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Climate Policy 2005

and Beyond

Japanese-German Impulses

A documentation on the climate policy dialogue and conference between stakeholders of Japan and Germany within the "Germany year in Japan 2005-2006"

Editors:
Hermann E. Ott
Karin Holl

2005
2006
Deutschland
in Japan
日本における
ドイツ

日独気候政策対話

WUPPERTAL SPEZIAL 33

Hermann E. Ott and Karin Holl (eds.)

Climate Policy 2005 and Beyond

Japanese-German Impulses

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and Beyond
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Climate Policy 2005 and Beyond

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A documentation on the climate policy dialogue
and conference between Japan and Germany
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Monday, 31 October
Tuesday, 1 November 2005
United Nations University

Wuppertal Institute
2006

The conference and workshop “Climate Policy 2005 and Beyond. Japanese-German Impulses” was partly funded by the Governments of Japan, Gemany (Environment Ministry) and North-Rhine Westphalia (Ministry for Innovation). The Wuppertal Institute and IGES are very greatful for their contributions.

Federal Ministry for the
Environment, Nature Conservation
and Nuclear Safety

Die Landesregierung
Nordrhein-Westfalen

NRW.

Wuppertal Institute for Climate, Environment and Energy

The Wuppertal Institute explores and develops models, strategies and instruments to support sustainable development at local, national and international level. Sustainability research at the Wuppertal Institute focuses on ecology and its relation to economy and society. Special emphasis is put on technological and social innovations that decouple economic growth from nature use and wealth and on launching corresponding initiatives.

Professor Peter Hennicke heads the Institute as President and Chief Research Executive. At present, around 140 staff members are working in research groups, scientific services and administration. The Institute was founded by Professor Ernst Ulrich von Weizsäcker in 1991. An International Advisory Board supports the Wuppertal Institute, ensuring its independence and the quality of its research.

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The core research fields of the Institute's research groups are:
- Future Energy and Mobility Structures
- Energy, Transport and Climate Policy
- Material Flows and Resource Management
- Sustainable Production and Consumption

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Institute for Global Environmental Strategies (IGES)

The Institute for Global Environmental Strategies (IGES), established by an initiative of the Japanese Government in 1998, is a research institute that conducts pragmatic and innovative strategic policy research to support sustainable development in the Asia-Pacific region-a region experiencing rapid population growth and expanding economic activity.

The mission of IGES is to promote the transformation of 20th Century society, characterised by mass production and mass consumption, to a new societal framework founded on sustainability. We must re-examine our value systems and socio-economic activities; change is essential. IGES aims to propose various measures for improved and realistic social and economic systems, which will form a new paradigm for the future.

Strategic policy research for the realisation of sustainable development is a formidable task in the Asia-Pacific region, which has such diverse topography and cultures, and great variance in the level of economic development. IGES collaborates with a broad range of stakeholders, such as national governments, non-governmental organisations, businesses and citizens groups, to carry out this research of such a challenging nature, aiming to ensure that the results are reflected in the policy-making process.

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Introduction

In 2005 two very important milestones of international climate policy were reached: The entry into force of the Kyoto Protocol and the installation of a European wide emissions trading system. In Germany, the publication of the fifth report of the inter-ministerial working group on climate policy was published with an evaluation of climate protection policies. In 2004 the Japanese climate protection policy was fully revised so that Japan will also bring forth important developments in this area. The traditional close cooperation in this area between Japan and Germany, must now result in more concrete projects to keep this dynamic going well into the future. There is much potential to achieve a lot.

Within the unique framework of the Germany in Japan Year 2005–2006, the German Ministry for the Environment, the Ministry for Innovation of Northrhine-Westfalia, together with the Institute for Global Environmental Strategies (Japan) and the Wuppertal Institute (Germany) put together a two day event in Tokyo comprising an experts workshop and a one day conference.

At the conference, experts and practitioners of the German government, the states, the private sector and environmental organisations from Germany and Europe presented the decisive factors for success as well as the difficulties encountered namely in introducing an eco-tax and the Emissions Trading Scheme. Japanese experts and practitioners reported on Japanese approaches and reviewed the German/European experiences in light of the Japanese situation.

At the expert workshop, researchers and decision makers discussed the experiences with policy dialogues and stakeholder involvement. They assessed the transferability of German/European experiences into the Japanese context and the broader inclusion of civil society into the governmental decision making process, that is so say, the opportunities in co-operating with politics, private sector and environmental organisations.

This report documents the events and highlights the most outstanding conclusions and ideas for further cooperation in the future. It will begin with the documentation of the conference held on 1 November 2005 followed by the report on the experts workshop held on 31 October 2005. Dr H. E. Ott will conclude with a short assessment and outlook.

Contents

Foreword

Prof. Peter Hennicke,
Wuppertal Institute
Prof. Akio Morishima,
IGES

Although they are situated each on the other side of the globe, Japan and Germany have much in common. Both have the economic standing and the technology to become the most energy and resource efficient countries in the world. In their respective regions, both countries are well positioned to take the lead in and initiate this paradigm shift to ambitious climate mitigation strategies and to resource efficient societies. Japan and Germany have exercised leadership for many years in international negotiations on climate policy, including the United Nations Framework on Climate Change and the Kyoto Protocol. Both countries are facing similiar challenges and have acknowledged that "business as usual" cannot meet the demands of climate change, the targets of the Kyoto Protocol and the longrun goals of highly developed countries for climate mitigation.

Having recognised this, the German Federal Ministry for the Environment, the Ministry of Innovation, Science, Research and Technology of the State of North Rhine-Westphalia, Germany's hub for technological innovation, the Wuppertal Institute (Germany) and the Institute for Global Environmental Strategies (Japan) joined forces to organise a stakeholder

dialogue and conference on climate change. It was part of the science section of very successful "Germany Year in Japan 2005/2006" The distinct intention was to create synergies between the two countries in order to reach new levels of partnership and continue from there.

Hence both the stakeholder workshop on 31 October and the conference on 1 November 2005 brought together stakeholders from business, cities and civil society from both countries to discuss and exchange ideas on how to meet the climate challenge. Both events assessed the German/European and Japanese experiences and how to translate them into the Japanese and German contexts. Both events placed a special focus on the broader inclusion of civil society into the governmental decision making process.

As the most technologically advanced countries interested in meeting the Kyoto challenge, Japan and Germany have an obligation to lead the way into a carbon-constrained world. Climate friendly technology and innovation have a decisive role to play here, as they give an edge in the global market. Japan, Germany and the state of North Rhine-Westphalia are well positioned to meet this challenge and continue to be leaders because of technological advances made in the area of renewable energy and energy efficiency.

In the language of climate mitigation diplomacy „reduction goals" and „burden sharing" often have the connotation of severe societal costs and sacrifices for sustainable development. But this holds only true as long as GHG-reduction targets are not directly linked to risk minimisation (according to the precautionary principle), to economic and social drivers for innovation, modernisation and to new business fields. Reality has proven that the momentum of climate mitigation increases when a closer look into the social benefits is taken in developing as well as developed countries. Possible benefits include avoided casualties (loss of life and health) as well as less economic damages and societal costs in the future. It has been shown by German researchers (Kemfert 2005) that the avoided damage costs of climate change are much higher than the today`s costs of climate mitigation strategies. Furthermore, benefits arise from fostering new business fields in green markets like end use energy efficiency technologies, more efficient and cleaner power plants (e.g. Combined Heat/Cold and Power Production) and the broad mix of renewables. Energy efficiency and the mix of renewables have multiple benefits because they reduce import dependency of oil and gas, create new jobs and promise huge export markets and in the long run stabilize the societal energy costs. This holds especially true for integrated strategies of efficiency and renewables: The highly cost effective options of energy efficiency can keep the energy bills low because they compensate for the higher costs of renewables and thus support the rapid market introduc-

tion, learning effects and cost degression of renewables. In Germany, this is one of the reasons for the strong engagement of municipalities in regional climate mitigation policies (e.g. the City of Hannover) and of energy service companies which earn their profits on investing in energy efficient technologies for their clients.

The following report contains the materials presented at the conference and documents the conclusions of the discussions that took place in the three workshops. We hope that it will enrich and further stimulate the fruitful discussions between our countries, thereby making a useful contribution to the protection of our atmosphere.

We would like to extend our heartfelt thanks to the organisers of the "Germany Year in Japan 2005/2006", the umbrella under which this conference was initiated. We also extend our gratitude to the German Federal Ministry for the Environment, Nature Protection and Nuclear Safety, to the Government of Japan, to the Government of North Rhine-Westphalia and the Institute for Global Environmental Strategies (IGES) who made this event possible through their generous financial and personal contributions. Furthermore, we would like to thank the German Embassy in Tokyo for their help in the organisation of this event. In particular, we are thankful to the staff of the Institute for Global Environmental Strategies (IGES) and the Wuppertal Institute for their hard work in preparing this event. Without their efforts, this dialogue between Japan and Germany on climate change would not have been possible. And last but not least, we would like to thank all the participants at the workshop and the conference for their enthusiasm and valuable contributions.

Opening Ceremonies

Welcome addresses

Mr Hiraku Kobayashi
Director Global Environment Bureau
Ministry of the Environment, Japan

Good morning ladies and gentlemen. According to the programme, Minister Koike was scheduled to deliver the welcome message, however, because of the cabinet reshuffling, and although she will continue as Environment Minister, she has asked me to give the welcoming address. I would like to express my appreciation to the Wuppertal Institute, IGES, the attendants and the speakers. Thank you for taking time out of your busy schedule today.

Japan and Europe, in particular Germany, have exercised leadership in climate change policies for years. This includes the United Nations Framework Convention for Climate Change as well as the Kyoto Protocol. That the research institutions of both countries deepen their understanding and cooperation in climate change policies in the context of the Germany Year in Japan 2005/2006 is something to be commended.

On the 16th of February, 8 years after its adoption, the Kyoto Protocol has entered into force. There was a commemorative event in Kyoto to celebrate this. This was transmitted to the world via internet and we received many congratulatory messages from all over the world. Since the protocol has entered into force the first COP MOP will be held in Montreal, Canada at the beginning of next month. At this conference, there will be a discussion on the international framework and how it should be designed for the time beyond 2013, that is to say, after the first commitment period of the Protocol. This is an important step forward to work together in order to achieve GHG gas stabilization, which is the original intent of the convention. Emissions must be significantly reduced on a world-wide basis and thus, it is crucial that all the countries participate in an effective framework. In order to understand how to structure the framework for the future,

this would require that the industrialised nations achieve their reduction commitments as promised in the Protocol.

In Japan, thanks to all the efforts undertaken by the stakeholders, and looking at the GDP ratio as well as per capita emissions amongst the developed countries, we are at the lowest level for CO_2 emissions. However, compared to 1990 levels, CO_2 emissions for fiscal year 2004 have increased by 7.4 percent. There is still a significant gap to reach the 6 percent reduction target under the Protocol. We must make a tremendous effort if we are to attain this goal. As a means to this end, in April of this year, the Kyoto Target Achievement Plan was introduced. More than 200 measures and policies have been set forward to support the reduction efforts. There are voluntary reduction measures for industry, support through subsidies and regulatory methods by enforcing new standards and making use of the Flexible Mechanisms provision of the Protocol.

We are trying to mobilise every method possible to reach our goal. We must have a mechanism to finance our reduction plans and we are fast coming to the conclusion that it will be necessary to introduce an eco-tax. The Ministry of Environment believes that this tax could be a mechanism whereby environmental efforts and undertakings will be widely supported financially by the general public. We will be able to promote various counter measures for global warming utilizing the revenue coming from this tax. Thus, in industry, businesses and private households, there will be an incentive to further reduce emissions. There will also be a strong public awareness effect.

Last year, for the first time, the Ministry of Environment put forth a specific draft proposal for an eco-tax. We must comprehensively look into every aspect of this tax and design it in the most effective way. This fiscal year we have come up with a second draft proposal for the eco-tax after having taken into consideration all the input received so far. The Minister of Environment would like to continue to listen to the general public, industry as well as other relevant ministries to gain their understanding.

In addition to the eco-tax, in today's symposium, there is another important issue: emissions trading. This is a very cost effective mechanism. The Ministry of Environment has already introduced voluntary participation in such a system whereby more than 30 entities and businesses are taking part. We must focus our attention both on the ecological-tax reform and emissions trading. I think the symposium today will be very useful for all of us in trying to go forward with this discussion. I very much hope that today's symposium will be conducive for the advancement of climate change policies. Thank you very much for you kind attention.

Mr Stefan Gallon
Head of Economic and Commercial Services
German Embassy Tokyo

On the occasion of the events taking place during the Germany Year in Japan 2005–2006, it is a great honour for me to give opening remarks at the Climate Policy 2005 and Beyond, Japanese/German Impulses conference.

The Wuppertal Institute and IGES worked very hard to organise this symposium.

I am from Wuppertal and so it is indeed gratifying for me to speak at the opening of this jointly hosted conference. I am certain that you are aiming very high because global warming prevention is a daunting challenge which also offers a great opportunity for cooperation between Japan and Germany. Chancellor Schröder focused on this issue of global magnitude when he visited Japan in 2004.

In implementing the Kyoto Protocol, Japan and Germany are working together as partners in mitigating global warming. This conference is part of such a partnership. Japan and Germany both have high energy efficiency standards, state of the art technology for energy efficiency and great potential for renewable energy. The high price of oil is putting a lot of pressure on the national economies around the world. The ecological-tax reform is an area where Japan and Germany share a great interest and can work closely together. Here, both countries are facing a similar challenge. I am sure that the science and technology section of the Germany Year in Japan can shed light into this particular field. Furthermore, the science and technology exchange between the two countries will be able to reach new levels of partnership through such a conference. I sincerely trust that this symposium will be a great success and that it provides an opportunity to exchange views.

Dr Michael Stückradt,
Deputy Minister for Innovation (Northrhine-Westfalia)
Read by Dr Hermann E. Ott, Wuppertal Institute

Your Excellencies, Prof. Morishima, Ladies and Gentlemen,
It is a great pleasure for me to address this important conference "Climate Policy 2005 and beyond — Japanese / German Impulses" in Tokyo. Unfortunately, I have not been able to come myself, because I will be in Japan in a couple of days and extending my stay was simply not possible.

However, I commend the Institute for Global Environmental Strategies and the Wuppertal Institute for setting up this timely conference. Climate change is real and we have to take immediate and effective steps to fight it. Technology and Innovation have to play a great role — and Japan, Germany and in particular the state of North Rhine-Westphalia are in very good positions to contribute to this challenge. We are working with advanced and sophisticated technology, for example in renewable energies and regarding energy efficiency. Climate friendly technologies are good for our economies, because they give us an edge in the global market. Let's do more to strengthen this lead.

I sincerely hope that this conference will help in exchanging ideas between our countries on how to deal with climate change. Governments have to play a role, but so do industry, municipalities and the organisations of civil society. May it also help to strengthen the ties between Japan and North Rhine Westphalia, where the capital Düsseldorf is home to the third second largest Japanese community in Europe, after London and Paris. The Japanese Institute for Global Environmental Strategies and the Wuppertal Institute, have for some years laid the foundation for scientific co-operation and I would be happy if they continued to do so.

I wish you a very successful conference and I am sure that it will be a very good example of our scientific cooperation in the Germany Year in Japan 2005/2006.

Key Note Speaker

Climate Policy — Politics and Instruments in Germany

Prof Dr Peter Hennicke,
President,
Wuppertal Institute

Good morning everybody, Excellencies, Ladies and Gentlemen. It is a great pleasure for me to be in Japan once more and to see so many friends.

I had the opportunity to attend the GEA conference on Global Environmental Action two weeks ago and the honour to listen to President Koizumi, to the Crown Prince and the Princess. It was a big event that also dealt with climate change and the urgency of climate protection.

My short presentation will focus on some long-term perspectives world wide and for Germany. I will talk about how to keep climate change within a tolerable window and then about the available options; one of them being the combination of efficiency with renewable energy. Then I will focus on costs and benefits of selected new technologies with reasonable additional costs. I will also talk about policy mixtures and the new instruments, needed to combine renewable energies with an strategic initiative for energy end use efficiency.

In Germany, we have reached a reduction of 18.5 percent of CO_2 compared to the year 2000. But the reduction rates have drastically slowed down showing that more must be done especially in the areas of private households and transportation in order to reach the Kyoto reduction target of 21 percent. The share of renewables of primary energy must also be increased. It has been decided to double the share of electricity from renewables until 2010 and reach a 20 percent share by the year 2020.

Germany also plans to double energy and resource productivity up to 2020 (compared to 1990). It has been announced that a 40 percent reduction until 2020 would be possible in Germany, provided that all other EU members achieve a 15–30 percent reduction. There is a broad consensus of German experts that Germany as all developed countries, must reduce CO_2 by 80 percent by 2050 in order to achieve an average of 50 percent on a global scale. How will this be possible?

I will show you only three possible scenarios for the 21st century. The first one is from the renewable energy conference in 2004, the second one from

the Wuppertal Institute together with Amery Lovins from the Rocky Mountain Institute and the third one is from the Scientific Advisory Council of the German government. The one common key denominator emerging from all three sustainable energy scenarios is that we must give energy efficiency highest priority if we want to achieve a sustainable energy system.

The scenario developed for the German government is based on the IPCC A1T-scenario and relies very much on photovoltaic and solar thermal electricity generation up to the end of this century. Wind and biomass are important options as well. It is important to keep in mind within such a scenario, that the earth's temperature should not rise beyond 2 degrees Celsius and the rate should be less than 0.2 degrees per decade.

According to this scenario, reducing CO_2 by 50 percent is possible along with globally phasing out nuclear power until 2050 and at the same time raising living standards in the developing countries. The very important message is that this is the least cost option compared to other IPCC scenarios.

How can we in Germany contribute to this development? To reach 80 percent CO_2 reduction up to 2050 is a tremendous challenge for developed countries, not only for Germany, but also for Japan and for the United States. From developing many different scenarios and technological strategies for the German government together with other institutes, the same message always emerged: about 40 percent of primary energy can be reduced up to 2050 in combination with GDP-growth of about 1.5 percent p.a. when we rely on fostering energy efficiency in all sectors. This will make it possible to reach a CO_2 reduction target of 80 percent up to 2050 and at the same time phase out nuclear energy up to 2025 (as decided).

Especially, the transportation sector must and could become much more efficient. About 40 percent of the fuel consumption compared to the reference case could be reduced by the year 2050 and then about 25 percent could be supplied by alternative fuels from biomass and in the long-term hydrogen for renewables. We could have a total share of 23 percent alternative fuels by the year 2020 and about 8 percent coming from biomass. In the last 10 years wind power in Germany has grown in leaps and bounds because of the incentives of the German renewable energy act. The existing wind capacity is now more than 17 GW (giga watts). This is the largest windpower market in the world which has been created with reasonable extra costs by the incentive scheme of the Renewables Energy Law within only ten years.

What are the lessons learned so far in terms of these long-term energy scenarios?

