance. Therefore, China’s government should prepare for the future by initiating study

of environment and development trends and characteristics beyond 2020, and systematically designing a mid- and long-term plan identifying priority sectors and key tasks ahead. China needs long-term targets to guide near-term policies.

(2) Reform and establish institutional systems capable of creating and supporting an ecological civilization with great political commitment and drawing upon the views of the Chinese people.

Ecological civilization construction and green development are new tasks. Reform is also a complex system issue that involves various government agencies, social sectors and regions, and requires coordination of interests of various stakeholders. Ecological civilization construction must not only focus on ecosystem and environmental protection, but also put forward ecologically friendly development principles for other social sectors. Therefore:

First, a Commission for Ecological Civilization to oversee the strategy, planning and institutional setup at the top level as well as to coordinate implementation details, should be established at the central level. The Commission should ensure that ecological civilization is indeed incorporated into economic, political, cultural and social development.

Secondly, environmental protection should be the underpinning for an ecological civilization, and environmental authorities should be the leader, supporter and key practitioner in a national ecological civilization coordination mechanism. Establishment of an integrated and comprehensive environmental authority for ecological and environmental protection with integrated functions and high efficiency could be considered.

Thirdly, the relationship between central and local government should be coordinated in terms of ecological civilization construction within the framework of overall social and economic development, with authorities, administrative responsibilities and financial accountabilities clearly defined.

(3) Promote integrated institutional innovation towards the direction of green and ecological transformation.

To ensure that the concept of ecological civilization is incorporated into various aspects—and the whole process—of economic, political, cultural and social development, integrated institutional and policy innovation at various levels and within sectors is required, with greater attention to the levels of risk present in various development initiatives. The specific directions of ecological transformation of institutions and policies are:

- Politically, establish ecological civilization-oriented government performance assessments and other evaluation and accountability systems as a lever to ensure proper motivation and governance structure.
- Economically, put forward requirements on economic spatial layouts and

structures. Require resource/energy efficiency and environmental performance in line with ecological and environmental principles to promote the transformation of production modes.

- Culturally, promote values and norms supporting ecological civilization and enhance awareness and action on the part of the public.
- Socially, advocate for green consumption patterns and direct social activities and promote a change of life styles compatible with an ecological civilization.
- Ecologically, put ecosystem and environmental protection as the main body of ecological civilization construction with provision of sound eco-services and products, and improve protection of biodiversity through greater attention to conservation and management of natural habitats on land, in fresh waters, and in marine areas and sensitive coastal habitats.

(4) Establish ecological civilization indicators, and encourage wider public participation

Ecological civilization development targets, indicators and approaches should be established, taking into account the differences between main function zones and regions. In addition, a government official examination and evaluation system supported by appropriate indicators should be established and an accountability system should be implemented, taking into account differences between regions and levels.

It is also important to clearly define the respective roles and responsibilities of government, enterprises and civil societies in ecological civilization. Government should play a leading role in designing, guiding and exemplifying ecological civilization. Enterprises should assume higher levels of environmental and social responsibilities and improve their environmental performance. It is also important to strengthen ecological civilization related information disclosure, promote effective and orderly public and media participation, and achieve a collective force in ecological civilization.

(5) Promote comprehensive pilot demonstrations of ecological civilization

Given the complexity and difficulty of ecological civilization construction and the regional differences, it is necessary to carry out comprehensive pilot demonstrations of elements of ecological civilization to form an overall framework for a national promotion of ecological civilization construction. Ecological civilization pilot projects should take into account regional differences.

Large numbers of pilot activities have been conducted at provincial, municipal, county, village and industrial park levels by various sectors and departments in China. It is necessary to draw on and consolidate these pilot activities, and to

develop uniform standards and a specific indicator system supporting the construction of an ecological civilization.

RECOMMENDATION 2. Establish a balanced and green regional development strategy.