We learned that an 80 percent CO_2 reduction is feasible with very different technological options on the supply side. We learned that the greatest contribution (60 percent to 70 percent) to reduce CO_2 must be realised through energy efficiency. We also learned that risk minimisation, that is climate protection plus nuclear phase out can be financed with reasonable additional costs. But there are some important challenges for implementation. One is the initially higher cost of renewable energy. Another one is the restructuring of power plants for more decentralised modes of operation and a strategic initiative to bring energy efficiency into the market place. Another challenge is getting a consensus on new policy mixes to support renewable energy. The good news is that we have a learning curve on renewables and a realistic long run perspective for tremendous cost degressions by mass production. The CO_2 avoidance costs of most of the renewables are relatively high at the moment but they will go down when a greater market share will have been reached where wind power, combined heat and power and biomass can make a profit resulting in negative CO_2 avoidance costs.

Comparing the electricity coming from renewables with the fossil fuel options, between the years 2015 and 2030, depending on the assumptions, the mix of renewable energy will be more cost effective than the mix of fossil fuel based electricity. This is good news. But we will have a very challenging period of 15 maybe 20 years before this switch takes place. In total, additional costs of about € 50 per capita/per year would have to be borne by society to implement a risk minimising strategy (e.g. nuclear phase out; 80 percent CO_2 reduction up to 2050). But this would also be in conjunction with a significant positive net employment effect and competitive advantages from renewable energies and cost reductions from energy efficiency. This would compensate the loss of jobs within the coal and nuclear industries. So for the German society € 50 per capita/ per year seems to be a small insurance fee to pay to phase out nuclear energy and at the same time making a huge contribution to climate protection.

The potential for energy efficiency in Germany is tremendous. It adds up to 45 percent of primary energy compared to the base year 1990. This is true for all the sectors ranging from electricity generation, transportation, heating, services construction etc. If we could make this happen by a strategic energy efficiency initiative, we could reduce the total energy costs by about 80 billion Euros per year at recent energy prices. This would be a major step toward a more competitive and environmentally benign society.

Together with a large German power supplier, Wuppertal Institute conducted a study on the potential for cost effective CO_2 reduction options in Germany. All in all, 69 technological options were identified which could

reduce the consumption of electricity with a net benefit. This means in total that about 150 million tons, or 25 percent of German CO_2 emissions, can be avoided with a profit or with zero net costs. These are the low hanging fruits. Of course there are also a lot of barriers to be overcome. One important barrier is the missing incentive structure for bringing the utilities and other new players into the energy services market. Because there would be a great gain if society invests much more in energy conservation instead of producing electricity for the same energy service. On average, it costs 2–4 ct/kWh to save electricity by advanced technologies which is muss less than to produce electricity (about 5 ct/kWh) or to sell electricity to the final customer (about 7–17 ct/kWh including delivery costs).

The last part of my presentation will focus on some promising technologies and what could be done in research and development and practical cooperation between Japan and Germany.

Here are some top energy technologies for climate mitigation: efficient "clean coal" technology, decentralised co-generation, solar appliances, power production by wind, geo-thermal, biomass, energy efficiency technologies (e.g. applicances, lighting like LED), passive houses (with 15 kWh/per qm/a), storage systems and efficient vehicles. This is the result of a screening of important research and development programmes in the world. But there is is a very important message: It is not only one specific technology which matters, but there are many systems solutions which have to be integrated and optimised; for example in decentralising intelligent energy systems or as stand alone systems for rural electrification in the developing world. Addionally, much more R&D and projects need to be done to develop alternative fuels and to construct more efficient buildings.

In order to get all these things done and to overcome barriers a policy mix targeted at specific sectors and barriers is needed. This mix should combine globally steering instruments such as an energy tax, subsidy reform, or emissions trading with target group specific instruments: Incentives, campaigning, efficiency standards, public procurements, stimulation of energy service companies, third party financing, establishment of an energy efficiency fund, and having a more targeted efficiency initiative for the renewables and the CHP sectors. Especially energy efficiency funds are promising. This is based on empirical experiences from the US and from the UK, the Netherlands and Denmark. Wuppertal Institute calculated an energy efficiency fund for Germany. This fund could be established by charging about 0.1 Cent per kilowatt hour on electricity and natural gas sales to build up a total fund of about one billion Euro in order to give incentives for more efficient use of energy and efficiency programmes. The money

should be allocated to energy service companies, utilities, consultants etc. by a tendering procedure. The calculated results of 12 model programms are very impressive, reducing total electricity and heat consumption by about 15 percent up to 2015,reducing CO_2 by 70 million tons per year compared to the reference case. The cost/benefit-ratio of all programmes is very beneficial for customers and for society and the decreased costs and new business fields for efficiency equipment would create about 75 000 jobs (net). So again, efficiency is key. It pays and it should be integrated more vigorously with renewables. My book on "Negawatt", which has also been translated into Japanese, explores the concept of how utilities could invest in energy efficiency for their customers with a profit (the so called "Negawatts") instead of only investing into new power plants (the so called "Megawatts").

In terms of Japanese-German cooperation, it would be very valuable to have an R&D network between the EU and Japan on what could be a robust and risk minimising technological corridor. This could include distributed power systems and "energy conservation plants" ("Negawatts") as well. The German-Japanese cooperation should also focus on exchanging experiences on best available instruments to get efficiency into the market place e.g. through contracting ("third part financing"), demand side and resource management, by creating an initiative for more efficient buildings using photovoltaic and solar technology and by bringing co- or even tri-generation to the market place as well a more efficient use of biomass.

We should have an R&D initiative based on the vision of a "2000 Watt per capita society". The general feasibility of this concept in OECD countries has been demonstrated by Swiss research institutes. The next steps forward would be to look into detailed technological potentials, sector specific implementation plans and cost-benefit analysis. This could be done by international cooperation and joint R&D projects. For example, we must identify the integration of material and energy efficiency strategies and more sustainable patterns of consumption and production. Additionally, we need international knowledge sharing, a diffusion network of best available techniques and lessons learned to help the developing countries to leapfrog to advanced technologies for energy efficiency and renewables. This could be organised by an international efficiency and renewable agency network collaborating with the Global Environmental Fund (GEF), which has a large portfolio of existing lessons learned.

A a good friend of mine, Prof Jürgen Norgardt told me: It may not be cost effective to save the world, but it will be worthwhile anyhow. Thank you very much for you attention.

Prof Akio Morishima,
President,
Institute for Global Environmental Strategies (IGES)

Good morning ladies and gentlemen. I am very happy to host this big event, Climate Policy 2005 and Beyond. I represent the Institute for Global Environmental Strategies which has co-organised this symposium with the Wuppertal Institute.

I would like to use this opportunity to thank the German government and the government of Northrhine-Westphalia and the Environment Ministry of Japan for supporting this conference.

While Prof Hennicke was talking 2040–2050, I will concentrate on the time until 2012. Presently, we are still tackling our minus 6 percent Kyoto reduction goal. If we can achieve a 6 percent reduction, then we can proceed and may be able to reduce 30 percent or even 50 percent by 2050. That is what I am hoping.

Around 1990, before the Kyoto Protocol was signed, Japan was part of the initial members of the Climate Convention. In 1990 Germany was unified and around that time, Japan's energy efficiency was about double that of the United States and Germany. In 1973, Japan suffered from a serious oil shortage that became known here as the "oil shock". So since the late 1970s and into the 1980s, Japanese industry increased its energy efficiency so by the end of the 1980s Japan was leading in energy efficient technology. Around 1990 Japanese government and industry thought in comparison with other developed countries that it would be good for Japan to maintain the 1990 energy efficiency level up to year 2000 despite economic growth. People thought at the time, that CO_2 emissions could be held at 1990 levels. Based on that assumption, the Japanese government made an action plan to arrest global warming in 1990. More than 100 different measures were devised. These measures were concentrated more on technology and not on social instruments. Some of the measures were related to urban planning, transportation and lifestyle.

In 1997, the Japanese government hosted the Third Conference of the Parties in Kyoto. Just before the Kyoto Protocol was signed, Keidanren (a nationwide business association resolving its problems through committees) that covered 70 percent of Japanese industry, made a rough commitment. Since 40 percent of CO_2 emissions come from industry, if Keindanren does something, then our reduction policy could be effective. The government, based on Keidanrens decision, deliberated the policies.

At the time, the Japanese government knew, that Europe was proposing a 15 percent reduction target, but the Japanese government, as host, was offering a 2 percent reduction. However, at the Kyoto conference, Japan found out that it was supposed to achieve a 6 percent reduction. So the big question was, how can we meet this target? Since then the policy was never directed beyond Kyoto but rather, how to meet this 6 percent target. That is still the central issue. Also, in 1990 our assumption was that we could build 20 more nuclear power pants — but because of strong opposition by the public, only 4 new nuclear power plants were built. That means that 16 nuclear plants are not available. So Japan changed from 100 percent oil to 1/3 natural gas, 1/3 nuclear and 1/3 oil.

It is very difficult, furthermore, for Japan to increase its supply of natural gas because of the geographical location: There is no pipeline. Wind power is also a difficult option because of the typhoons. Even though Japan has the world's highest production of solar panels, still the proportion of renewable energy in Japan is at little more than 1 percent. In 2010 we will have only achieved 3 percent. So we try to become more energy efficient and the result was the so called Top Runner Programme. This is a programme which gives incentive and introduces strict energy saving standards in appliances, vehicles, machinery etc.

In June 2002, the Kyoto protocol was signed. We soon realised that with the current measures, the target was not to be reached. As a result, in 2004, the Kyoto Achievement Plan came into being. Prime Minister Koizumi has forced different ministries away from making their own policies to working in a more integrated way on policy. Japan emitted a total of 1.2 billion tons of CO_2 in 1990 and in 2003 this was exceeded by 8.3 percent, and in 2004 7.4 percent. If we continue with business as usual, we can only guess at what it would be in 2010.

While the Japanese economy is now recovering, we find that in the transportation, building (offices) and lifestyle areas, the CO_2 emissions are increasing at an alarming rate whereas in the industry sector they are stable or even on the decrease. Even if we implement the Kyoto Target Achievement Plan we can reduce up to minus 0.5 percent and then with sequestration we can reduce 3.9 percent. Through the flexible mechansisms and joint implementation, we can achieve another 1.9 percent reduction. It is very important for Japan to meet the Kyoto target and that is the reason why there is no time to think beyond 2012.

Transportation has experienced an increase in emissions by 20 percent, the commerial sector (offices) 36 percent and private households 28 percent. Policy should be focused on these sectors. That is the reason why we are

now discussing whether or not an eco-tax is effective and how effective local government can be in influencing people's behaviour. But the industry is heavily against an eco-tax. So there is a problem — the government proposes good ideas but they are not accepted. So what is to be done?

Until 2004 we took certain measures, made inventories and discovered we could not achieve the Kyoto target, therefore we are now implementing the amended version of the original measures that include the discussion of an eco-tax and other policy mixtures. Until 2008 we hope that we will have come to the stage where we can achieve the Kyoto target.

A conference such as this one constitutes one of the stepping stones to finding the solution to the climate problem and disseminating good ideas. Thank you very much.

Part I

The State — Governmental Players in Climate Change

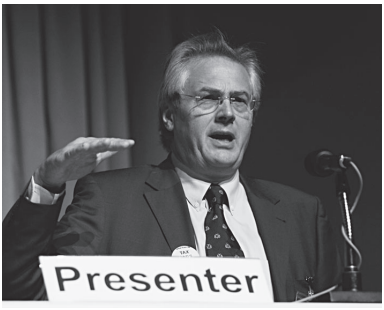
Eco Tax Reform
Chair: Prof Akio Morishima

Emissions Trading
Chair: Dr Hermann E. Ott

Eco Tax Reform

A German Success Story — Impulses for Japan?

Dr Anselm Görres,
Green Budget Germany



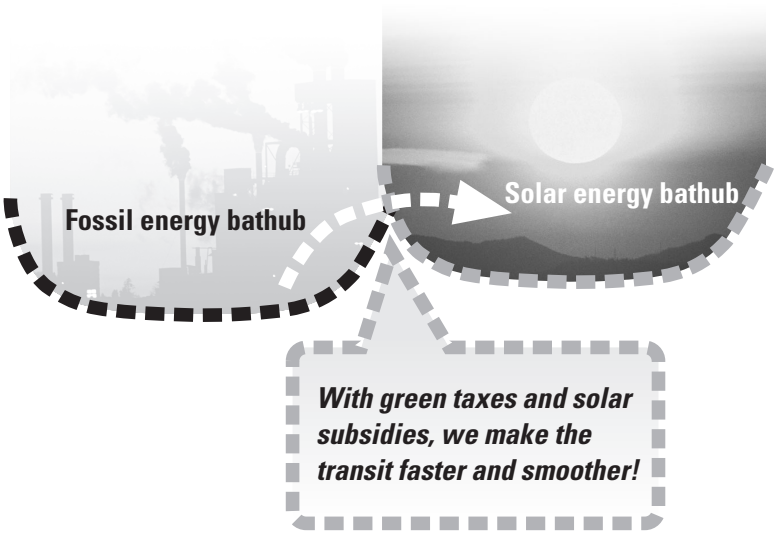
Everybody in this room agrees that we cannot go on with business as usual with the curve of CO_2 consumption continuing upward as it is. We all have a responsibility to balance this curve. With the increasing oil price, we have now come back to the price of oil as it was in 1870.

Every engineer knows the bathtub curve. For every engineer, a bathtub curve is a clear sign to get out of the tub before it is too late. The bathtub for fossil fuels is coming to an end. The good news is that a new bathtub full of renewable energies is well under construction. The challenge is how to get out of the old bathtub and into the new one. We need instruments to do this. The most important instruments to get from the old bathtub into the new one are green taxes and green subsidies. These instruments can help us to make the transition faster and smoother. We need to send the correct message to the people that we are in a transition period. This will happen as soon as the old energy becomes so expensive that the new green energy of the future will become more competitive. There will be the same price development as with the oil prices since 1870; prices for renewable energy will decrease much faster than they did in the past.

In Germany, the revenue gained from the eco-tax comprises almost 4 percent of the GDP whereas in Japan it is less than half of that at 1.7 percent. For this reason, we hope that Minister Koike will be successful with her proposal to introduce the eco-tax. Japan has a 6 percent reduction target. To date, unfortunately, Japan went in the other direction with a 7.4 percent increase. This increase in CO_2 emissions has created a gap in the last years since 1990 of 13.4 percent. It is a great challenge to close this gap

Transition fossil to solar

Our only problem is to step from the old, fossil bathtub into the nice new bathtub of solar energy…



in the few years remaining until the end of the decade. Germany has almost reached its reduction target aided by the fortunate circumstances of Reunification, which brought with it the collapse of the East German industry. The only two major countries in the entire world that have the possibility to reach their Kyoto targets are Great Britain and Germany. Kyoto is a city in Japan and thus Japan should pay particular attention to fulfil the agreements that were negotiated there.

Helpfully, an eco-tax has been proposed last week in Japan, which allows for a comparison between the German Eco-Tax Reform and the Japanese model. The Japanese model includes almost all types of energies including transport energy. Germany has phased its eco-tax over a span of five years where Japan enforces only a single step in one year. The total volume in Germany is 19 billion € and the Japanese plan foresees 5 billion €.

There is a big difference in the use of the revenue. Germany basically had to recycle its revenue because it did not want to increase the tax quota. 90 percent was recycled to reduce labour costs whereas the Japanese model

foresees spending the revenue for green projects, 50 percent for forests and 50 percent for renewable energy.

The German plan has managed a reduction of 22–24 million tons of CO_2, which is about 2.4 percent of our Kyoto target. We started with € 34 billion in eco-tax revenue. Very small steps were then taken over the next years and in five years time revenues of almost € 20 billion were attained. A road toll for trucks was introduced which brought another € 3 billion and now Germany collects € 56 billion in eco-tax revenues. Taking into account the other green taxes, the total goes up to € 90 billion. What was done with the money? 3 percent went into green projects, 9 percent went into the budget and the largest part went into the pension system. It was in many ways a recycling process; the money went from the economy to the government, the government gave it to social security, thereby reducing labour costs.

It is interesting to look at all the economic levies, not only taxes. Germany takes in almost € 90 billion in green taxes and we spend € 6 billion on green subsidies. But it is important to remember that there are also harmful subsidies in place. There are € 26 billion working in the opposite direction. The main job of the next government should be to work on reducing these harmful subsidies. Indeed, this is a major challenge for the entire world.

The over-all effect of the green taxes was as expected. There was a reduction in fuel consumption, in CO_2 emissions, the over-all tax burden went down, pension costs went down and industrial output rose. Therefore, the argument from business associations that industry would be hurt did not stand. Fuel imports were also reduced. More car sharing took place, there was more energy efficiency, more gas powered cars etc. So all the right things went up including the creation of about 1/4 million jobs. Looking at the time span of these six years, the US, who has its own oil and is the worlds biggest oil importer, have increased their oil imports by 21 percent where Germany was able to reduce its imports of fossil fuels in the same period by 14 percent. It is probably a more intelligent strategy to reduce oil consumption rather than fight wars over it.

For those of you who are afraid that progress is so slow in Japan, in Germany it also started very slowly. So slowly that some of us never believed that it would happen. But now it has taken only 20 years to go from the textbooks of the economics professors to the German law books. That is a reason for optimism. In order to push such a tax, it is imperative to have a courageous government. Since green taxes are not to everybody's liking, you must be prepared to confront opposition. Most of the counter-arguments can now be refuted: there was no threat to competitiveness, we are still the world export leader, our industry was helped by the eco-tax,

Germany was never isolated and it did not hit the poor people harder than the rich.

In Germany's case, the revenues have not been spent so much on green projects, as that would have driven up the tax quota. Of all the taxes we have in Germany, the eco tax has the lowest administrative costs. This proves that the argument about bureaucracy was clearly wrong. It is interesting to see that the tax with the lowest bureaucracy gets the highest criticism.

What are the lessons to be learned? Economically and environmentally this tax did all that it was supposed to. The positive effects of this tax should have been communicated much better. This tax pushed the new technologies of the future; it created 150,000 new jobs in the renewable energy sector as opposed to 107,000 in problem energies. We should be more innovative with our communication.

In September, the red-green coalition government lost the election, but the conservatives did not win it. There is no anti eco-tax majority and we have a new government coalition that has just re-stated the priority to continue on the path of efficiency. What will we see? We will probably see that Germany starts thinking about air traffic taxation. In the long term, there might be an expansion of the highway toll, and a reform on the vehicle tax. There will probably be a reduction on harmful subsidies. You will not see a gross continuation of old ideas.

What advise would we give Koike-san, the Japanese Environment Minister, if she asks us how to introduce the eco-tax? First, congratulations, this is a very courageous step. The opposition from METI is very tough. But Japan is an island and that is very advantageous when it comes to transport tax. In Germany, the car owners go to Austria, Luxembourg, or to Poland because the gas is cheaper there. No Japanese car driver can leave Japan.

The Japanese tax rate is much lower, but the national debt is much higher than Germany's. So why not spend 1/3 for debt reduction, perhaps 1/3 for recycling back to the people in the form of social security and 1/3 for green budget?

If we want to make progress, we need a combination of ecological awareness, economic wisdom in the sense of Adam Smith and also political courage. In that sense, I am very happy that Ms Koike is still a part of the government. She is one of the three ministers who survived the reshuffling and I hope her eco-tax plan will also survive the reshuffling that will come in the next months.

Eco Tax Reform

Which German Experiences with the Eco-Tax are Relevant for Japan? Draft Plan for "Ecological Tax Reform" in Japan

Tsuneo Takeuchi,
Research Advisor IGES

1 Positive outcome and existing challenges of the ecological tax reform (ETR) in Germany

The German Institute of Economics (DWI) has conducted a survey on the outcomes of the ETR in Germany by using an empirical calculation model. The research was commissioned to DWI by the Federal Environment Agency of Germany. The table below shows a result of this analysis in terms of how the CO_2 emission was reduced and how employment and GDP have grown annually under the ETR — in comparison to an estimated would-have-been outcome of the respective indicators if the ETR had not been implemented.

Table 1: The outcome of the ETR in Germany (German Institute of Economics, June 2005)

	1999	2000	2001	2002	2003
CO_2 emission	–0.55	–1.33	–1.75	–1.95	–2.39
Generated employment	+0.64	+0.76	+0.67	+0.41	+0.76
GDP growth	+0.37	+0.47	+0.44	+0.29	+0.45

The above figures indicate the difference in percentages.
Source: Gesamtwirtschaftliche Effekte der Ökologischen Steuerreform, Forschungsprojekt im Auftrag des Umweltbundesamtes, Berlin, 03.Juni 2005. (The total effects of the ETR on the German economy, a research commissioned by the German Federal Environment Agency, Berlin, June 3rd, 2005)

The ETR has been in force in Germany since 1999. Much discussion was going on about its effects until their positive aspects have come to be empirically proven, such as the reduction in CO_2 emission as well as growth in both GDP and employment. On the other hand, the German version of the ETR has the following weak points:

- The taxation rate does not reflect the different levels of CO_2 emissions at each energy source.
- The extent of reduction in income tax and pension premium is small. As the reduction of the pension premium is in fact hardly felt, consumers and corporations perceive the ETR as a pure tax increase for the environment.
- The contribution to the pension program becomes unequal among different sectors and corporations because of its flat reduction rate.

Taking the above data and the three weak points of the German ETR into consideration, we would like to propose an ETR draft version for Japan that should contain some improvements of its German counterpart.

2 Draft for ETR to be introduced in Japan

First year of implementation

The Following actions should be taken in the first year following the introduction of the ETR (here assumed to be in 2006).

- INTRODUCTION OF CARBON TAX
- NEUTRALIZATION OF THE TAX EXPENSES for individual households and corporations caused by the carbon tax by way of reducing exactly the same amount of expenses for the pension premium (contributed both by the insured persons and their employers).

INTRODUCTION OF CARBON TAX

The carbon tax should be imposed on each final product of all fossil fuels according to its CO_2 emission coefficient. The taxation rate per one carbon ton should be set at 45 ¥ (JPY). The final products of fossil fuels subject to this taxation are gasoline (taxation rate at 28.6 ¥/liter), crude petroleum category A (at 34.8¥), city gas (at 25.3 ¥) and coal (at 28.7 ¥), to be named among altogether 18 items. Naphtha (petrochemical ingredient), coking coal and natural gas (as raw material for city gas) are not burnt (no CO_2

emission) and are therefore not subject to taxation. The obligation to pay this tax should fall on the consumers of the final products of fossil fuels. However, the end sales units should be obliged with the tax with respect to gasoline, light oil, city gas, LPG (liquefied petroleum gas), kerosene and electricity. The income of carbon tax thus raised is estimated to reach JPY 36 trillion.

Neutralization of tax expenses

For the next step, the carbon tax expenses for individual households and corporations caused by the carbon tax should be neutralized by reducing their expenses on pension premiums (regarding the government pension plan, employee pension and mutual aid association pension). If for a corporation the amount of carbon tax expenditure exceeds the pension premium expenses for its employees, the difference should be 100 percent refunded. As to households, a flat 27 percent reduction (a calculated flat average ratio)

Table 2: Net carbon tax income = Reduction in pension premium
(Respective main industry sectors)

Industry sector	C-tax income (calculation)	Pension premium (calculation)	Refund amount	Net C-tax income = Reduction in PP
Construction	1,644	12,613	0	1,644
Paper	4,792	665	4,127	665
Chemistry	7,863	1,345	6,518	1,345
Furnace	5,647	899	4,748	899
Steel	24,392	547	23,845	547
Machinery	5,467	12,185	0	5,467
Electricity consumed by utilities	7,693	547	7,145	547
City gas consumed by utilities	500	160	340	160
Service (automobiles included)	26,082	87,101	0	26,082
Railway	1,221	730	492	730
Aviation	1,592	160	1,433	160
Logistics	13,122	4,013	9,109	4,013
Forestry/ Fishery	5,077	5,175	0	5,077
Households (automobiles included)	39,097	143,072	0	39,097
Total	163,637	280,651	66,601	97,038

Unit: JPY 100 M

in the pension premium expense should compensate the carbon tax. In total, the net carbon tax income (JPY 9.70 trillion), which should be equivalent to the total amount of reduction in pension premium, can be obtained by deducting the refund amount (JPY 6.66 trillion) from the gross carbon tax income (JPY 16.36 trillion).

Five years term after introduction of ETR

The Following actions should be taken in the five years after the introduction of ETR in Japan.

- The carbon tax rate should be increased by 1.8 percent annually, so that the decrease in carbon tax income in relation to the reduction in CO_2 emission can be compensated and the tax income remains constant.
- The system, which defines the carbon tax amount to be in direct proportion to the amount of CO_2 emissions, should be maintained under the basic condition that the expenses resulting from the carbon tax will be neutralized by way of pension premium reduction.

3 The estimated effects of the Japanese version of ETR

The following table shows the anticipated effects of the ETR on the Japanese economy in the year 2011, using a macro-econometric model, under the assumption that the ETR will be introduced in Japan in 2006. The estimated indicators are CO_2 emission, GDP and employment.

Table 3: The estimated effects of the Japanese version of ETR (in the year 2011)

CO_2 emission	Minus 0.4 % in comparison to the year 1990	
GDP	JPY 641 trillion (1.5 % increase compared to non-implementation of ETR)	
Employment	51,650 T (Increase of 1,460 T compared to non-implementation of ETR)	
Employment increase due to employment cost reduction		+ 123 T
Employment increase due to rise in energy costs		– 14 T
Employment increase due to growth in GDP		+ 1,351 T
Total employment increase		+ 1,460 T

T: 1 thousand

4 Unification of revenue source for the basic pension system through implementation of the ETR in Japan

The total expenditure for the basic pension system amounts to approximately JPY 15 trillion, which is partly contributed by the premiums for employee pension and mutual aid association pension (approximately JPY 7 trillion), partly contributed by the premium for the government pension plan (approx. JPY 2 trillion) — these two parts alone make up approx. JPY 9 trillion — and partly presently defrayed out of the National Treasury (that means from tax; JPY 6 trillion). The ETR enables to substitute the roughly JPY 9 trillion of total pension premiums (paid for employee pension, mutual aid association pension and the government pension) with the income from the carbon tax (JPY 9.7 trillion), and henceforth to abolish the pension premiums totally. In this way, the revenue source for basic pension together with the JPY 6 trillion allotted presently from tax becomes solely tax-based. The revenue source for the basic pension system can be unified as a result. This would enable Japan to solve the current problems around the "levying method" of the present pension premium such as default, the shifting of its load onto the salaried workers, inequality deriving from women's employment forms and merit gaps between different generations.

Table 4: Revenue sources for basic pension plan (as of year 2002)

	EP and MAAP	Gov. pension plan	Total	(C-tax substitution)
Premium	7	2	9	9.4
National Treasury	4.5	1.5	6	
Total	11.5	3.5	15	

EP and MAAP: Employee pension and mutual aid association pension
Unit: JPY 1 trillion

5 A charging system suitable to the aging Japanese society

The national burden rate (tax burden rate plus social security burden rate) was 35.9 percent (with tax burden rate 21.5 percent plus social security burden rate 14.4 percent) in 2005. Based on the tax income in 2003, the tax on "good items" such as income and capital makes up 77.7 percent, on "bad items" such as burden on the environment 11.0 percent, and that on

"neutral items" such as the consumption tax 11.3 percent of the total taxation amount. An aging society with a decreasing birthrate becomes increasingly less able to depend so much on the taxation of the "goods". The introduction of ETR to Japan would result in a reduction of the taxation of the "goods" down to 70.7 percent and in the increase of the tax on the "bads" to 18.1 percent. The contribution of JPY 9.7 trillion might appear indeed small if put against the total national burden of JPY 136.1 trillion. The change that the ETR can bring is little — but it is nevertheless significant, as it helps to form a new system of the national burden that adapts to the conditions of an aging society.

6 Summary

This survey has tried to demonstrate that the Japanese ETR enables the state to reach the goals of the Kyoto Protocol, to generate about 1,500,000 jobs, to unify the revenue sources for the basic pension plan, so they are 100 percent tax-based, and to help forming a new national burden system suitable to an aging society. The efforts to create a system friendly to our environment (with focus on reduction of CO_2 emission) can lead to the overcoming of economic and social challenges.

Emissions Trading

Return for Climate and Business

Franzjosef Schafhausen, German Federal Ministry for the Environment

The story of emissions trading in Europe and Germany is a long one and it continues as we are on the brink of implementing the second allocation phase 2008–2012.

Emissions trading in Germany and Europe is an entirely new instrument. We have no experience, only poor data was available and with no infrastructure we have a time span of only 2 to 2 1/2 years to implement it.

The present emissions trading scheme is based on policy therefore, at the moment, it does not fully reflect economic ideals. Catherine Day, Director General of the EU Commission responsible for emissions trading and implementation, said at the beginning of last month at a conference in London: „We have begun a chain reaction which is changing business culture."Carbon Dioxide has moved out of the domain of the Environmental Department into the Board Room. Indeed, we had very intense political discussions during the last two years when we tried to implement the emissions trading scheme in Germany. These discussions were held not only with the environmental officers but also with the heads of the companies. Money is a very important thing for companies. Now that CO_2 has a price, the CEOs are taking great interest in the emissions trading scheme not only in Germany but also in the other Member States. It is no longer only an environmental issue, it is a question of competition and economy.

Targets are the base of an emissions trading system. Targets are the necessary first step. We have many targets and timetables in Germany dealing with climate change policy. We must reduce our green house gas emissions in the period 2008 to 2012 compared to 1990 levels by 21 percent. We also have a medium target of 40 percent under the condition that the EU will meet 30 percent by the year 2020. But there are also targets on renewable

energy, on combined heat and power production and on energy efficiency. The EU system is a so-called cap and trade system. This means the total volume of emissions — the so-called cap — must be specified. A framework condition for a transparent and liquid market must also be specified. This is indispensable. A clear and transparent monitoring system must be defined so that the decisions as to where, who, when, how and how many emissions are reduced is not taken by the government, but by the markets. The beauty of this system is that it is cost efficient.

Under the Kyoto Protocol there is an international emissions trading system, but it is not the same as the EU emissions trading scheme. The international emissions trading system trades between countries, between annex-one parties that is to say the industrialised world. All green house gases are tradable, not only CO_2, but also CH_4, N_2O and the F gases. This goes into effect at the start of 2008 and must be distinguished from the EU trading scheme. Here the trading takes place between companies, between operators and only CO_2 is traded. The EU Emissions Trading Scheme (EUETS) is a mandatory concept based on absolute targets; it is installation oriented starting with absolute CO_2 caps comprising two phases: the so called pilot phase 2005–2007 and the second phase 2008–2012. It is necessary for every member state to draw up a so-called National Allocation Plan for all sectors not only for energy and industry but also for private households and transport. Auctioning is only partially allowed: 5 percent in the first phase and 10 percent in the second. The role of the governments is to allocate the emission allowances.

Almost 60 percent of the CO_2 emissions in Germany are covered by emissions trading. The legal background of the EUETS is the so-called National Allocation Plan (NAP), which gives some information as to the creation of the allocation rules and criteria. There are monitoring guidelines, directives on the registries, how to register the transfer of allowances from one country to another and within the country, as well as the linking directive. The linking directive is necessary to combine joint implementation and CDM to the emissions trading scheme. At the outset, the Commission was not prepared to link the emissions trading scheme to the other instruments within the Kyoto Protocol. However, the member states asked for a linkage and operators are now able to use the emissions certificates CERs (Certified Emissions Reduction) and ERUs (Emission Reduction Units) generated through joint implementation and CDM projects to comply with the requirements under the emissions trading scheme.

Whoever is engaged in an activity listed in the Annex I of the directive receives a permit. This permit is not tradable. What is tradable, are the

allowances. For every ton of CO_2 emitted, the installations under the emissions trading scheme have to provide an allowance. We have two categories of installations under the EUETS: 1. All installations providing power heat, or combined heat and power are covered by emissions trading. 2. All energy intensive production such as lime, cement, steel, paper and pulp, glass is also covered.

Why is emissions trading so important for the German business sector? 99 percent of the public energy sector is covered by emissions trading, 96 percent of the industrial energy sector, and more than 60 percent of the production sector. This amounts to 500 million tons or 58 percent of the entire CO_2 balance in Germany. What is very new in German climate policy are the mandatory targets as contained in our allocation act. Not only are there targets for energy and industry but also for private households and transport for both periods. There is a clear framework for industry and for the other sectors. However, you will find 48 combinations of allocation rules possible from three economic viewpoints. This is a nightmare and we have to work on that in order to make it more transparent and simple for the second allocation period.

As to the structure of legal implementation, there are three acts and three ordinances in place in Germany and we are working on the second phase. Many of the 15 member states of the EU are far removed from their targets. There is a lot of potential in the European Union with Spain's 70 million and Italy's 90 million tons. The question is how to bring all the players together. Will the accession countries provide allowances on the market and what will happen with the market price? The price at the moment is very high. A ton of CO_2 costs € 24. The options are rather positive because some scientific studies show that there are a lot of opportunities at a very low cost or even negative cost. There is a new study from Lower Saxony showing that industry could benefit a lot from emissions trading. If you compare the costs of emission reduction with the present price of the allowances, they could earn more or less 3 million € a year.

In Germany we would like to use the so-called flexible mechanisms, joint implementation and CDM. We would like to focus on energy efficiency and renewable energies. There are more than 120 projects under preparation with Germany as investor and Germany as host country. If you summarise all the money which is available you will find that it amounts to ca. € 2 billion.

Emissions Trading

What are the Implications of the German Experience in Introducing an Emissions Trading Scheme for Japan?

Rie Watanabe, Research Associate, IGES

This presentation reviews the Japanese voluntary emissions trading scheme (JVETS) and discusses implications of the German experience in the introduction of a mandatory emissions trading system for Japan, based on the examination of the process for Germany to adopt the EU directive on emissions trading.

Overview of Japanese GHG emissions trends and its current climate policies

In 2003 Japanese GHG emissions had increased by 8.3 percent since 1990. Therefore, Japan has to reduce its emissions by at least 14.3 percent, in order to achieve the 6 percent reduction target in article 3.1 of the Kyoto Protocol.

In the framework of the step-by-step approach, the new guideline to promote measures to cope with global warming adopted in 2002 with the ratification of the Kyoto Protocol, Japan conducted the first review of policies and measures to achieve its Kyoto target in 2004. Based on the review, the Kyoto Target Achievement Plan was adopted by the cabinet in April 2005. This Plan stipulates the following reduction targets: 6.5 percent by policies and measures (4.8 percent out of 6.5 percent in energy-related CO_2 emissions; 15 Mt in the industry sector, 31 Mt in the household sector, 16 Mt in the transportation sector, and 4 Mt in the energy combustion), 3.9 percent by sinks, and the rest (1.6 percent) by the Kyoto mechanisms. The following policies and measures to achieve the above reductions were discussed: environmental tax, emissions trading, mandatory emissions reporting scheme,

further promotion of energy efficiency measures including a top-runner scheme, reinforcement of voluntary approaches, and the effective utilization of the Kyoto mechanisms.

The Japanese voluntary emissions trading scheme (JVETS)

Against the above background, the Japanese voluntary emissions trading scheme (JVETS) was introduced in 2005, under the initiative of the Japanese Ministry of the Environment (MOE). The JVETS is a scheme supporting the industry, committed to the CO_2 reduction targets, in return for receiving subsidies, to cover one-third of their costs spent on emission reduction projects conducted during FY2005, to a maximum of 200 million yen. Participants report their emissions from 2002 to 2004 (these must be verified by organizations appointed by the MOE) and register the estimated emissions reduction amount for 2006. The companies will receive allowances corresponding to the difference between the average emissions from 2002 to 2004 and the estimated CO_2 emissions reduction in April 2006, and trade allowances throughout FY2006. They are required to surrender the allowances of CERs corresponding to the actual emissions in FY2006 verified in April/May 2007. In the case of non-compliance, the subsidy should be returned to the MOE and names will be published. This scheme covered 34 companies with 1.3 Mt CO_2 emissions in the base year, corresponding to around 2 percent of the total emissions from the industry sector and less than 2 percent of 15 Mt, planned reductions from the sector. The scheme covers only a small portion of emissions from the industry sector.

Benefits and burdens of the emissions trading scheme

Emissions trading brings the following benefits: Firstly, it controls the total emissions covered by the scheme to the volume set in advance, therefore effectively achieving the numerical targets set in the Kyoto Protocol and stabilizing GHG concentrations. Secondly, it is effective not only as a domestic mitigation policy but as a Kyoto mechanisms utilization policy through linking credits yielded from the CDM and JI projects to the emissions trading scheme. Thirdly, it optimises reduction costs by allowing companies who emit more than their allocation to achieve their targets through purchasing allowances reduced by other companies whose reduction costs are cheaper. Furthermore, it provides incentives for companies to

develop and introduce reduction technologies. Emissions trading is therefore a suitable instrument for Japan to control its domestic emissions. While the introduction of emissions trading brings benefits, there are demerits, such as in determining allocations to individual installations and making the adjustment to already existing reduction measures.

Adjustment with existing policies and measures — one of the major factors to hamper the introduction of emissions trading in Japan

Both Germany and Japan have tried to mitigate emissions from the industry and energy sectors through a voluntary approach. The Japanese Keidanren voluntary action plan covers around 76 percent of CO_2 emissions from the industry and energy sectors with sector-based targets, which were aggregated to a target to stabilize emissions from a entire set of companies participating in Keidanren at 1990 level. The BDI voluntary declaration covers around 80 percent of CO_2 emissions from the industry and energy sectors with sector-based targets, which were aggregated into a target to reduce relative emissions by 20 percent between 1990 and 2005. Japanese and German industries have so far made progress in achieving their targets with their voluntary approaches.

It is expected that the shift from voluntary approaches to emissions trading will bring frictions and this is one of the main factors impeding the introduction of emissions trading in Japan. Firstly, the way to set a target is changed from the voluntary bottom-up approach to mandatory allocation/auction. Secondly, in the German and Japanese cases, a collective target is changed to an individual target. Thirdly, compliance is changed from voluntary to mandatory. Targets, compliance costs to achieve the targets, and compliance itself of individual companies will become clear. Therefore, the German experience has implications for Japan to overcome the above frictions and introduce a mandatory emissions trading scheme.

Interviews with more than 40 EU and German stakeholders revealed that a majority of German stakeholders, especially the industry, were opposed to the introduction of an emissions trading scheme. Reflecting their interests, Germany tried to include provisions to continuously use a voluntary declaration after the introduction of emissions trading until the end of the EU level discussions and to adopt the emissions trading directive, such as the voluntary participation, sector-based opt-out, and pooling. Therefore, the German agreement on the adoption of the emissions trading directive resulted not from the change of the stakeholders' positions but rather due to

external pressures, inter alia, and other Member States who were in favour of the scheme. The emissions trading directive could have been adopted under the qualified majority-voting rule without the German agreement.