Balanced regional development is a difficult topic for all countries. Closing the socio-economic development gaps is one key side of the challenge, while securing sustainable development is the other. China should grasp the historical opportunities of scientific development and ecological civilization construction to meet these challenges mainly through implementation of green development.

Our detailed recommendations are to:

(1) Establish general national principles and strategy for regional development to form a broader framework of regional green development.

1) From the perspectives of its industrialization stage, urbanization level, economic capacity, and public demand for a better environment, eastern China has the basic conditions to be the first region to achieve a green transformation. In the central and western regions, conflicts between environmental and socio-economic development are still likely to be present for some time to come. Therefore, these regions must be treated as a priority for enhanced support, but in differentiated ways, in order to avoid continuation of the old path of economic development at the cost of a fragile environment. Furthermore, the effort should lead to new approaches of national, and, ultimately, international significance for sustainable development.

2) To improve the speed and quality of such a transformation, develop and implement a green strategy or blueprint for the western region, covering infrastructure construction, human capital investment, urbanization, industrialization, pollution control and eco-services provision. Increase investment for projects that can improve the human capital in western region, enhance regional infrastructure construction and eco-services provision, and reduce poverty.

3) Based on the current Main Function Zoning Plan, various development objectives, industrial development directions and spatial layout should be more clearly aligned to specific and detailed functional zoning administrative areas in order to improve operability of this zoning. At present there is confusion since the zoning is done at a coarse-grained level. For instance, develop differentiated industrial policies based on fine-grained function zones and resource carrying capacities; and develop land and population policies according to different function zones and development objectives. Then formulate investment policies according to sectoral arrangements within the detailed functional zones, and improve the fiscal system for providing public services and protecting public goods according to local ecological and social conditions. To enforce mandatory protection, define ecological red lines for important function zones, nature reserves, sensitive land and marine areas, and other ecologically fragile areas.

4) The development of eastern China heavily relies on the energy and resources supply from the western part of the country. The payment for ecological services from the east at present is far from sufficient to cover the ecological deterioration suffered by the west. For central and western regions, establish and improve a fiscal transfer system to guide and support green transformation, and implement a payment system for ecosystem service payments from eastern areas to central and western regions.

5) Adopt the principle of “priority for resource- and energy-saving and environmental protection” in the eastern region. Develop and follow very strict environmental quality standards and related emission targets, such as imposing strict pollutant discharge standards for power intensive and high pollution industries. Enhance technological innovation and management capacities that will increase the competitiveness of green economy components and their products. Fully implement a green tax system covering environmental and resource taxes or other market-based approaches to promote behavioral change of enterprises and consumers. Increase corporate social responsibility awareness, promote green corporate governance mechanisms, and establish green enterprise alliance systems and implement green supply chain management strategies for improved voluntary measures involving business, government and end users of products and services. Seek sustainable consumption through activities such as environmental awareness raising, labeling and information sharing; strengthen public monitoring, with much improved government information disclosure and public participation concerning development decisions, and insist on more adequate public environmental information disclosure by enterprises, financial institutions and other bodies, especially those operating at municipal and provincial levels.

(2) Develop sustainable urbanization plans, and establish urbanization modes adaptive to differentiated regional characteristics.

Exploring sustainable urbanization modes is one of the major challenges for eastern, central and western regions in their process of sustainable development. Differentiated sustainable urbanization plans should be developed for each of the regions.

The eastern region should aim to develop city clusters with international competitiveness, refine the service functions of super-large and large cities, improve the urban habitat environment, promote green transformation of super-large and large cities and create green development patterns within the small and medium-sized cities, and pay much greater attention to the construction of integrated and sustainable urban infrastructure.

Central and western regions should foster eco-cities, strengthen industrial functions of small and medium cities, enhance public service and functioning of small towns, prioritize the development of medium and small cities with advantageous locations and strong resource/environment carrying capacities, and actively tap the green development potential of current cities.

(3) Strengthen policy enforcement and establish an improved coordination and cooperation mechanism for regional green development and attainment of ecological civilization objectives.