Implications for Japan

The first implication is the necessity of an external pressure to overcome the friction caused by the shift from voluntary approaches to emissions trading. As Japan is not exposed to regional pressure as Germany is, it is understandable that Japan faces more difficulty in the introduction of mandatory emissions trading. On the other hand, Japan is exposed to international pressures that emissions trading schemes were/are established in many Kyoto ratifying countries, such as the EU, Norway, Switzerland and Canada, and that the international scheme will be launched in 2008.

The second implication is the necessity to accumulate trading experiences and to find a scheme reflecting stakeholders‘ interests. Germany could not present convincing proposals to enable a co-existence of voluntary approaches and emissions trading for a lack of accumulated knowledge of emissions trading and had to agree on a scheme that did not necessarily reflect German internal stakeholders‘ interests. If it does not identify a desirable scheme soon, this implies the possibility that Japan may have to agree on the international emissions trading scheme that does not necessarily reflect its interests.

The third implication is the emissions trading introduction process. Germany established a working group on emissions trading in October 2000 with the participation of all relevant stakeholders, including business, ministries, political parties, NGOs and state governments. The group examined all aspects of emissions trading under the chairmanship of the German Environment Ministry. As described above, discussions at the working group did not change stakeholders‘ positions, however, they were effective in sharing information and stimulating discussions among all stakeholders. Emissions trading has a large impact on the sector covered by the scheme. Furthermore, caps for sectors not covered by the scheme will be also set once a cap allocated to the sector covered by the scheme is determined. Therefore, 1) emissions trading as an adequate instrument to control emissions in the industry sector, 2) the measures taken to control emissions from other sectors, and 3) the balance between 1) and 2), must be discussed, to ensure the participation of all stakeholders in discussion process. Japan should also consider an appropriate discussion process, such as holding multi-stakeholder dialogues.

Part II

Beyond the State — Non-Governmental Actors in Climate Policy

Chair: Franzjosef Schafhausen

Business Sector

Providing Solutions for Climate Change

Dr Lutz von Meyerinck,
Head HSSEQ, BP Germany

BP is a global energy provider and a major provider of fossil fuels. Our challenge therefore is what we call "lower carbon growth". BP has for years recognized the global environment, and climate change in particular, as an element of being a responsible company with a license to operate. Thus we are leading the debate on climate change and have developed the worlds' first global emissions trading scheme.

We believe that carbon will be priced in the future and that there will be a market for technologies that reduce emissions. It is important to BP that the EU Emissions Trading Scheme (EU ETS), as a market-based instrument, delivers environmental benefits in the most cost-efficient way, and as such be seen as a success. The EU ETS is a potential foundation for a global GHG trading, using linked systems.

A well functioning EU ETS is imperative to BP. In our view the focus for Phase II should be on remedying existing problems, increasing transparency, reducing the compliance burden (particularly for small installations), simplifying and harmonizing implementation across the EU 25 and improving the cost effectiveness of the ET scheme before increasing its complexity or reach in terms of new sectors and gases.

BP shares the view that we should aim to limit green house gas concentrations in the atmosphere and to stop global temperatures rising more than 2 °C. This is thought to be achievable if concentrations of greenhouse gases stabilise in the 500–550 ppm range. Quantifying this goal, based on today's best available science, provides a focus for action. Princeton University with support of BP and others has produced a simplified representation of a reasonable scenario taken from complex climate models and growth projections.

Carbon capture and storage (CCS) projects can play an important role in reducing carbon dioxide emissions. We see a real and huge potential to reduce greenhouse gas emissions with CCS technologies.

BP together with partners is developing the world's first industrial scale project to generate electricity, using hydrogen manufactured from natural gas, to create "Decarbonised Fuels", reducing carbon dioxide emissions by around 90 percent.

Business Sector

Providing Solutions for Climate Change

Yoichi Takahashi, Director of
Environmental Headquarters, HITACHI

As of last year, the sales of the Hitachi Group reached 9 trillion YEN with 350,000 thousand employees. The share of output accounts for 1.7 percent of the total GDP of Japan and we consume 1.5 percent of the total energy used in Japan.

In order to comply with its environmental vision, Hitachi has adopted production methods that produce with less environmental impact. We favour energy efficient product development, supported by employees' training as well as the creation of a new, more environmentally friendly business model aimed at reducing the environmental burden.

The Hitachi Group consists of about one thousand fuel related companies and we belong to more than ten industrial associations. The most closely related is the Japan Electrical Manufacturers Association (JEMA).

In order to confront these challenges, five industrial associations joined forces to understand the reality, to formulate policies and to implement measures according to those policies. At the same time we measure the achievement against the target. The major challenge for the industry is how to deal with the CO_2 emissions resulting from the new products introduced into the market. Compared to the conventional products, the new products have achieved a remarkable performance in terms of the CO_2 emissions. In order to further intensify our efforts against global warming, the five related associations are coming up with solutions for global warming through consultation with the Japanese government, Keidanren, as well as communicating with the public and the member businesses.

There are 500 enterprises belonging to five associations and their performance is automatically gathered via the Internet. This system was introduced for the first time this year and can collect information with regards to CO_2

emission from 80 percent of the industry. They are subject to an evaluation by a third party organisation. The actions taken are: co-generation, energy efficiency development as well as model shift in logistics.

Specifically, the Hitachi Group defined two targets: 1.25 percent reduction per production unit of CO_2 emission compared to 1990 and 2.7 percent reduction compared to 1990 in terms of the total CO_2 emissions. In 2004, we achieved a 24 percent reduction in terms of production unit. After 2000, thanks to the measures taken, in terms of total emissions per unit we have achieved remarkable results. However, further actions must be taken. We reviewed the voluntary action plans, and then the PDCA cycle was introduced to check and further improve our actions. Energy saving activities were pursued across the Group through the installation of energy saving equipment in all factories. The products that we offer must be energy efficient. We are also looking into CDM taking advantage of the products and the technology of Hitachi.

If any site or section of the Group fails to achieve the goal, then the top management takes the leadership in implementing and improving measures. Let us take as an example co-generation: we have identified 40 sites where co-generation systems can be installed and four of them have already introduced them. More systems will be introduced on other sites as well. Our strength is in gas turbines. Therefore, the introduction of a new system as well as the replacement of the products is very important. We are planning to introduce two new gas turbines with 30,000 KW capacity. If all the sites would install this system, there would be an energy saving effect of 5–10 percent. In order to become more environmentally friendly, environmental indicators have been newly introduced. The new products are more functional in terms of the performance and more energy efficient. We are also calling for the replacement of existing products through new, more energy efficient ones. The efficiency of air conditioners has been improved by 60 percent compared to 1990. Energy efficiency in Japan for air conditioners has improved by 40 percent while the number of installations has increased by 20 percent. If consumers replace their old models with the new ones, they can also contribute to a better environment.

In order to fulfil our social missions, we will continue to challenge the goal of carbon reduction and neutralising chemical substances. When the products are balanced through carbon cancelling, we can further contribute to an improved environment.

Hitachi Group as a whole will continue its efforts to contribute to the prevention of global warming.

Business Sector

Providing Solutions for Climate Change

Andreas Villar,
Wuppertal Institute

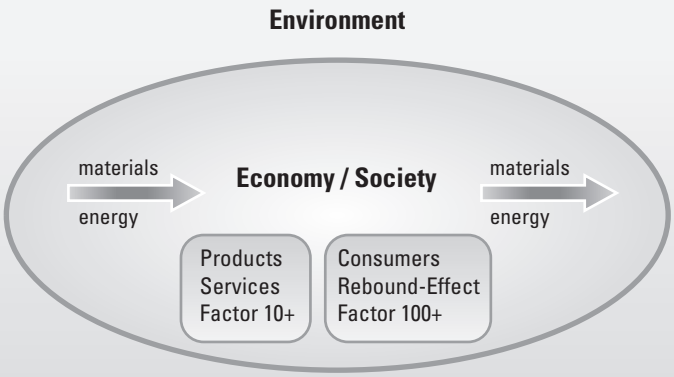
Combating climate change is one of the major issues of the 21st century. It is to be regarded as the one key issue of sustainable development, as it illustrates the notion of "equity", both within and between generations as well as the need to change current patterns of production and consumption. When analysing the global discussion on climate change, it can be observed that the current state of the art discussion is very focused on emissions and finding solutions on how to significantly reduce them in the next decades. Many companies are exploring and developing methods and mechanisms on how to effectively reduce their emissions and contribute to internationally set targets such as the Kyoto Protocol. While many companies take actions on the output side of reducing emissions, the input oriented eco-efficiency concept is not yet being recognised as another method that can substantially contribute to leveraging the climate change. A number of companies are already looking to the input side of production when substituting energy input through renewable energies or bio fuels. However, rarely is the eco-efficiency concept linked in its full understanding to the climate change discussion. The speaker argues that a well-implemented eco-efficiency strategy in a company simultaneously serves as a corporate climate strategy.[1]

How does eco-efficiency link to climate protection?

One possibility to describe the current production and consumption system is to apply the concept of industrial metabolism. Industrial metabolism is an analytical concept based on the physical laws of thermodynamics, partic-

1 Compare for example: http://panasonic.co.jp/eco/en/factor_x.

Figure 1:
Industrial Metabolism



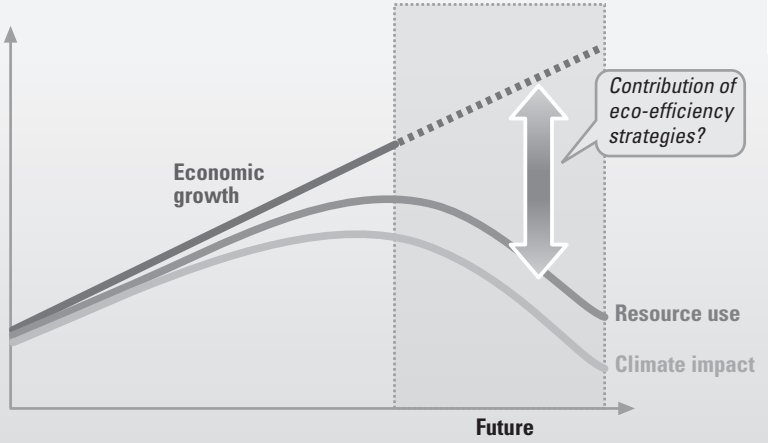
Source: A. Villar

ularly the conservation of matter and energy. The concept is based on an environment-society model, where the latter is embedded into the former and connected with the surrounding environment via material and energy flows.

An industrial, societal, or economic system can be characterised through its physical metabolism: the extraction of raw materials, the transformation into economic goods and services and the final release of those materials back to the environment. All of those material transformation processes are fuelled by energy. Quantity and quality of the material and energy throughput, i.e. the Industrial Metabolism, is subject to discussion on how to manage the material and energy flows in a sustainable way. Any material input into the techno sphere will sooner or later become material output. There is a causal link between inputs and outputs, due to the law of conservation of matter. A (quantitative) reduction of material inputs also constitutes a strategic means to quantitatively diminish the material output flow back to nature.[2]

2 See also the study programme ‚millennium collaboration projects' financed by the Japanese Economic and Social Research Institute (www.esri.go.jp), and WI's contribution: Bleischwitz, R. / Hennicke, P. (Eds.) (2004) Eco-efficiency, regulation, and sutainable business, Edward Elgar Publisher.

Figure 2:
Decoupling economic growth from resource use and climate impact

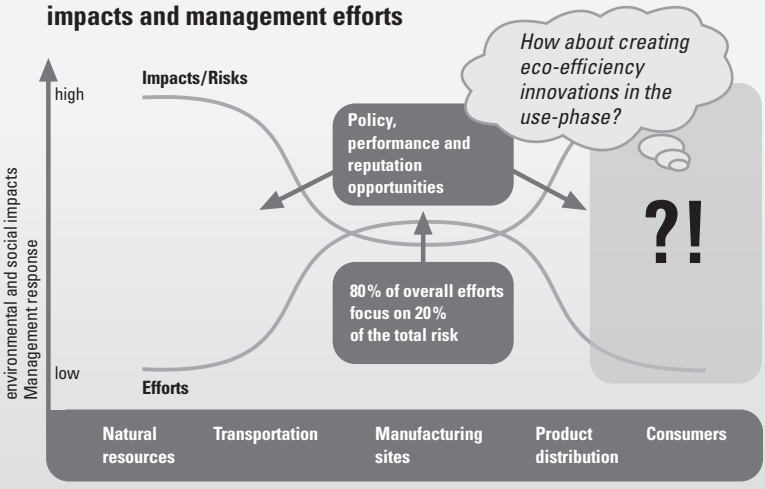


Source: A. Villar

When adapting the concept of industrial metabolism to the recent climate change debate, it becomes obvious that there exists an enormous potential to increasingly address the input side of the production process when aiming to contribute to reducing negative climate effects. The eco-efficiency concept provides an approach for companies by which they can combine material and energy efficiency with corporate climate strategy.

Eco-efficiency has been defined as a concept and strategy enabling sufficient de-linking of the use of nature from economic activity needed to meet human needs to allow it to remain within the earths' carrying capacities. With regard to companies, it means doing good business while improving the overall environmental performance of a firm or a product. In other words, it is about creating more goods and services while using fewer resources and creating less waste and pollution.

Figure 3:
Mismatch between environmental impacts and management efforts



Source: A. Villar, based on WWF (2003)

Looking into the whole value chain of production and consumption

The eco-efficiency concept needs to be put into a wider picture. Namely, it has to be applied along the whole value chain of production and consumption. As figure 3 illustrates, current management eco-efficiency efforts predominantly focus on the production process or a single manufacturing site. However, research shows that the major environmental impacts occur during the resource extraction and consumption phase. Especially looking onto the consumption phase there exist a huge number of eco-efficiency innovations for companies of every economic sector. Taking a camera as an example, it has been illustrated that a single-use camera can potentially be less material intensive than a conventional camera if the producer takes the responsibility for disposal of the single-use camera after usage. The take-back responsibility would drive the producer to produce the camera in a way that its single components can be easily disassembled and recycled in a way that the majority of components can be integrated into the production process of a new camera, hence creating a closed-loop resource production-consumption cycle. The overall use of resources is reduced even more if the

take-back principle is applied to a digital camera in combination with a product leasing service.[3]

Conclusion

Companies should increasingly consider the eco-efficiency concept as a means of contribution to leveraging climatic impacts. The concept of industrial metabolism illustrates that every emission or waste has a source of origin. Hence, reducing emissions and leveraging the climatic impact demands increasingly to look onto the input side of production. The important research question that arises is to which extent does the reduction of the material and energy input of the production and consumption system reduce emissions? To become effective, eco-efficiency strategies need to cover the whole value chain of production and consumption with increased focus on the consumption side. The consumption phase bears enormous potential for eco-efficiency improvements and innovative product-service systems. Companies taking up these innovation and eco-efficiency opportunities will significantly benefit from double-win situations. By reducing overall input of resources into the production processes and developing innovative product-service systems, they will gain in competitiveness through reduced production costs and increased reputation through an innovative combination of eco-efficiency and climate protection.

3 Feucht, Sebastian, Faktor 10 in der Fotografie, in: Schmidt-Bleek, Friedrich (Hrsg.), Der ökologische Rucksack – Wirtschaft für eine Zukunft mit Zukunft, Stuttgart/Leipzig, 2004, S. 157.

Comments/Discussion

Chair: Franzjosef Schafhausen

What have we learned from these three presentations? First of all, it is clear that this is a very complex issue. However, there are a lot of opportunities and possibilities as well as a lot of barriers. Hitachi as well as BP committed to contribute to the reduction of green house gases (GHGs), albeit with differing approaches. Hitachi favours more voluntary action plans and BP has accepted that in the future, carbon will have a price. BP is therefore very much in favour of a simple transparent emissions trading scheme that is less complex than the system currently in place. In both cases we learned that companies apply a systematic approach to identify the status of the energy consumption manufacturing technology and subsequently identifying where the opportunities lie, which policies and measures should be applied.

It would be very interesting to multiply the success stories reported by Mr Takahashi. The conclusion I would draw from these presentations, is that climate change is a very complex issue with no single solution. We must identify the win-win options dealing not only with climate protection but also with consumption. There are lot of possibilities along the entire chain and lifecycle of products. That was the message we got from Andreas Villar of the Wuppertal Institute. In every country, all around the world, there are a lot of opportunities that do not necessarily imply extra expense. We must identify these opportunities and use them.

Question from the Institute for Global Environmental Strategies (IGES) directed at Dr von Meyerinck, BP Germany: If there is an emissions reduction challenge of 50 percent or 60 percent by 2050, how does this plan fit into the current efforts of BP for future challenges?

Answer: As I indicated, we looked at the work of Princeton University. Princeton came up with seven, eight or nine feasible wedges for continuing business. One of the wedges is about supplying solar panels to the world, another about making our own installations much more efficient than they are today, and yet another is about helping car manufacturers improve fuel quality, and a very important one is combining existing technologies with CCS. We are a big gas supplier, so changing the current coal genera-

tion capacity to gas generation capacity would result in a fundamental change that would bring with it a significant reduction in carbon. If we then sequester the carbon, we would easily be able to help reduce the carbon intensity. These are four business models that are very close to our current business operation and our long-term strategy.

Question from Mr Lackmann, President of the German Renewable Energy Foundation directed at Dr Meyerinck, BP Germany: BP had an internal emissions trading system and there must have been a price for this. Since the EU Emissions Trading Scheme is in place, has there been a fusion of the two systems? What is the impact on your price?

Answer: Yes, BP built up an internal emissions trading system. First of all, we made a number of mistakes in setting it up and we have not been short in trying to explain this. Mr Schafhausen is welcome to know what one should not do when you build up an emissions trading system.

We had already seen that the prices for certificates were very similar within our company because, basically, we are running the same units around the world. We have refineries and chemical units with very similar reduction costs. We thought we could either continue with our own trading system and then continue from our corporate headquarters and trade from there into what would hopefully become a UK trading scheme. But why would we

build our own system that is then able to trade into a UK national system? That could not be the way forward. That was the reason why we did not want to continue with our own system. We had learned a lot from it but we wanted to put our effort behind building a European system that can hopefully be extended throughout the world.

In terms of pricing, for a number of reasons, I felt we should never ever publish any prices we saw in our old system. One reason being that we had very similar reduction costs and then we made a number of foolish mistakes. There is a lot to learn. That is why I am opposed to the open mechanism we have in Germany. I know Franzjosef Schafhausen might not like me for saying that, but I still think we should not have an exposed system because that is exactly what BP did. We allocated certificates and thought that one of our installations has too many and took them away. This disturbed the entire market and the prices ran from 5 USD's up to 100 USD's and back to 20 USD's. This is what you do not want to see because it doesn't work. So cutting a long story short, what we learned was, develop a system and do an allocation. There will be some unfairness in the allocation process, no doubt about it, but then let the market run the risk.

Question from "Green Fund", Japan directed at Mr Andreas Villar, Wuppertal Institute: Objectively, how can you manage the consumer index so that they can set up life cycle reduction targets? In specific terms, how did you develop an objective index for consumers? In Japan, we have to manage CO_2 reduction, however more importantly we must change our lifestyle and behaviour patterns rather than focusing on education and awareness-raising. In the system on the whole, we need to have an objective indicator to control our CO_2 emissions particularly focusing on consumers. Is there any way to do that in your opinion?

Answer: Indicators for the consumption phase are quite tricky. We are doing some research on setting up an index for consumption. It shows that it is quite difficult to find clear indicators and to measure the climate impact of the consumption phase. But I am quite sure that we will make progress and find indicators. However, I think that education and information is very important. The question is who provides the consumer with this information and education? Here I see a big role for all the groups that are represented in this conference today. Information has to be provided by the governments, by civil society organisations, but also by industry. I still see a lot of potential to inform the consumer about his or her impacts on resource consumption and energy consumption during the use phase of a

product. So I think, here we still need to explore new partnerships, especially amongst the three groups on how to effectively address the consumer and raise awareness during the consumption phase of many products. Where can we identify new possibilities to reduce the use of products but rather cover the same need through other concepts? So it would be not to think of the car as a means of transport, but rather to think of mobility. There is a wide field for exploring new concepts that would contribute to more sustainable production and consumption patterns.

Municipalities

Forerunners in Implementing Climate Change Policies

Astrid Hoffmann, City of Hannover

Aspects and examples of local climate protection strategies

Hannover is located roughly in the middle of Europe, in the northern part of Germany. It is the state capital of Lower Saxony. The City of Hannover has half a million inhabitants and, with 20 surrounding towns, makes up the Hannover Region, an administrative entity with just over one million inhabitants.

Overall strategy for local climate protection measures

In 1992 the City Council committed itself to a 25 percent reduction in CO_2 emissions from 1990 to 2005. To implement this decision, the Energy and Climate Protection Unit was founded in 1994 to devise and implement the municipal climate protection programme in association with all local stakeholders.

Hannover has a local utility, of which 75 percent is owned by the city. The brand name this utility uses is "enercity". Their products are electricity, gas, water, district heating and services. There are one coal-fired and two gas-fired combined heat and power facilities. Some of the achievements of Hannover's climate policy, however, is that in the last few years the city has built eleven small, decentralised combined heat and power plants, hydro-electric plants, various solar panel installations and biomass power, all of which are known for their pioneer activities on demand side management.

One of the most important factors under present cost conditions is the 'proKlima' Climate Protection Fund. Enercity (Stadtwerke Hannover) pays € 4 million annually into this fund. The City of Hannover contributes € 1 million and each of the five towns from the Hannover Region contribute a small amount.

But there are also partners who don't make a financial commitment. Their function is to serve as an advisory board, as this is one of our instruments for stakeholder involvement. Ruhrgas and Thüga (national gas suppliers) are members of the proKlima advisory board as well as the Stadtwerke shareholders. Other stakeholders are: Hannover Chamber of Craft Trades, Alliance of Industrial Energy Customers (VEA), Lower Saxony Consumer Advice Centre and Environmental Protection Citizens Initiatives.

The proKlima partnership contract was signed in 1998. The contract partners committed themselves to co-operate on climate protection and to set up a climate protection fund to support measures that go beyond current legal standards. ProKlima gives financial support to:

- in old buildings: insulation, new heating systems, energy passports and quality assurance;
- in new buildings: high efficiency Low Energy Houses, Passive Houses, quality assurance as well as solar thermal heating and solar energy in schools and sports clubs. For these measures they pay out about € 3 million for circa 2,500 applications a year. Additionally, the fund finances individual flagship projects and innovative technologies.

The last component of Hannover's Climate Protection strategy is the Climate Protection Agency, founded in 2001. Its tasks are networking with private sector partners and local authorities in the Hannover Region, public relations work, technical conferences on climate protection as well as an information and advice service.

Many different organisations support and are involved in the Climate Protection Agency such as the Region, the City, the public transport operator 'üstra', 'enercity', the local utility, and the stakeholders association and several private sector companies. The stakeholders association includes housing associations, renewable energy companies, environmental research and training institutions, planning and engineering bureau, craft guilds and associations, a broad spectrum of interests from the public and private sectors.

Examples of sustainable urban planning and development

Kronsberg Ecological Development

This is a new city district with 3,000 dwellings. It was built from 1996 to 1999, using a comprehensive example of visionary urban planning and construction. It achieves overall 80 percent less CO_2 emissions than from normal developments. The CO_2 emissions were cut in this new district by insisting on low energy housing construction methods with quality assurance, district heating network supplied from CHP plants and by setting up electricity saving programmes for the owners and tenants.

Zero Emission Development

The Kronsberg development is 10 years old now and today Hannover is planning a zero emission development. Its aim is an overall 100 percent cut in CO_2 emissions for 300 new homes. This aim will be reached by insisting on passive housing standards, energy provision from renewable sources (biomass, solar thermal and photovoltaic), compensation for CO_2 emissions from electricity use (heat pumps and domestic electricity) and by investing in external renewable energy facilities. Construction is expected to begin in 2007 or 2008.

Retrofitting of the building stock

To reduce CO_2 emissions significantly, the energy demand in the older building stock must be reduced. More than 50 percent of residential buildings in Hannover date from 1950 to 1970 because much of Hannover was destroyed during the Second World War. There are already some funding programmes for this, but to speed up energy efficiency, Hannover received financial support from the European Union through the "Concerto" programme.

"Concerto" is an EU project consisting of integrated measures. The building stock of Hannover gains in energy efficiency through the use of renewable energies. The aim is to achieve 60–70 percent savings on end-energy for heating and use of renewable energies wherever possible.

The measures are: 1) Energy efficient retrofitting of multi-occupancy houses (dating from 1950–1970) of several Hannover housing associations to a high energy efficiency standard and the use of renewable energy by conversion from coal to biomass for the existing district heating network. 2) Retrofitting of detached and semi-detached houses to a high-energy

efficiency standard and use of wood pellet boiler, solar thermal, and/or photovoltaic systems. 3) Quality assurance monitoring.

Hannover was able to gain EU support because there is a mature structure of cooperation between the various participants: local authority, local utility, climate protection fund, climate protection agency and the owners of the buildings (housing associations and private persons). All retrofitting measures were subsidised by the EU, the climate protection fund and a national fund. The measures will be backed up with training for architects, engineers, technicians and builders.

Climate protection policy is a win-win policy

The Hannover experiences show that climate protection policy is a 'win-win' policy. Every climate protection measure reduces CO_2. But there are also further advantages for the private, public and industrial sectors: reducing costs while realising economical measures.

- For the local utility: increased customer loyalty.
- For business: advantages through future know-how and technologies.
- For the city: job creation, especially in the construction trades;
- € 26 Mio pro Klima funding has stimulated € 209 Mio in private and public investment.

Municipalities

Forerunners in Impementing Climate Change Policies

Michio Takaku, Environmental Planning Division, Kanagawa Prefecture

We are not the front-runner when it comes to environmental protection measures. But we do have ITTO and other climate change related organisations established in the Kanagawa Prefecture. We have heard many success stories today, but our story is one of failure. In the 1990's and in 2003 we experienced a 16 percent increase in CO_2 emissions. Although this is not the final figure, we are not an example of success, but rather one of failure.

The Kanagawa Prefecture is located next to Tokyo. Of the 47 prefectures, we are the third largest in terms of population. We have close to 8.8 million inhabitants. Our GDP is at 30 billion YEN, only fourth after Tokyo. In terms of the GDP, we fall somewhere between Sweden and Australia.

Following the Earth Summit in 1992, we developed our own local agenda in 1993, to come up with a prefecture ordinance. Under this ordinance we developed two programmes, namely the "New Agenda 21 Kanagawa" and "The Basic Environment Plan".

As mentioned earlier, compared to 1990 levels, there has been an increase of 16.2 percent in CO_2 emissions in the Kanagawa Prefecture. Office buildings are mainly to blame for this, although there has also been a large increase in household emissions. Despite the efforts of our environmental department to make things happen, it is quite difficult for us to change the reality. In comparison to 1990 and 2003, the industrial sector has significantly decreased its emissions because of new national laws and regulations. But due to these policies, many factories have re-located outside the Prefecture.

In April 2005 the national government ratified the Kyoto Protocol. We are trying to develop our own scenario. Tokyo Electric Power, as well as Tokyo Gas Company, are also working with energy suppliers in trying to help us

formulate our plan. A very important point is that we need not only have partnerships forged inside the Kanagawa Prefecture, we also need broad collaboration on a national level on what we call the 8th district Summit, where all the prefectures and cities come together. In 1989 we had six prefectures and eight cities. We have a centralised planning group that meets to look at waste, environmental and disaster prevention issues.

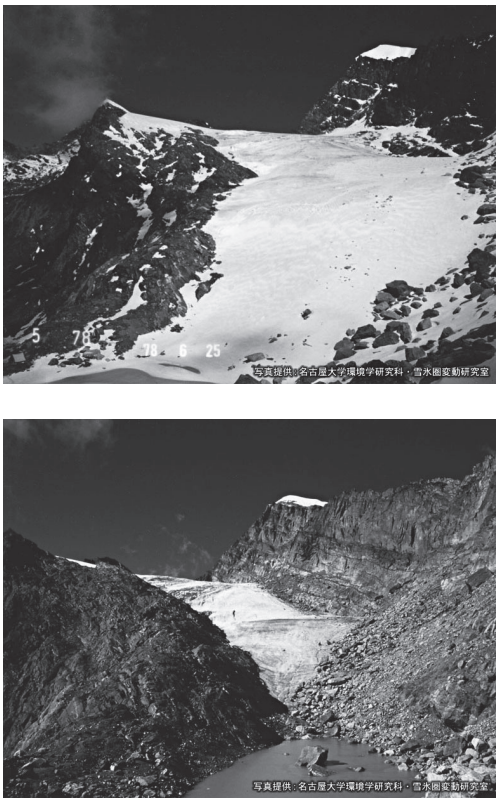
This year we launched a campaign to stop global warming by promoting an "eco-lifestyle" in summer, disseminating the so-called "cool bids" which advocates wearing cooler clothing in order to use less air conditioning. About one fourth of the total Japanese population is included in this 8th district, so this is an effective measure.

We have seen a 16 percent increase in CO_2 emissions. What went wrong? Where are our failures? What are the necessary ingredients for success?

We need more partners and they have been very difficult to find. We do have the collaboration of citizens, businesses, local governments and NGOs. We have asked for input by our citizens to help develop a plan. So we have visions for the medium and long term. We have 11 different areas and 21 goals. What was missing was a well functioning system of checks and balances. Consequently, we established a committee to remedy this. It was also necessary to introduce new ideas and activities, thus we established a practise and action department.

In order to promote the "New Agenda 21 Kanagawa", we launched a tool called "My Agenda Programme", which is, in fact, an individual agenda. The parties are asked to register the plans they would like to implement and these are made public. In the case of business, this would include whether they have green purchasing criteria to be established, disposal methods or other CO_2 reduction measures. Households play a very important role in this since they emit about 10 percent of the CO_2 total. We are trying to bring about immediate results by using easy to implement actions. At this point, it is unclear whether these measures will be sufficient to show a significant reduction in emissions, as merely 1 percent of all the enterprises are participating in this programme. With the energy saving law of the national government for the large companies, we do have good statistical data as to energy consumption, but for those smaller enterprises outside of this framework, it is very difficult to take measurements. We are asking these businesses to register with the government, so that we can establish a statistical base.

In the future we will need to prioritise emissions reduction from households, as our population of 8.8 million consists of 3.4 million households. About 45 percent of the increased emissions have originated from these



Mountain glacier : drastic retreat in late 20th century — impact of climate change, Himalayan glaciers melt 1978–1998

households. We are considering the introduction of a photovoltaic system for houses, however, this is not yet economically viable and the investment can not yet be justified. There are 3.4 million households and about 500 of these have solar panels. It does look as though subsidies for solar panels are being phased out and I would also like to ask Tokyo Electric Power to provide higher prices. We must somehow to be able to sell the environmental value in some way. The problem is that the current tax system prevents people from making the move toward more energy efficiency. If there were tax incentives, there would be more efficiency in the households.

In Kanagawa, we have two bullet train stations. We are also looking to establish a third station between Odawara and Yokohama. We would like to establish an eco-town with solar panels right next to it, asking the citizens to be involved in the planning process. Environmental policies alone would

not be effective enough, as city planning needs to be taken into consideration as well.

I have been making presentations at many conferences. This is the temperature rise and this is the consequence of that. I am sure people will be shocked by seeing this. Taifuns hitting Tokyo have increased in number. This may be due to the so-called heat island effect, but climate change is really the culprit. Every year, 6.3 gigatons of CO_2 are emitted into the atmosphere but only 3.1 gigatones can be absorbed by the earth. The remainder will be released into the atmosphere. Lastly, as I had mentioned already, the measures and programmes implemented thus far have not been successful. We need to work in partnership and ask for the participation of many stakeholders. In the Kanagawa Prefecture, the government is constrained by the tax revenue, so we cannot utilise the subsidy mechanism. Stakeholders will need to give us their financial support. We must have a long-term view, a 50 years scenario, when developing reduction programmes. This is the reality for us in the Kanagawa Prefecture.

Municipalities

Forerunners in Implementing Climate Change Policies

Gotelind Alber, Climate Alliance of European Cities

As members of the Climate Alliance, more than 1,300 European local governments have entered an ambitious commitment to climate change policy. Some 400 members of the Climate Alliance are German cities, towns, and counties. Climate Alliance's activities include the exchange of experience, showcasing best practice, and advice to members. The Climate Alliance has developed a systematic approach to local climate protection and offers the organisations campaigns and other actions. Moreover, the Climate Alliance represents the interests of local authorities committed to climate protection at EU and international levels.

At the local level, the connection between greenhouse gas reduction and the promotion of sustainable development is more obvious. Climate protection policies are hardly enforceable, unless they are linked to noticeable benefits for the community such as costs savings, noise reduction, improvements regarding local pollution, and a higher standard of living.

Local governments decide about a large part of the carbon-intensity of a society in the long run, in particular through spatial planning, policies and development of the local infrastructure. Thus, they have the power to optimise the energy performance of new developments and integrate traffic prevention strategies in the course of their development planning. Thus, they can and should exploit mid and long term GHG reduction potential which cannot be tapped through national policy. If substantial reductions are to be achieved in the long run, local policies have a pivotal role, so national policy should, therefore, seek to involve local government in climate policy by promoting the mainstreaming of GHG reduction considerations into local policy.

As climate protection is a voluntary task for local governments, financial constraints are a major threat. Unless there is a strong political commitment to local climate policy, cuts in budgets, both on national and local levels, will affect ongoing and planned activities.

Good practice examples from Germany

City of Munich (Population, 1.3 Mio.)

Since 1987 Munich has an investment programme for energy conservation. In the early nineties, Munich joined the Climate Alliance and started its climate policy. Since 1999, an extended climate protection programme is being implemented in close collaboration with citizens. In a recent study, supported by the Federal Environmental Agency, the city explored the feasibility of the Climate Alliance target of a 50 percent reduction of CO_2 emissions. The main findings of the study are that Munich could, actually, reach the target within 25 years, given that all sectors are targeted (electricity, heat & cooling, transport) and climate change policy is mainstreamed into all policies of the city. However, meeting the target would require favourable conditions at national and international levels.

City of Berlin (Population, 3.4 Mio)

Berlin established an "energy planning" unit in 1989 and in the years thereafter developed its first energy policy programme. In 1990, Berlin was one of the first two cities to join the Climate Alliance. The current climate action programme has a time horizon until 2008, involving policies addressing private and public buildings, the commercial sector and transport. In particular, federal government buildings have been upgraded for better energy efficiency, utilisation of decentralised CHP and solar energy. Due to severe budgetary restrictions, investments in city-owned buildings would be extremely difficult. Performance contracting is, therefore, playing a major role. Within the "Energy Saving Partnership", the city is pooling various buildings for performance contracting, in order to improve the contractual conditions with ESCOs. Less profitable properties are mixed with very profitable ones. The contractors refinance their investments through the costs savings achieved, and the city gets a negotiated share of these savings. After a certain time, the installed plants become the property of the city. Until now, 18 energy saving partnerships (pools) have been realised, leading to private contractor investments in more than 1300 buildings (25 percent of all public buildings). Thus, Berlin has managed to reduce

their CO_2 reduction by 120,000 tonnes, with annual cost savings of € 30,4 Mio. (20 percent of Berlin's total energy costs).

Cooperation Japan — Germany

Sharing experience and learning from others can assist municipalities to more effectively design and implement local climate protection programmes. Existing city partnerships between Germany and Japan are suggesting that the exchange of experience between Japanese and German cities could be very fruitful for both sides as there are similarities that would allow for the replication of good practices.

Another promising form of cooperation is to carry out peer reviews, a method which has already been used successfully with cities to enhance the exchange of experience. Within an ongoing project of the Climate Alliance, aiming at the combination of local mitigation and adaptation policies, this method will be applied to intensify sharing of know-how and joint learning processes. Experts from other cities will evaluate the host city's climate policy in order to prepare recommendations for further action. Guest cities will also gain ideas how to improve their own climate policy. Since, in contrast to city twinning, a group of cities from each country is involved, the method can provide a richer diversity of expertise and approaches.

However, twinning or multilateral direct exchange requires considerable efforts in terms of travel, while the replicability of approaches is somehow limited as preconditions vary. Therefore, beyond such schemes, networks play a major role to make the experience of others available to municipalities, being able to draw from successful approaches of numerous members and to condense their experience into recommendations, guidelines and methodologies. They can utilise Internet based tools, such as open databases to facilitate sharing of good practice. Listed below are relevant Climate Alliance projects and activities:

Climate Alliance methodology

The method for local climate protection consists of four parts:

- Ten Steps to integrate climate protection into municipal policy;
- Climate Alliance Climate Compass comprising numerous recommended measures;

- Climate Alliance monitoring system: Greenhouse gas inventory of the entire city;
- Monitoring of individual measures, application of progress indicators.

The Climate Compass is a novel way to assist cities and municipalities to elaborate a climate protection programme in a very short time, building upon existing experience available from Climate Alliance members. The Climate Alliance can assist Japanese cities or networks to adapt and make use of this methodology. For further information please see www.climate-compass.net.

Fifty-fifty incentive scheme for public buildings

This scheme of paying back a percentage of the savings generated by energy conservation to the users of buildings has been promoted by the Climate Alliance for several years. This approach to tap energy saving potentials related to behaviour has been successfully implemented in schools by numerous cities and towns. The Climate Alliance is currently working to enhance and extend it to other buildings. This is supported by the German Federal Environment Agency. We believe that such schemes could be applied in Japanese cities, as well.

Sustainable mobility campaigns

For the campaigns "In town, without my car!" and "European Mobility Week", Climate Alliance is a partner within the European consortium and national coordinator for Germany (please see www.mobilityweek-europe.org for more information). Some Japanese cities have already participated in these campaigns that allow for collaboration and exchange. The same is true for the campaign "ZOOM — Kids on the Move", addressing small children in kindergarten and school. It was organised by the Climate Alliance for the first time in 2002 and is now going to be continued on a permanent basis in several European countries and regions. This could easily be replicated in Japan.