1) China should establish a regional coordination mechanism and improve the capacity of central and western region governments, particularly county governments, to secure ecological civilization and green development. Together with direct investments from the government, a green development fund should be established to encourage green industries, improve the stability of ecosystems of regional concern, and support ecological construction projects. In the relatively developed eastern region, a regional environmental pollution control fund can be established to conduct environmental health risk assessment, provide compensation and resettlement of affected people, remediate the brown fields, and provide funding for pollution control.

2) Implement ecological compensation measures. A compensation fund should be determined according to the ecological function zoning in the eastern, central and western China. Eco-compensation standards need to be established based upon specific ecosystem service requirements. Fair compensation should be paid to rural residents that commit to long-term ecosystem protection. Meanwhile, extend the “polluter pay” principle to the resources and mineral development fields on a much more extensive and well-enforced basis.

3) Tighten the environmental access permission system to prevent pollution transfer on the part of industry migration or other development initiatives such as those related to tourism or new settlements. Implement a strict environmental access permission mechanism, adopt stricter emission standards and pollution control technology requirement to prevent new pollution sources and migration of pollution industries towards central and western regions. Develop regional environmental performance evaluation and assessment methods with enhanced public participation, define indicators, and determine the green development indicators according to main function zoning and regional characteristics. Monitor and evaluate the implementation by enterprises and local governments and enhance the enforcement. Regularly disclose the enterprise and government authorities that are not in compliance with EIA requirements.

RECOMMENDATION 3. Strengthen joint control of air pollution to improve regional air quality.

Pollution by PM_{2.5} and ozone is becoming a prominent problem that poses serious threats to public health. In recent years, the PM_{2.5} concentration in Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta remains at a high level. The haze days occur for 30-50% of a year, and there are ever widening gaps between the officially announced air quality and public perception. Regional air pollution has become an environmental problem that needs to be dealt with urgently, since no one city or even province can adequately address the issue on its own. Improving regional environmental quality requires regional joint prevention and control, coordinated control of multi-pollutants and multi-sources, institutional

innovation of regional environmental management and strengthening of management capacity. Our four detailed recommendations are to:

(1) Integrate regional environmental capacity, optimize economic structure and layout, and establish new regional joint control mechanism.

1) Based on factors such as inter-city pollution transmission pattern and air quality status of cities with different environmental carrying capacities, key control areas that have significant contributions to regional air quality should be identified, especially Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta areas. These are areas where there are serious problems of regional and compound air pollution. In these areas air quality monitoring should be strengthened, and regional environmental information sharing platform, joint review / approval system for major projects, and regional emergency response mechanisms should be established. There should be strict controls on new construction projects that are likely to introduce additional air pollutants into areas where planned targets are not being achieved at present, and where air quality is seriously deteriorating. Mechanisms that can help improve regional air quality, such as emissions trading systems, should actively be promoted.

2) Deepen industrial pollution control, advance SO₂ emission reduction, establish industrial NO_x control system focusing on power and cement sectors, deepen industrial smog pollution control, and enhance VOCs pollution control from typical sectors and sources. Multiple pollution control is essential if good air quality is to be secured.

3) A systematic environmental and resource review of domestic automobile development plan should be conducted. Comprehensively strengthen mobile sources control, implement new vehicle emission standards at proper time to reduce the vehicle emission intensity, and adopt total vehicle quantity control in cities with serious vehicle emission pollution. Develop new sustainable urban transport system. It is necessary to further define low-emission zones and zero-emission zones in the major cities under a regional air pollution control system, and develop management measures accordingly. A total vehicle volume control policy should be explored in mega cities with population of more than 10 millions. Better air quality modeling and better emission inventories are required.

4) Promote multiple high quality energy sources such as natural gas, low-sulfur diesel, LPG and electricity to replace coal. Regional coal consumption growth should be strictly controlled. There should be a continuous increase in the percentage of high-pollution fuel forbidden zones in urban built-up areas.