Promoting renewables

In 2004, during the run-up to the International Conference for Renewable Energies in Bonn, ("Renewables 2004") the "Local Governments' Renewables Declaration" was prepared and signed by a large number of municipalities, following consultation with local governments worldwide.

The Declaration includes a voluntary commitment by the municipalities to expand renewables in conjunction with energy efficiency and energy saving measures. The signatories intend to carry out renewable energy projects in their own buildings and on their own land. They also aim to initiate private sector projects and support them through information, cooperation, financial incentives, regulation, and utilisation of their planning competencies. At the same time, global effects of local policies shall be taken into account. Promotion of renewables, therefore, requires cooperation with partners in other parts of the world. This declaration is still open for signature. Please see www.renewables2004.de/en/related/LocalRenewables_Final_Declaration.pdf.

Involvement in international climate policy

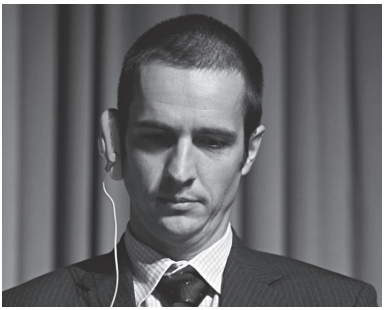
Shortcomings of national climate policy negatively affect the potential range and the efficacy of local action. For exapmle, in the case of absence of proper energy efficiency standards, local authorities will need to spend a lot of time and money to provide incentives to promote efficiency instead of doing other things. On the other hand, more favourable national legal and economic framework conditions will help municipalities to more effectively tap local GHG reduction potentials. Moreover, their vital role in implementing climate change policy needs to be acknowledged and emphasised at national and international levels, and their participation in decision-making must be ensured, taking their integrated approach into consideration.

The Climate Alliance is, therefore, active at the level of international climate policy showcasing efforts and achievements of local governments and seeking to influence the negotiations with the aim of strengthening both international commitments and national action and improving the visibility of local contributions. This could also be a field for future collaboration between German and Japanese local governments.

Stakeholder Participation in Policy Making

Why Cooperation between Government, the Private Sector and NGOs in Japan and Germany is Essential

Alexander Woitas/Dörte Miosga,
CO2-Online gGmbH



co2online as an application service provider

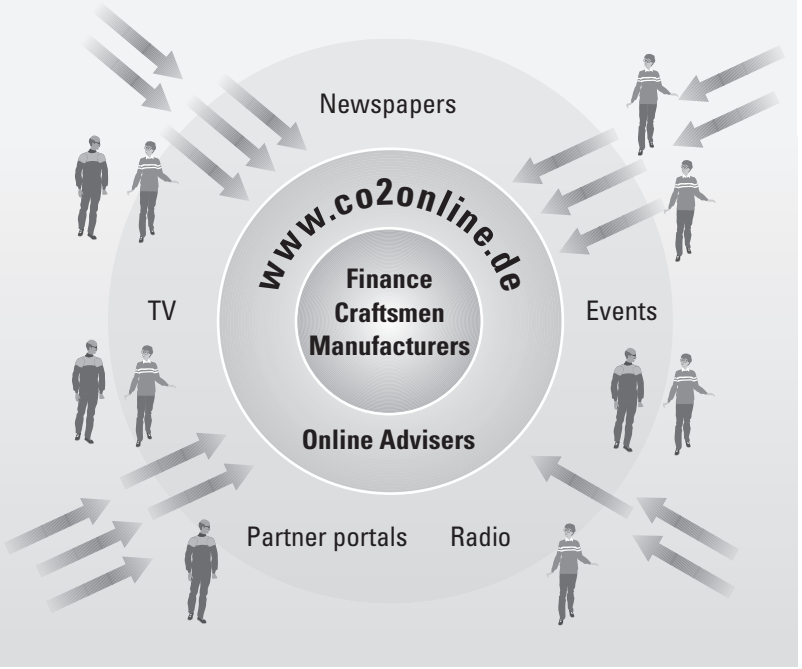
co2online is a non-profit making, limited company, that campaigns for a reduction in CO_2 emissions. The central approach is: climate protection by means of energy saving through dialogue. With online advisers, municipal heating surveys and portal partners from business, media and politics, co2online motivates private households and small businesses to become actively involved in climate protection, to save energy and money at the same time. co2online informs and motivates mainly in the area of technical modernisation measures for heating and thermal insulation in existing buildings. In Germany, co2online is running a Climate Protection Campaign, sponsored by the Federal Environment Ministry.

The result of co2online's work is a cost efficient reduction in CO_2 emissions, as well as a network and co-operation between government, industry, and citizens.

co2online's philosophy

840 million tons of CO_2 are emitted each year in Germany. Private households are responsible for one seventh of this, which equates to 120 million tons in total. Hence the problem in Germany is that we have these 120 million tons of CO_2 from residential buildings with no or little tendency to decline. We also have 36 million households with no or little knowledge about their energy consumption level and saving potentials. And we have 300,000 craftsmen with no or little marketing expertise and power. Our task is to achieve significantly more modernisation of buildings to comply with the Kyoto goals. What is the solution? co2online offers goal-oriented methods for the reduction of CO_2 emissions, low-budget and highly efficient methods and tools and a web-based and dialogue oriented approach.

Figure 1:
co2online's philosophy: creating chains of action



co2online serves as an Application Service Provider: six online advisers offer quick and competent advice on various aspects of room heating, energy-saving modernisation measures and grants. Thus far, more than 500 partners have integrated the online advisers into their own web sites — including ZDF German Television, the online property marketplace Immobilienscout24 or several banks like the KfW promotional bank. 10 to 15,000 people consult the online advisers each week, totalling over 500,000 online consultations since the 1st of July 2004 (start of the Climate Protection Campaign). co2online's web based and dialogue oriented approach is accessible for everybody, useful and easy to understand for experts and laypeople, adaptable to business needs and local conditions.

At the end of each online consultancy the user has the possibility to contact craftsmen, manufacturers or energy consultants in his region. co2online creates chains of action: from broadcasting to media web sites to energy consultants to craftsmen. The internet user gets through the online advisers on the partner portals directly to craftsmen and energy consultants.

Energy-saving online advisers

Six online advisers offer quick and specific advice on various aspects of residential heating, energy saving modernisation, and subsidies. They help homeowners and tenants evaluate their residential energy consumption and to cut costs and CO_2 emissions.

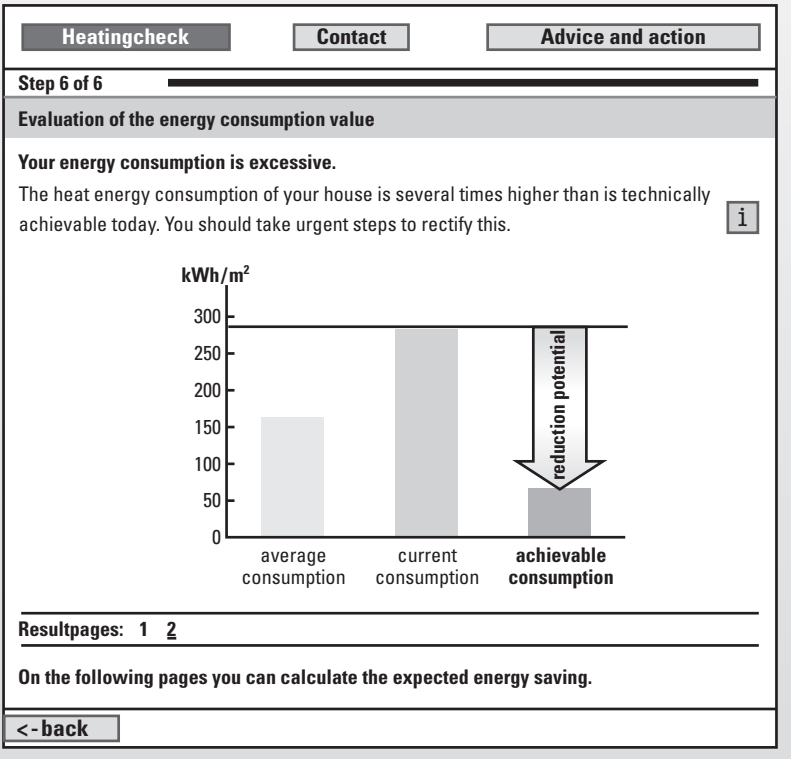
1. The heating check evaluates one's own energy consumption and costs.
2. The heating systems check compares the total cost (investment + operating costs) of different heating systems (natural gas, oil, district heating, wood pellets, and heat pump) and their CO_2 emissions.
3. The pump check gives information regarding the energy consumption and energy-saving potential of pumps for heating and warm water.
4. The modernisation check estimates the economic efficiency of energy-saving modernisation measures.
5. The subsidy check finds, for a given location, subsidy programs for specific energy-saving measures.
6. Encouraging examples of successful modernisation of residential buildings are presented in the Good Practice Archive.

Heating check

This benchmark allows evaluating one's own heating energy consumption and costs. It compares the heating energy consumption with averages of comparable houses or apartments and shows whether one's own consumption is low or high. The heating check also estimates the energy saving potential and provides contact addresses to implement energy saving measures. Users are lead through six steps. Required inputs are size and age of the building, fuel type and consumption for at least one year, and whether water heating is integrated or separate.

Test the heating check in English (use postal code 1234): http://heizcheck.sec2-server.de/index.php?portal_id=europa_en

Figure 2:
Diagrammed result of a "Heating Check" – Step 6/6

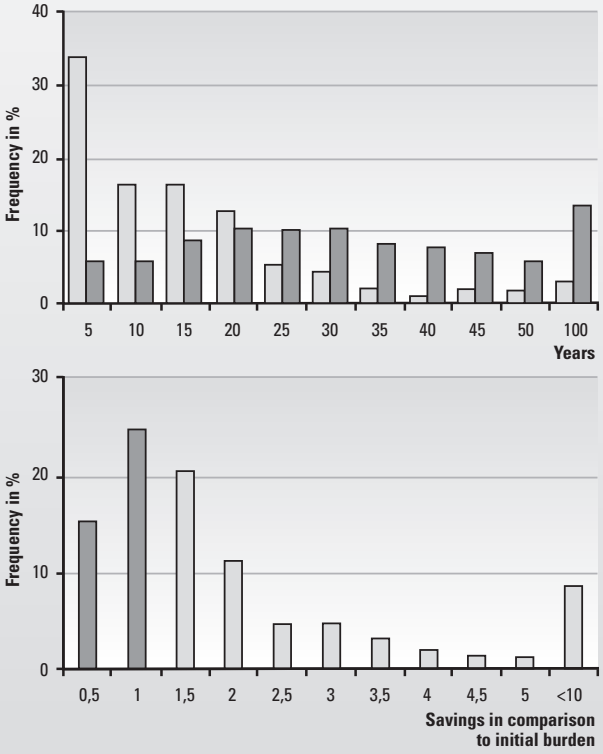


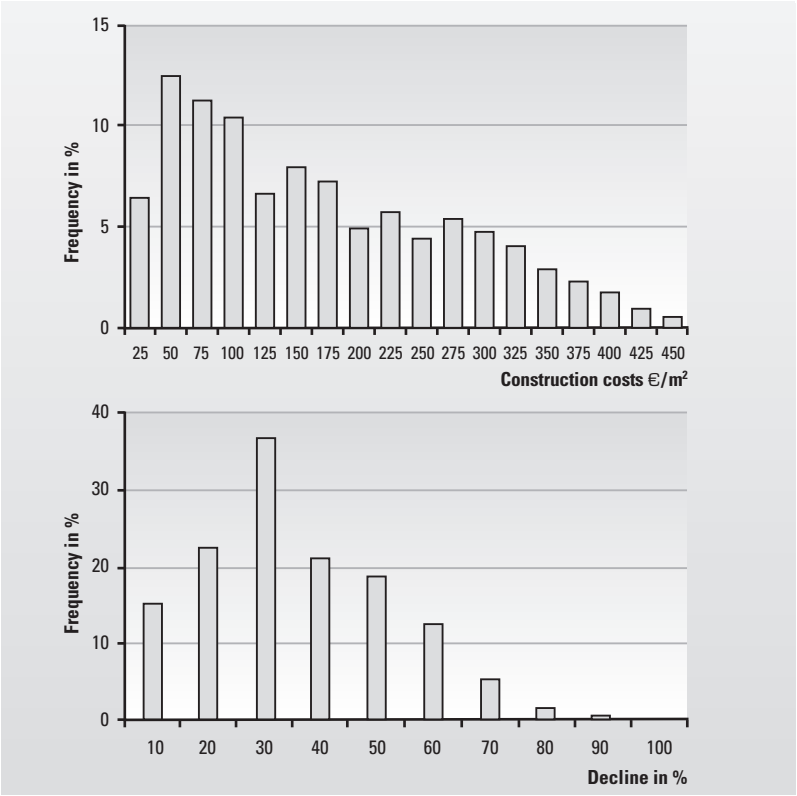
Pump check

Households use two types of pumps: one pumps water through heating pipes to radiators and back, the other circulates the drinking water. Old pumps are often unnecessarily large and inefficient. The pump check shows the energy saving potential of adjusting or replacing pumps. It compares current energy cost with cost estimates for adjusted or new pumps as well as the payback period. The database contains most pump types used in Europe. The pump check is useful for laymen and for craftsmen.

Figure 3 cont. Test the pump check in English (use postal code 1234): http://pumpenrat.sec2-server.de/index.php?portal_id=co2online_en

Figure 3: **Four Examples of data-evaluation**





Reporting of results

All results concerning the usage of the online advisers are reported and accessible for everybody on http://www.co2online.de/statistik.html. The users' input-data and calculated results offer substantial statistic material on CO_2 emissions and energy consumption in buildings.

Ideas for Japan

co2online proposes to either adapt its services to Japans necessities, for example a heating survey for the island of Hokkaido, or develop specific tools, as for example an online adviser for air conditioning systems.

Comments/Discussion

Chair: Franzjosef Schafhausen

The three presentations gave similar messages. Capacity building is necessary to organise the climate change issue at the local level. It is necessary to disseminate information. Not only to disseminate information about the reason for taking action with regards to energy, but also information with regards to technology and behaviour. The multiplication of best practises is a similar issue, in both Hannover and Kanagawa. The idea of developing and testing new ideas, for example the 50/50 approach in Hamburg and the pooling approach in Berlin on contracting as well as monitoring was made very clear. The eco-city in Kanagawa intends to develop a holistic approach dealing with buildings and private households. This is very interesting.

Question from Green Fund Japan directed at Astrid Kallen-Hofmann, City of Hannover: Dr Peter Hennicke, President of the Wuppertal Institute, mentioned the book "Negawatt". I refer to the part about the public energy cooperation success story in the city of Hannover. Least cost planning was the methodology employed by the corporation. Energy efficiency would mean cost reduction. So, according to the book, the conclusion was that it was much more beneficial for the company. If we try to spread the same approach in Japan, there would be bottleneck, because we have a regional monopoly of the ten utility companies. In the case of Hannover, the local electricity board must have shown some resistance initially. But with the least cost planning it would eventually be beneficial to them and lead them to understand the benefits of this approach.

How were they persuaded to be able to understand the benefits and how was the effect of this approach measured?

Answer Astrid Kallen-Hofmann**:** Prof Hennicke knows more about that. This study was made before the liberalisation of the energy market. Our utilities started to apply some of the measures mentioned there. Nevertheless they also had their plans to produce electricity.

Answer Prof Peter Hennicke: I had shown you two figures that are important for the incentive mechanism. One was how much does it cost to buy energy for residential use and how much does it cost to produce it. How

much does it cost to produce energy, or how much does it cost to produce the avoidance of energy? We have to pay about 15 cents for energy and it costs about 3–5 cents to avoid it. So between both, there is a big incentive and it must distributed amongst the utilities and to the consumer who saves the energy. That is the economic mechanism.

In the case of Hannover, there were two driving forces. One was the responsibility the utilities have. They cannot only sell electricity; they must also show concern for the impact of what they are doing. This is the extended producer responsibility. The other one is that if we do this, it should not have an impact that we cannot pay to our shareholders. It depends on the type of mechanism to give them an economic incentive, so that it is not an economic burden for them. It depends on encouragement from the local government as well as from their customers. This extended producer responsibility really does work. Today we have to develop new mechanisms within the competitive environment and that is the reason why I mentioned this energy efficiency trust. This mechanism makes it competition neutral.

Question from IGES directed at Michio Takaku, Kanagawa Prefecture: There are actually two questions: 1. What is the role of the national government in promoting renewable energies? 2. All the stakeholders supporting the promotion of renewable energies are local. Are there any governmental promotions applied in Japan, such as tax incentives, to help reduce CO_2 emissions?

Answer: With regards to the energy policy, in principle it is to be formulated and implemented by the national government that is in charge of formulating the national plan and its implementation. It is encouraging more renewable energy use but the incentives are not sufficient. That is why this is rather slow.

With regards to the second question on tax incentives: as you know, the eco-tax is currently under debate and now that the same environmental minister will remain in office, she might be successful in introducing it. In a Prefecture, in order to protect the water resources, after much discussion in parliament, it was finally decided to impose a new tax for forestry development, so that we can preserve and conserve wood resources. So this is not only limited to renewable energy. Only if the consensus is locally established, it might be possible to introduce the new tax in one way or another. This tax could serve as funding for other activities. But when it comes to taxes, then it is rather difficult to monitor.

Stakeholder Participation in Policy Making

Why Cooperation between Government, the Private Sector and NGOs in Japan and Germany is Essential

Dr Martin Rocholl,
Friends of the Earth Europe

The question I was given today is why is cooperation between the government and civil society so essential? Why should government listen to non-governmental organisations?

In Europe, it is understood that governance will improve when governments take people into consideration from the very beginning. Our experience is that even strong criticism from NGOs is now seen by European governments as a possibility to improve their performance. NGOs now play a very important role and I think this is something that can be worked on in Japan.

NGOs bring new ideas. Organisations such as Friends of the Earth have been talking about wind power in Germany for 20 years. Now that this has been implemented, these ideas have proved to be very successful.

There is another important function of NGOs and that is that somebody needs to represent future generations and nature. In our political systems, which are very much dominated by economics today, it is very important that there is someone who will take over this role. We do an important job in informing and educating and in bringing together people and decision makers. This is very important for good governance. We also monitor government action to ascertain how well policies are being implemented.

We have an early warning function. Environmental organisations have been making us aware and warning us about climate change for over 10 years. Now that some of the effects of climate change are visible to us, I think some of the governments would have done well to listen to us much earlier.

Europe must become the most energy and resource efficient economy in the world!

If we want to save the world's environment and at the same time give fair chances for development to all people in the world, there is no question that the industrialised countries must drastically reduce their energy and resource consumption. Estimates say that Europe should reduce its per capita consumption by approximately 80 percent. This is an enormous challenge but a great chance as well.

At Friends of the Earth, we believe that the technologies exist to provide the same well being with much less energy and resources. And in times of high and growing resource and energy prices, there is no question anymore that a political and economic strategy which would make Europe the most energy and resource efficient region in the world has multiple benefits: such an approach would contribute to innovation, environmental and nature protection, competitiveness and job-creation and would safe the economy considerable amounts of money now paid for energy and resource imports. Such a strategy would also give the European Union's aim to become the most competitive economy in the world an new and constructive direction. This argumentation is, I believe, also true for the Japanese context.