(2) Revise relevant laws and regulations to provide legitimate guarantees for regional air pollution control.

The existing Air Pollution Control Law cannot adequately address air pollution control under the current situation. It needs to be revised to provide legitimate support to relevant policy measures for new types of pollutants. First, PM_{2.5} and

ozone should be treated as the new core need of air pollution control. Besides the further deepening of industrial pollution control, focus should also be put on pollution control of non-point sources of smog such as small and medium boilers, dust, restaurant emissions, decoration painting, small engines, as well as mobile sources such as vehicles. Also pay attention to non-vehicle mobile sources, and include emissions from ship, plane, train and off-road equipment into the coverage of air pollution control laws. Second, keep ambient air quality improvement as the key objective of air environmental management, and clarify the responsibilities and obligations of local government for the compliance of air quality. Third, strengthen the punishment of violators with a view to make non-compliance more expensive than compliance.

(3) Strengthen pollution control and implement multiple-pollutant synergic control

Establish total amount control method with improvement of air quality as core objective, implement synergic emission reduction of multiple pollutants such as SO₂, CO₂, NO_x, particulate matter and VOCs, etc., and coordinate emission reduction and energy conservation policies. Deepen industrial pollution control, advance SO₂ emission reduction, establish industrial NO_x control systems focusing on power and cement sectors, deepen industrial smog pollution control, and enhance VOCs pollution from typical sectors.

□4□ Increase investment and strengthen science and technology development, and implement a strong national clean air action plan as soon as possible.

It is urgent to establish a special fund at the central government level for air pollution control, enhance the support of science and technology, and implement a national clean air action plan. Establish investment mechanism with diversified investors and modes to direct and encourage active investment from local governments and enterprises on air pollution control. Carry out special studies on generation mechanisms, source analysis and control approaches for air pollution in different regions.

RECOMMENDATION 4. Strengthen marine environmental protection and construct a more balanced approach to becoming a marine power.

While China's marine economic development is accelerating, there has been intensive pressure on the marine environment, with the most critical example being the Bohai Sea. Specifically, with increasing large-scale offshore oil exploitations, the risk of marine oil spill is rising and marine oil spill incidents occur frequently. This problem is exacerbated since there are serious problems of contaminants entering the ocean from the rivers, and also across-the-board, large-scale, rapid-paced land reclamation activities. Also other sectors are expanding, for example aquaculture and tourism, leading to conflicts in use of the marine environment. There is an urgent need to reform the current marine environmental management mechanism, coordinate marine resource development and environment protection, and achieve integrated marine-land economic development and environmental protection. In order to improve

marine resource development capability, and to more effectively protect the marine ecological environment, and to approach the strategic goal of China becoming a sustainable marine economy and power, our four detailed recommendations are to:

(1) Speed up the formulation of a robust national marine development and environmental protection plan.

This plan should be based on existing land and marine function zoning plans and national-level development strategies of coastal governments, cover all the coastal zones, and identify fundamental policies and strategies for handling the relations between the marine development and marine environment protection. The plan should integrate the overall planning of offshore areas with plans for coastal provinces, and establish marine economy and environmental protection areas in the Yellow Sea and the Bohai Sea, the East China Sea and the South China Sea.

Based on the integration of industrial distribution planning in existing land and marine functional areas, one should formulate and revise the coast layout planning of key marine industries and major sea-related industries (especially, offshore oil and natural gas, coastal nuclear power, coastal or port chemical industry, coastal or port irons and steels, coastal real estates), pay special attention to marine ecosystems that preserve high ecological value, but are highly vulnerable to human activities, and incorporate such planning into overall coastal and marine spatial plans. China should also focus on international relationships within marine development and protection, and participate and take the lead in cross-border international and regional cooperation.

(2) Strengthen legislation, law enforcement and governance mechanisms of marine environment management.