While efficiency-gains — which are the prerequisite for increasing competitiveness — can hardly be achieved by further reducing labour costs and social standards, eco-efficiency provides a huge area of potential efficiency-gains, which can be collected with benefits for the whole society.

When mentioning this idea, one receives full support across the political spectrum. The European environmental NGOs presented this idea to the President of the European Commission, Jose Manuel Barroso. His reaction was very positive.

When going into the details of what this would mean for policy making in the European Union, he had, however, an excuse on practically every single proposal (see box). We must ask ourselves, why such proposals — when receiving support from across the political spectrum — are not put into practice. From an NGO point of view, there are several obstacles:

a) We still have many ignorant politicians who have not yet understood the potential of an eco-efficiency approach.
b) There are structural problems in the way the European Union is set up, which prevent bigger steps. The unanimity requirement for any decision taxation does, for example, prevent progress on environmental tax

Policy measures to increase eco-efficiency in the European Union:

1. Reducing and removing environmentally perverse subsidies in the EU and increase resources for and remove barriers towards the promotion of eco-innovation and efficiency.
2. Promotion of a cost-effective European-wide energy policy framework that accelerates energy conservation measures in key sectors such as transport, housing and manufacturing.
3. Launching a new initiative for an environmental tax reform, reducing labour costs while shifting the tax burden to the use of energy and resources.
4. Ensuring that public money, including that of the EU, is used to promote sustainable development and to purchase the most eco-efficient products and services (public procurement legislation).
5. A strengthening of the Environmental Technology Plan with challenging performance targets for products and services.
6. Assuring that the Integrated Impact Assessment methodology has a strong environmental dimension, including an assessment of the monetary and non-monetary costs of non-action, as well as the objective of contributing to sustainable development.
7. Further improvement of the chemical legislation REACH, helping innovation and substitution of hazardous substances with safer alternative substances and production methods.
8. Using Structural and Cohesion Funds to promote increased resource and energy effi**ciency**

reform on the European level. This in return prevents national governments to go ahead with further steps on the national level.

c) The undue influence of big industry lobby groups, which often represent only old-fashion industries and not the modern, eco-efficient industries, is a major problem, both on the national and the European level.

d) Advertisement driven lifestyles are another obstacle for reaching an eco-efficient society. Driving SUVs (big, wasteful Sport Utility Vehicles) in a German town, for example, can only be explained by irrational lifestyle decisions, since SUVs are completely unnecessary on a normal German road.

Within many companies, there exist exciting and innovative approaches to sustainable management. Individuals are contributing with good ideas and new technology which can drastically improve energy and resource efficiency. Such approaches have our support and we recognise the positive steps made by industry.

However, industry is restricted by their need to be profitable. Therefore, currently only such eco-efficiency potentials are used, which can be made part of win-win scenarios. Companies can only use such energy saving potentials, where the initial investment pays off in form of lower costs later on. For the challenge ahead of us, this is, however, not enough. The saving potential of win-win-scenarios under the current political and economic framework is at best 30 percent. If we want to reduce the resource and energy use in Europe by 80 percent (and at the same time keep our standard of living), much more must be achieved. This will, however, only be possible if the economic and political framework changes. For example via an ecological tax reform, which makes energy more expensive and labour cheaper, thus making energy saving measures and the improvement of energy efficiency more profitable.

For progress in this regard, environmental NGOs do, however, not receive support from the main industry lobby groups, which are often boycotting any legislative proposal which would try to change the economic framework. This is in strong contradiction to the good work of many companies for sustainability and can hopefully be overcome in the future. We hope that the industry will join us in demanding policies which promote eco-efficiency. It is at the end in the interest of the European industry as well to make a jump forward in resource and energy efficiency, which could well be one of their biggest competitive advantages in the near future.

Stakeholder Participation in Policy Making

Why Cooperation between Government, the Private Sector and NGOs in Japan and Germany is Essential

Yasuko Matsumoto, Kyoto University

Although there is close collaboration between Japanese NGOs and international environmental NGOs based in Japan, such as Kiko Network with activities on climate change, there is still no 'CAN Japan' nor CAN East Asia.

Since 1997 there have been several important provisions introduced to facilitate NGO participation such as the Environmental Impact Assessment Law, NPO Law, Public Comments on the Creation, Revision, and Rescindment of Regulations and the Freedom of Information Law. Some major changes in NGO circumstances and improved NGO capabilities have also been observed in the climate change area since COP3: changes such as the perceptions of NGOs among administrative authorities and the media; participation in international networks, and gaining expertise for information-gathering and activities; better and quicker access to information through the internet and enhanced capabilities for policy recommendations etc. With all this progress, are Japanese NGOs now able to fully perform preventive and monitoring functions? Yes, to a certain extent, especially through informal non-institutional channels such as informal hearings with NGOs and administrative authorities and political parties etc.

Nevertheless, there are still barriers to institutional participation by NGOs and to the resulting real influence in the decision-making process. There are fundamental limitations in the decision-making structure (systems exist in form only, difficult coordination among compartmentalized government agencies, reconciling interests etc.). For example, information disclosure is perhaps still perceived as a "favor" by administrative authorities in Japan,

while it is guaranteed and perceived as a right along with participation in decision-making in Germany. The Basic Environment Law goes no further than specifying the "duty" of the citizens to cooperate in environmental policy measures and it has no specific provisions guaranteeing environmental rights or the right to participate (Okubo, 2002).

It is often pointed out that a bureaucratic policymaking process, based on reconciling existing interests among government agencies and between the government and commercial sectors, makes it difficult for NGOs to influence decision-making. It is unclear to determine and verify who has decision-making responsibility. Because reconciling interests basically does not involve citizen participation or information disclosure, there are hardly any institutional opportunities for NGOs to influence.

Some problems with public comments can be pointed out. There is a lack of transparency in modifying proposals, including responses to public comments in discussions by the involved government agencies. Public comments are also needed before developing proposals.

Finally, some challenges for NGOs were raised including the importance of the awareness of rights and the principle of equality among the actors; upgrading expertise, both internally and externally, financial, and personnel foundation making constant monitoring and prevention possible. It was argued that it is vital that NGOs be autonomous and independent from the government and municipalities, and that financial independence, or at least diversified funding sources, helps NGOs achieve a constructive partnership and at the same time critical confrontation with governments and business when necessary,

Reference

Okubo, Noriko (2002), "Citizen Participation and Environmental Law", in Otsuka and Kitamura, eds. The Challenge of Environmental Legal Studies, Nippon Hyoronsha.

Summary of Parts I and II

by Franzjosef Schafhausen

It seems that progress needs pressure; progress needs economic pressure, social pressure and political pressure. I am quite sure that I am right. There is no other way to solve the problem. To use the win-win options, or what Prof Hennicke called this morning the low hanging fruits could be a first step. And I am more or less sure that in the presentation by Martin Rocholl, there was the question if the magnitude of the win-win option is realistic.

Have we discovered all of the win-win options? It seems to me that we have not. There are many possibilities that are not very expensive, where producers and consumers can benefit.

I learned that holistic approaches are getting more and more attention, there is not only the issue of producing a good as economically as possible, but there is also the question of product responsibility. How much energy will this product consume during its use?

Information is necessary and cooperation is needed. We, as the Environmental Ministry in Germany, sponsoring the climate change campaign by CO2-online, can spend 2.5 million EURO a year but that is not enough. We

have to involve all the other players. We have heard that that could not only be governance on regional or local levels, but also the local stakeholders, environmental NGOs, consumer NGOs, the non-profit organisations. In my view, there is no single solution. All players have to be involved. Benefits for producers and consumers will lead to the right product.

The consumer is not interested in consuming energy. The consumer would like to have communication, he would like to clean his clothes, he would like to have a warm house, he would like to cool his beverages, he would like to wash his dishes or read a book at night. There are technologies available to fulfil those wishes of the consumers, using less energy and producing less CO_2 emissions.

In my opinion, climate change is not only a challenge, but it creates a lot of opportunities. We could make our economies and societies more future oriented and make a change from an unsustainable to a more sustainable path in a step-by-step process. We have heard this over and over again. Again, this is a win-win option. Jobs will be created if we follow this path. This will create economic growth and innovation.

We should not believe the voices stating that climate change policy will destroy our economies and societies. I believe the contrary to be true. If we do not act to combat climate change, there will be irreversible damage. I think we will only succeed if there is cooperation between all stakeholders: governments, on the different levels, industry, energy suppliers, service providers, environmental NGOs, consumer organisations, municipalities. Cooperation is needed based on the exchange of information and experiences so everyone can help and work with one another. Let us try and do it together.

Part III

Open Discussion: Japanese-German Impulses for Climate Policy

Chair: Dr Hermann E. Ott,
Wuppertal Institute

Introductory remarks from Dr Hermann E. Ott: We have a very interesting afternoon. I thought that here at the end we could have a colloquial, familiar, more private and intimate talk with those who are present here on the podium. I would like to introduce the new participants to you. Mr Shigimoto Kajihara to my left, Director of the Climate Policy Division at the ministry of the environment. Further to his left is Dr Klaus Müschen, Director at the Berlin City Council and the one responsible for the Climate Protection Programme and at the far left we have Mr Yuri Onodera, he is climate campaigner of Friends of the Earth International. To my right Prof Morishima of IGES and Mr Schafhausen from the German Ministry of Environment.

This is supposed to be a more intimate talk about climate policy, about possible cooperation between Japan and Germany and also the sponsors from Northrhine-Westfalia where the Wuppertal Institute is located. The amount of questions we received has been overwhelming. Please be patient and forgive me if I might not be able to pose all of the questions to the panel.The first question goes directly to Mr Kajihara,

Question: Some of the questions were concerned with the performance of Japan regarding climate protection and the reduction of greenhouse gases

(GHGs). Will Japan make it? Someone from the audience asked if Japan should not quit the Kyoto Protocol because this person had the impression that Japan will not reach its target.

Answer from Mr Kajihara, Ministry for the Environment Japan: We need to, first of all, think of the positioning of the protocol. At least, at the Ministry of Environment, we do not believe that this is the ultimate goal looking at the IPCC reports. As we go toward 2050, we will need a significantcy higher reduction. The Kyoto Protocol is just one step toward that goal. So this very first step should be realised. In April of this year, we have developed the Kyoto Protocol target achievment plan that was decided upon by our cabinet. Many measures are listed in the plan which need to be put into place one by one. On order to reach the target we need to steadfastly implement the measures as listed and eco-tax is listed for this purpose. We would like to exercise as much leadership as possible for the time frame beyond the commitment period.

Answer from Yuri Onodera, Friends of the Earth Japan: I would like to review the first phase of the national plan to implement the Kyoto Protocol. The revised domestic targets are to be achieved through various efforts by different sectors and through public awareness. My organisation is introducing an advanced programme that has been successfully implemented in Germany. Through the support from the Ministry of the Environment this year, we are helping to implement energy saving measures in 67 elementary schools in Tokyo. Having said that, one of the most important elements which is still missing is a long term goal to prevent dangerous climate change. The European Union has adapted their goal to limit global temperature rise below 2 degrees within this century. Governments like Germany and the UK now have long-term emissions reduction targets that go far beyond the current Kyoto targets.

Preventing climate change requires enormous and continuous committments of NGOs, business and the whole Japanese society. The United Nations climate goal is clearly a process lead by the European Union and countries such as Germany. I must say, however, that I am not picturing the EU as the champion for the environment or human rights. Their policies are sometimes detrimental to the global environment and sometimes even confusing when the 25 countires are crowding around one table and the signals are mixed. But on the other hand, in the area of climate change policy it is undeniable that the EU has been the driving force for the progress of international policies.

During many UN talks our Japanese government belonged to a different negotiating group, the so-called JUSSCANNZ. For us the United States of America is the principle ally for foreign policy, for security and economic liasons. However, it is also undeniable, that there are things in common between the German, European and Japanese circumstances. Both have started to feel the impacts of climate change through floods, heat waves and taifuns. There is wide public support to take further actions to tackle climate change. We both have advanced clean energy technologies with rich potentials and opportunites to produce renewable energy from domestic sources.

Given the likelihood of inaction on the side of the current US government, in the foreseeable future it was therefore a very bold step taken by our Prime Minister when he decided to ratify the Kyoto Protocol after the US withdrawl. Later this month in Montreal, Canada comes the beginning of a new round of the UN climate talks to negotiate the next steps beyond the year 2012. European and the Canadian governments are committed to build the future based upon the Kyoto Protocol. I sincerly urge our government to join forces and to work closely with the other leading governments and become one of the leading nations to truly reduce emissions and therefore prevent climate change. We know that the current government policies are not enough to meet the mere 6 percent reduction target let alone 50 to 60 percent reduction required for the long term. I believe there is a

good potential for policy makers both in Japan and Germany and Europe to collaborate. Today many Japanese businesses are already involved or are closely monitoring the development of the European Emissions Trading Scheme.

Solving climate change is an enormous challenge for everyone. It requires new ideas, innovative means and approaches and we have already stepped into uncharted territory when deferred from the United States. I would like to see closer collaboration between at all levels, between Japan and Germany.

Question: This question was directed to our participant from Hannover but since she is not on the podium I would like to give it to Dr Müschen who is from the city of Berlin. The participation in ICLEI by Japanese local governments decreasing and the gap between large and small cities may be responsible for that. Do yo think they should be treated differently?

Answer from Dr Müschen, City of Berlin: I would like to give a few remarks on the debate we had today and yesterday. One major point is the networking between the cities. I think it does not matter if you have a large or a small city, the goals and the targets we have to reach are the same. It is a question for national governments and international bodies to support the administrations on the local level in order to change to a more sustainable society. Secondly, we have to use the intruments we already have. As we heard today, there are many methods and we have to talk about these best practise methods in networks such as ICLEI or Climate Alliance. Berlin joined these two networks at the beginning of the ninetees with a rather heavy goal to reduce the CO_2 emissions by 50 percent. Very soon we realised that we could not reach this 50 percent target by 2010. But we set the goal to reach 25 percent and at the moment we have reduced already by 14 percent. That means developing the market for energy services and contracting and performance contracting is one of the examples where we saved a lot of energy.

To conclude, one thing is that we have to talk about is lifestyle. I completely agree with the remarks of Mr Rocholl regarding transport and the use of big cars in the city. If we don't change our lifestyle, then the price for energy will be the driving force to change us. If we are not able to voluntarily change to a more sustainable energy use, then the market will do it for us.

Question: I have had several comments on the successful implementation of the eco-tax. These can be summarised into two questions for Mr

Schafhausen. The first question: How can it be done without nuclear power? People are surprised that Germany has very ambitious climate targets and at the same time it is phasing out nuclear power. The second question refers to emission rights, how was Germany able to allocate emission rights so unequally amongst the sectors?

Answer from Mr Schafhausen: Those are very good questions and I could talk for hours on these issues. It was decided by the present governenment, which will be replaced by the end of this month, that we will not have a special rule for allocating additional allowances when nuclear power plants are shut down. So we have to solve the problem in another way within the national allocation plan during the period 2008–2012. We have to solve it through the so-called newcomer rule by constructing very new and efficient power plants. This is in the planning stage. The power companies have announed that they will construct new, very efficient power plants including lignite fired plants as well as gas fired power plants. But these are not the only possibillites. There are also renewables. And as I said yesterday, we are expecting a very rapid increase of power produced by renewables. That includes wind, solar, biomass and geothermal energy. We cannot forget the demand and that forces us to beome more efficient in this regard. So it will be a mixture of different approaches supply as well as demand oriented and we are very close to our target. At the moment we have a 19.2 percent reduction of GHGs in Germany so the difference is 1.8 percent. We are much closer to our target than other states of the EU. We will present the concrete plan with our second national allocation plan to the Commission in June 2006.

Phasing out of nuclear energy is an ongoing process until the year 2022. But in the second committment period, many large nuclear power plants in Germany will be shut down and therefore we have to develop a strategy that deals not only with energy security but also with climate change.

The question is how to deal with the different sectors. The emissions trading scheme in Germany covers energy intensive installations mainly in the industry and energy sectors. We also have some installations from consumers, but mainly it is energy and industry. The other sectors are treated by different measures. In private households we use command and control. We have building standards. We use economic incentives such as subsidies and soft loans with very low interest rates for the rennovation of existing buildings and houses. We use the eco-tax especially on transport and power. You will find that the national climate change programme has a lot of different instruments. Our idea is to use different instruments in the different sectors, not only for private households but also for transport,

eco-tax, subsidies etc. Please let me know if you want more information on that. The last decision by the Federal Cabinet in July of this year focused on private households and transport.

Answer from Dr Hermann E. Ott: With regards to the nuclear power, the Wuppertal Institute has constructed a lot of scenarios on how to achieve the targets without nuclear power. Just recently we released a study on how the EU can achieve a 30 percent reduction without nuclear power. We will be happy to give you the link.

Question: BP has received a lot of praise on how it is conducting its business. One question refers to the consumers: how does BP approach its consumers what is BPs position on bio fuels.

Answer from Dr Lutz von Meyerinck: Let me start with the bio fuels. We have very succinct ideas about what we think about bio fuels short, medium and long term. Short term, we will follow the EU bio fuels mandate and will blend small amounts into it. In our diesel fuel we are blending a product called grape seed ester to 5 percent. We are blending bio ethanol up to 2 percent.

That is basically what we are doing today and that will increase some over the next years because that is what the directive mandates. There is also a tax break for doing this. For the medium term, we will look into a product called BTL. We convert biomass into liquid and make liquid fuels out of that. We believe that will be ready by 2010. We also believe that this is the best way forward. For the long term, we are looking into hydrogen, that is not a bio component and that is still much into the future. One thing I would like to warn you about the idea of bio fuels; don't be mislead by people telling you that you can make bio fuel and then use it in a niche market everywhere. We have seen it happen everytime when there is a new fuel introduced. People think that if you can produce it small scale, you can alsoproduce it large scale. In principle industry can do a lot large scale, but it takes time to convert the refining industry to doing it. Basically what we don't want is what we see in the US now. The US is one big niche market with 28 different grades of fuel. It has all been manufactured for particular states and it is not efficient and it is not leading in the right direction. We would rather go a little slower and then go as broad as we can because over all that satisfies more than just a small market.

That is a concept we are doing for Europe and I think we can export that to some extent to other areas around the world.

In terms of the consumer, we are improving lubricants because friction produces drag and the engine runs less smoothly. With a modern engine, you can reduce fuel consumption up to 5–7 percent. For you, as an individual, that is not something you can see, but when you operate a fleet, you can see a sharp reduction. When we converted the bus operators to low frictions oils, their diesel consumption went down by about 8–9 percent. We sold less diesel but we sold slightly more expensive oil.

We are managing their carbon risk of our commercial custoners. That would be a combination, if possible, of switching the fuel form either coal to oil, or oil to gas or acctually buying the certificates for running their business. So that is a combined offer that we do together with our traders.

Question: This question is directed at Prof Akio Morishima. It is question by a foreigner after having lived in several countries in Europe and Asia and two years in Japan: I have come to realise that the Japanese society and especially the young people are the least ecologically driven I know. The massive waste of plastic, paper and energy is amazing. The air conditioning is always on and the light as well as electical appliances. The car is used instead of a ten minute walk are only a few examples. Why is the Japanese government and society not tackling this wasteful behaviour? There is another question for Mr Onodera: Why aren't there more civil ecological groups in Japan addressing this issue?