The institutional and regulation system for offshore oil field development approval and supervision should be improved with emphasis on environmental assessment as articulated in the *Environmental Impact Assessment Law* and *Regulation on Environmental Impact Assessment of Planning*. There is a need to improve the information disclosure system, establish a unified mechanism of receiving and publishing information, strengthen enforcement of the *Regulations on Open Government Information*, and ensure the public's right to know. It is important to establish and improve the cost bearing system for emergency responses, explicitly identifying the party / parties responsible for the accident and the costs of emergency responses.

The following actions should be taken. Clearly define the liability of enterprises for preparing emergency response plans. Revise relevant laws based on lessons learned from international experience—require the operator and oil company to take the primary responsibility to meet any emergency. The government's reaction to emergency should be supplemental. Develop a more complete set of applicable specifications to enterprises for access permission, operation, and for disaster response. Strengthen corporate environment awareness and

responsibilities. Corporate environmental protection capacity will be considered as an essential condition for approval of enterprises' involvement in any activity by marine development. Local maritime courts and procuratorates should be instructed to clearly address enterprises' legal responsibilities regarding pollution and damages of marine environment arising from their operation. This should discourage enterprises taking any chances. Enhance the prevention of environmental risk from marine-related enterprises, clearly regulate enterprises or other beneficiaries from overdevelopment and illegal development activities, and set in place other sector-specific mechanisms to avoid marine accidents.

Furthermore, there is a need to strengthen the enforcement and supervision capacity of the marine administration authorities, form a unified offshore law enforcement team, establish China's marine environment administrative supervision and law enforcement system, and strengthen the supervision and enforcement of the environment impact assessment system for marine development activities.

(3) Establish national marine emergency response planning system for major environmental incidents.

Based on *National Marine Functional Zoning (2011-2020)*, existing *Emergency Response Plan for Oil Spill in Offshore Oil Exploration and Development* and *Emergency Response Plan for Accidents and Disasters in Offshore Oil and Natural Gas Activities* should be consolidated, and a National Emergency Response Plan for Major Marine Environmental Incidents should be established by joint effort of relevant departments. The system should formulate special emergency response plans and on-site emergency handling plans for various levels and types of potential marine environmental accidents from all risk sources, and define the responsibilities of relevant departments and personnel for various stages of accidents (i.e., before, at the beginning of, during, and after, accidents).

(4) Strengthen the capacity building of science and technology in marine environmental management.

China should require oil and gas operators to invest in regional and national funds for marine environmental research with the aim of strengthening science and technology research on marine environmental management. This will support overall strategic planning of coastal zones and marine spaces, increase capacity for ocean and coastal emergency responses, help improve marine environmental management laws and regulations, developing marine environmental monitoring and early-warning systems, and improve marine ecological loss evaluations and remediation efforts.

RECOMMENDATION 5. Establish long-term mechanisms with environmental quality improvement and risk prevention as objectives to promote strategic transformation of environmental management and human health protection.

It should be clearly articulated in all environmental laws, regulations, and any documents that comprise China's National Environmental Management System that the ultimate goal of the environmental system is to protect public health and the ecosystem. To achieve this goal, ambient environmental quality standards should be designed based on the scientific understanding of the pollutants' effects on human health and ecosystems and in cooperation with implementing agencies. These ambient environmental quality standards should be assessed, revised, and updated so that they are in line with the latest scientific findings. Environmental monitoring standards and regulations should be developed to accurately measure ambient conditions against the quality standards.

Our nine detailed recommendations are to:

(1) Link emissions control targets directly with achieving specific environmental goals.

A clear distinction must be made between ambient standards designed to maintain pollutant concentrations at environmentally protective levels, and national or regional pollution caps designed to limit total pollutant loadings and control trans-boundary flows. The two policies must be integrated to avoid antagonistic effects especially if market-based implementation policies are applied. Implementation policies should be established that link the interim targets and the improvement of air and water quality.

It is recommended that MEP organize comprehensive research on the environmental carrying capacity of key national development zones and preferred development zones and on the assimilative capacity of river basins. In addition, efforts should be spent in developing sectoral caps for the major industrial source sectors such as electricity, cement, iron and steel and automobile industries.

(2) Develop, maintain and update scientifically sound pollution inventories.

Inventories should be established for air and water pollution sources as well as contaminated sites and sites where chemicals and hazardous substances are located as feed stocks or products. A science-based inventory will enable China to establish criteria for prioritizing and cleaning up the worst sites.

(3) Strengthen institutional capacity at all levels.

At the central level, it is important to integrate water management authorities which are currently scattered among over 10 ministries. MEP should be designated as the lead coordinating agency, with support from the other ministries.

At the regional level, it is recommended to expand the six MEP's Regional Environmental Supervision Centers into Regional Environmental Quality Management Centers.

At the local level, governments should develop and publish mid- and long-term strategies on environmental quality and emissions reduction control, as well as a detailed implementation plan to achieve the ambient environmental standards. Sanctions should be applied in case local governments fail to meet established requirements. Meeting these targets should become the key components of the environmental performance contracts signed by the local government officials.

(4) Improve coordination between ambient air quality standards, vehicle emissions standards and fuel standards.

Continuous efforts should be made to increase incentives for low emitting vehicles and disincentives for high emitting vehicles. The air quality impacts of transportation infrastructure need to be evaluated as part of the planning and permitting process. Authority should be conferred to MEP for fuel quality standards development.

(5) Strictly enforce Environmental Impact Assessment and “Three-Simultaneous” requirements.

Environmental impact assessments (EIA) should be conducted on major government policies, and social and economic development plans. Independent analysis and verification must be carried out to ensure their scientific validity. The public should be given full access to the complete text of EIA reports and be allowed ample time for comments. The construction of projects should not begin until all EIA requirements have been satisfied and a permit issued. In addition, it is necessary to revise the existing legal requirements.

(6) Improve permitting system.

Connections must be established between permit issuance and total emissions control targets to ensure attainment of environmental quality standards. New sources discharging pollutants covered by total emission control requirements must offset their added incremental discharges.

Enterprises should not be allowed to start up or continue to operate without pollutant discharge permits, and be supported by monitoring, reporting and inspection requirements as established by the government.

(7) Increase penalties for non-compliance and enhance monitoring and inspections.

The responsible party should pay the costs of environmental damage to people or property, or economic losses. Compensation should also cover the costs of reasonable measures taken to prevent or limit environmental damage and for clean-up and restoration of the environment to its previous state.

China must first establish stringent requirements for monitoring (including electronic monitoring), reporting and certification. This should include specific regulations governing quality control and quality assurance.

(8) Improve environmental information disclosure and public participation.

Environmental information should be made available to the public in a timely and accurate manner. Data on air quality in key cities will be disclosed in form of forecast and daily report. Online monitoring data on the quality of surface water should be disclosed every four hours. Data on section water quality in key river basins will be disclosed weekly. Lists of key projects subject to national pollution reduction mandates should be disclosed. Sensitive information such as heavy metal and landfill pollution should be published and followed up in a timely manner. Information on large environmental incidents, as well as the treatment and follow-up measures, should be released in a timely manner. Name lists of key emitters and emitters who violate laws should be disclosed.

(9) Promote the use of market mechanisms.

China needs to increase the use of market-based economic incentive tools such as taxes, emissions trading, and natural resource pricing and establish supporting policies, institutions, and guidance for each of the market-based policy alternatives under consideration. Complimentary laws and regulations and public participation must also be in place. Furthermore, setting up a Clean Production Fund will help provide incentives for existing and new enterprises to adopt clean production methods.

IV. Meeting with Premier Wen Jiabao

On 14 December 2012, at the conclusion of the AGM, China's Premier Wen Jiabao met with a group of international members of CCICED who made a courtesy call on the Premier.

During the meeting, Wen expressed his appreciation to the members for their concern and support for China's environment and development over many years.

He also said he greatly cherished the friendship with the members, and he expressed his best wishes for the future of CCICED.