Answer from Prof Morishima: It is a matter of education in the society that counts. For those people who were educated in the 1960s and onward were exposed to the American culture and they thought it was something to welcome and that the Americn lifestyle of mass production, mass consumption seems to be the right way of leading a life. They consider the American life style as an ideal. But the phrase "mutainai", meaning don't waste, is gaining ground. I would like to turn to the education system as well as NGOs to help to encourage this. I believe that the Japanese attitude will once again change so I am optomistic.

Question: With regards to households and buildings, there is a lot of waste with regards to the energy efficiency of buildings. We have seen a rise in emissions coming from this sector. Isn't it time to do more about that?

Answer from Mr Shigimoto Kajihara: The performance of buildings is regulated by the building code under the building standards law. Under this building code, it is necessary to make energy efficiency compulsory. But

unfortunately, the building code only sets forth a minnimum standard such that the highly advanced energy saving standards cannot be regulated. We have therefore set standards under another law, which is the law on energy conservation. Some low interest loans are available for rennovating and making houses more energy efficient. Little by little, very gradually, buildings are becoming more environmentally friendly even though it will take a long time for all the buildings to be made efficient. Perhaps tax incentives could be provided to push this forward. The revenue from the eco-tax could be used for such purposes. This is the proposal that the ministry for the environment is making right now. Looking at the individual houses as well as the larger buildings, a time span of 10 to 20 years is needed to go beyond the first committment period of the Kyoto protocol. In that case, it is not just certain buildings which should comply with much strickter regulation, but city planning must be taken into consideration as well. Moreover, the Kyoto Protocol Target achievment plan must be made more visible.

With regards to our youth and our culture, starting this year, the ministry of environment will be spending large amounts of money in awareness campaigns. We have a national campaign to wear lighter clothes in summer doing away with ties for example and we will set our air conditioners to a higher temperature. According to opinion polls, 95 percent of the Japanese people support this campaign. Half of the Japanese businesses support this. I myself, for the four months of summer, did not wear a jacket or a tie and

I would also go to meet with the Prime Minister. Gradually we will be able to see changes in our attitude and culture. Bit by bit we will raise awareness and change the attitudes of the people.

Question: What can be done about the wasteful Japanese culture? Why are there so few ecological organisations in Japan?

Answer from Yuri Onodera: I will answer the second question first. There are many environmental NGOs in Japan on many levels who also focus on climate change. They organise many different activities in the Japanese society. Citizens must be involved in any endeavor to combat climate change. Perhaps this question comes from a non-Japanese as it was written in English. Perhaps the English speaking audience does not know how active the Japanese NGOs are at the various levels. It is very important to understand that a bottom up NGO approach is necessary in order to change peoples' mindset. We are providing ecological support to 67 primary schools in the Tokyo metropolitan area. These are long-term endeavors. We cannot change the mindset over night as this takes time. However, while we can try to change peoples' ways of thinking, it is important to understand that there is a limit to what we can do by ourselves. I think we will be able to support the political endeavor and raise awareness among our citizens otherwise we won't be able to achieve a major reduction in CO_2 emissions as a nation. Mr Shigimoto Kajihara mentioned earlier that the building standards as well as other standards must be more market oriented and that the consumers must have incentive to move forward otherwise we won't be able to trigger major change. We must enhance civic activities and call upon the government to change the policies, so that they support such change.

Question from Dr Hermann E. Ott: Time is up, but if you would allow me, I would like to pose just one more question to each of the panalists here: How can we improve climate policy through cooperation between Japan and Germany?

Answer from Mr Schafhausen: Through the exchange of experiences and information during the last two days, I learned that our two countries have many similarities. What we could learn from Japan is to make use of the top runner approach. This is already under discussion. I would like to see the emissions trading scheme in Japan and I would also like to see the eco-tax find its way into Japanese policy.

Answer from Prof Mosrshima: The risk and danger of climate change is not fully understood except by those people who are here today. This has to be understood first, otherwise the policies could face opposition. Therefore we have to increase awareness. Based upon what we have learned from Germany, we can identify specific solutions to be communicated to the public. People must understand the threat and danger of global warming. For those engaged in policy formulation, we are often frustrated that no matter how much we try, they don't understand.

Answer from Mr Onodera: As for the environmental NGOs this may sound repertitive, but as Prof Morishima has mentioned, people tend to think that global warming is happening not now, but 100 years in the future. But the urgency of this issue must be widely understood. Japan needs to be fully aware of the urgency of climate change not least because Japan itself will be impacted. There were so many taifuns hitting Japan last year. It was a record year to demonstrate how accurately the impact of global warming was felt in our daily lives. We need to come up with an adaptation programme in order to mitigate this impact. The local governments and organisations who are directly impacted by these changes hold the key.

How should Japan and Germany cooperate in the future? The eco-tax needs to be introduced in Japan soon. On the other hand, for further reduction, we need to have a domestic emissions trading system in order to estab-

lish a market for that and if we can see the linkage with the European system we will have very effective instruments for policy making. Civil society in both Japan and Germany should work together to develop groundbreaking ideas.

Answer from Dr Lutz von Meyerink: I think we could learn a lot about voluntary schemes from Japan and I know you might be asking yourselves why I am talking about voluntary schemes. We have the emissions trading scheme in Europe and it will be applied to industry. But don't forget, there are small-scale industries and they should also make a contribution to climate change policy. And we can't put them into the emissions trading scheme, we are actually advocating to take them out of the ETS because they make it too comlex. That is where a voluntary scheme could work. And I am particularly impressed about the quality of the monitoring you seem to be doing as far as I can see in Japan. That is one of the reasons why the German voluntary system failed in the past. We had no real transparent monitoring system in place. If would be very interesting to discuss how a good monitorong system should work.

Answer from Dr Müschen: I have two points: One point is to use the twinning programmes between cities and to make use of existing networks and institutions such as the energy agencies in Germany who advise on how to become more energy efficient.

The second point is we have to be sure that the people are truly working together because, at the end of the day, it is people who make up the institutions. Cooperation between individuals is very important.

Answer from Mr Kajihara: All the different ways for cooperation between Japan and Germany mentioned by the speakers here today are very important. On this occasion, I have learned a lot. Germany is about to achieve 20 percent reduction indicating clearly that the technology is there. Many people think that the prevetion of climate change is a daunting challenge. People are afraid that the measures to counter global warming would adversely affect the economy. At least that is what the opponents say. But the solutions are already available. We can already identify and explain each concrete solution. If it could be shared, then eventually all the stakeholders, the people, the industry can be convinced. Global warming is beyond the capacity of two countries, Japan and Germany alone. We also have to turn to developing countries encouraging them to be part of the Kyoto Protocol. They must be invited. The fact that we have solutions has to be shared

between Japan and Germany and these must be demonstrated not only locally but also internationally. That would be the greatest achievement that we can expect through the cooperation between Japan and Germany.

Answer from Dr Hermann E. Ott: I would dare to say that Japan and German hold the key to climate change. There are, of course, also the two big powers, the United States and China.They have much larger emissions than Japan and Germany, but they are also, for various reasons, not active in climate protection at the moment. The US, because it is unwilling to do so and China, because it is difficult to do so. Japan and Germany are both very highly developed countries. We have got the technologies and we have, which is perhaps more important, the social systems in place. We have got the social and human knowledge to set the world — and certainly Japan and Germany — on a different path. If we do it, then the rest of the world will follow. Most people in the world want to do something but most of them are in despair, because they don't see how to do it. Japan and Gemany both can show the way. If the workshop yesterday and the symposium today have contributed to this end, I would be very happy. Happy because we would have achieved our goal, as this event is part of the science programme of the German year in Japan 2005/2006. I think we certainly have achieved much in terms of our mutual understanding and in fostering relations between Japan and Germany.

I would like to extend my heartfelt thanks to everybody who is here and who was here, and to thank the staff at IGES. Many of them are working behind the scenes. I would like to thank my own staff from the Wuppertal Institute. Two of them have come with me here. I would like to thank the interpreters. It is a tough job to translate all this. I would like to thank the sponsors, the German government, the Japanese Environment Ministry and the government of Northrhine-Westphalia. I would also like to thank our partners from IGES, Prof Morishima and Mr Takeuchi who made all this possible. I hope this bodes well for the future, that we do cooperate between our countries and between our institutions and set the world on a different path. Thank you very much.

Workshop

Climate Policy in Japan and Germany

Participation of Stakeholders in Policy Making

Greetings

Dr Hermann E. Ott

I would like to welcome you on behalf of the Wuppertal Institute, the Institute for Global Environmental Strategies (IGES) and the government of Northrhine-Westphalia who together with the German and Japanese Enviroment Ministries are hosting this event.

This programme is taking place within the context of the year "Germany in Japan 2005/2006". This is a very important event for the German government as the goal is for Germany to be much better known in terms of its economy, culture and science. From what I have seen so far, I think this is the case. There are several hundred events taking place. Our conference here "Climate Policy 2005 and Beyond — Japanese/German Impulses" is part of the science pillar. I am very confident that this is going to be an important and worthwhile contribution.

This event consists of two parts: the workshop and the conference. Whereas the conference is public, this workshop is a private meeting. Private in the sense that only those we invited are here. We have invited experts from their respective fields and we sincerely hope that this is not a one-time event but that this can be the beginning of discussions and cooperation in the future. We hope to enhance cooperation between Japan and Germany in the field of business, local communities and non-governmental organisations. We would like to exchange experiences and information in this workshop that will lead to more cooperation in the future.

Prof Morishima

Good morning Mr Schafhausen and distinguished participants from Germany and Japan. As all of us know this is part of "Germany Year in Japan" and I would like to express my sincere gratitude to the government of Northrhine-Westphalia and the German Environment Ministry as well as the Japanese Ministry of Environment for supporting this event. This year, the German government is introducing Germany to Japan. Of course Germany is well known in Japan for its arts, technology and industry. Last

year I visited the Berlin office of the Wupperal Institute and we discussed the organisation of this event. The Wuppertal Institute and IGES organised a similar event in the year 2000. The purpose of the event was to exchange ideas and experiences in relation to climate policies. In March of 2000 we held the first conference in Tokyo when Germany had just introduced the eco-tax and the emissions trading scheme. We learned a great deal from the German experience. Tomorrow we will discuss it again.

The second conference was held in November of the same year in Wuppertal and there the Japanese manufacturing companies illustrated the Japanese experience of how these companies can contribute to energy efficiency and compete in the global market. We had heated discussions there. We are looking forward to further exchange of ideas and experiences from both countries.

In the 1970s and early 1980s Japan was dealing with heavy industrial pollution. At that time Germany was far behind us but in the 1990s Germany caught up and took the lead in the area of recycling. We can advance if we exchange our best practise experiences. Policy is not made by the government alone, it is made also by the stakeholders including NGOs and the industry. In terms of climate change, in Japan we have done a lot in terms of the energy efficiency of our electric appliances and we are the worlds largest

producer of solar panels. In that sense we can be proud. But when it comes to the energy efficiency and energy recycling, we are far behind Germany. In that sense, I think today's discussion will be very beneficial.

Franzjosef Schafhausen

It is an honour and pleasure for me to be in Tokyo to talk about climate change policy and exchange exeriences between Germany and Japan. At the Federal Ministry for the Environment in Germany, I am responsible for the national climate change programme and for its linkage to the European one and the international regime at the UNFCCC as well as the Kyoto Protocol. I am also responsible for the implementaiton of the emissions trading scheme and the flexible mechanisms in Germany.

I would like to thank Prof Morishima and his team for the excellent preparation of the workshop and tomorrows conference. We are concerned not only with what will go on beyond 2005 what will go on beyond 2012. The business sector in Germany is asking for a clear framework in order to take decisions on investment. Not only to link the new power plants to the grid, but also to deal with new production capacity in Germany. I can assure you that we also can learn from Japan.

I will try to deal with those issues later on. As you all perhaps know, climate change has a very long tradition in Germany. Combating the global green house effect is one of the major issues of Germany's environmental policy.

The national climate change programme started at the beginning of the 1990s and climate change policy will remain a core issue under the new government that will be established by the end of next month. Since 1990, the cabinte passed 6 decisions on climate change policy to develop and update the climate change programme. The last decision, concerning private households and transport was taken in July of this year due to the the implementation of the emissions trading scheme. So industry and energy is covered by emissions trading. In addition to that, we have now focused our interest on the remaining sectors: private households, transport and small consumers.

Under the climate change programme, the interministerial working group on CO_2 reduction was established in June 1990. All Ministries that carry any responsibility in the field of climate change are in this working group of which I am the chair. We have 7 sub groups dealing with different issues

such as energy, transport, buildings, new technologies, agriculture and forestry, the greenhouse gas (GHG) inventories, joint implementation and CDM, and the linkage between the so called flexible mechanisms and the EU emissions trading scheme.

Ambitious targets have been defined, not only in terms of GHG reduction, but also for the role of renewable energy and energy efficieny and the so-called CHP, combined heat and power production. The time frame is not only 2012 but also 2020 and 2050 so we have mid and long term targets in Germany. We have decided on a broad package of policies and measures that have been implemented under the national climate change programme covering all sectors, industry, energy, transport, private households and small consumers and all GHGs. There are specific rules for the reduction of CO_2 but also N_2O CH_4 and the so-called F gases.

Our policies cover an entire catalogue of measures: command and control, economic incentives such as the eco-tax, the emissions trading scheme, subsidies and many soft measures. These soft measures are very important for the implementation of climate protection in Germany and consist of information, consultation, informing the decision makers. The result is –19.2 percent as compared to 1990 levels. But, I have to say that was not only the role of the federal government, the present positive balance reflects the involvement of all stakeholders on all levels of the economy and society in Germany. Climate change policy in Germany is based on a broad consensus. All political parties are of the opinion that climate change policy is a must. There is no way out. To be very frank, yes we have a lot of contoversial discussions, there are some conflicts because of the fact that climate change policy is mostly energy related, for example phasing out of nuclear energy and the switch from high carbon energies to energies with a low carbon content.

Our tradition in Germany as a coal country is very well known all around the world. But, renewables have been a success story during the last ten years. Which means not only a reduction of GHGs but also the creation of new jobs and economic growth. We are indeed competing with Japan for the number one place in the production of solar panels. At this moment, we have the feeling that we are the number one producer, not Japan. But it is good to compete with Japan on the production of fotovoltaics.

Demand side measures and initiatives are also under discussion. The top runner concept of Japan is very well known in Germany and discussions about how this can be tranfered into the German context are now under way. We would like to make use of this approach in Germany and perhaps in Europe.

Combating climate change needs a global strategy. Acting alone will not be enough to solve the problem. Therefore, the United Nations Convention Framework on Climate Change and the Kyoto Protocol are indespensable corner stones. Clear and ambitious targets in absolute terms, clear timeframes, a package of coordinated policies and measures on a multilateral basis are needed as well as the use of the so-called flexible mechanisms. That, in my view is the right way to deal with the challenge mankind is faced with. Initiatives and activities on a totally voluntary basis and bilateral non-binding agreements are not enough to solve the problems and to overcome the barriers.

Having a look at the trends and the emissions all around the world, there is no room and no reason to realx. The opposite is true. GHG inventories provide us with some bad news if we compare the 1990 levels and the 2004 levels: OECD +16 percent, non-Annex1 + 75 percent, China + 95 percent, the world + 36 percent. Only the emissions of the countries in transition have reduced their output by 36 percent compared to the 1990 level. Nevertheless, emissions in countries of the former Soviet Union are now on the rise.

Climate change is a great opportunity to make our economies and societies more future oriented and make the change form a totally unsustainable path to a more sustainable one in a step-by-step process. This will create jobs, economic growth and innovation. We should not believe voices that state that climate protection will destroy our society and our economies. The contrary is true. We will only succeed if we cooperate multilateraly exchanging information and experiences between the different countries and players. Therefore, workshops and conferences such as ours are so important. There is an urgent need for action. Let us work together. Thank you very much.

Assessment of the current situation of the stakeholders in Japan and Germany

Japan: YASUKO MATSUMOTO

I would like to focus today on environmental NGOs. As of end of 2002, there were 2,600 NGOs engaged in environmental conservation in Japan. If you take a look at the characteristics of the Japanese environmental NGO, the annual budget size is not that significant. Many of the NGOs are under-

staffed or have no permanent staff and this greatly restricts their activities. As for the climate related NGOs, there are those that advocate various policies, then others are specialised on particular topics such as Kiko Network, FoE, Greepeace, ISEP etc. They focus on the environment and climate and at the same time they advocate various policy measures.

In the wake of COP 3 in 1997, we saw various changes surrounding NGOs. The awareness on the part of the media as well as the administration changed to a more positive direction. Climate Action Network (CAN) became very active through the Japanese citizens and other NGOs. Thanks to the internet, information obtained hitherto only by international NGOs are now accessable to all the NGOs.

More and more NGOs are capable of advocating various policies to the government. In 2004 the citizens began a pilot project for alternative and sustainable scenarios published through ISEP as the secretariat. Various environment NGOs and professionals got together to develop policy advocation against the government regarding energy supply. This project called for an open debate involving citizens. All of these measures are not sufficient, but they are a start. As a result, in Japan, whether NGOs are starting to have more impact on the decision making process or not, can they function in terms of monitoring? That is a questoin I would like to raise.

Let us take a look at three major policy decisions made by the government with regards to climate change after COP 3. The government came up with a guideline against global warming in 1998. Secondly, in 2002 this guideline was revised and then in 2005 the programme to achieve the Kyoto target was newly formulated. The data presented as a base for the reduction goal was not sufficiently transparent. Therefore, experts and citizens found it difficult to varify those numbers. The Japanese government always has this characteristic of intransparency in presenting programmes and policies, resulting in the fact that NGOs cannot verify the data. It was very difficult to have a discussion based on scientific data. In 2004, Kiko Network demanded the disclosure of information and requested the calculation method as well as the basis for arriving at those targets. This request for information was quite limited in scope, but it was dislcosed. In 2005 for the first time, the calculation method and what this calculation was based on for Kyoto target achievement plan were presented by the government. This is one step forward. It is difficult to discern if this was due to the approach of the NGOs, but I believe some influence was excercised by them. This shows that the status of the NGOs has improved. In terms of the Kyoto Protocol Achievement Plan, we have been lobbying to have a report on the reduction volume. This report is now included in the official government report. I do believe it is most probably because the NGOs vehemently fought for this.

Do NGOs in Japan have had some preventive influence in the area of climate change? To a certain extent, I would say yes. But this is not sufficient. What is the reason for the insufficiency? There are some structural problems. Amongst the government ministries, and the agencies, the coordination between the government and the other stakeholders, there is a salient characteristic in Japan especially in the energy sector: it is very unclear in the decision making process, where the responsiblility lies. There is no particpation of the citizens and no disclosure of information to the outside. There is no opportunity for NGOs to excercise influence. Information disclosure is a prerequisite for effective NGO participation in the decision making process. In Europe, this is protected as a right. In Japan, the view is that this is a government service. This may be rebuttled later by the government officials. But then I would like to hear their views.

We can see only a formalistic process to include the citizens. The timing for public comments is, in most cases, after the decision has been made. It is quite intransparent as to how any public comments may be reflected into a modification process. The period of the public comment process is too short. So it is quite difficult for NGOs to effectively utilize this process.

What are the issues and challenges for the NGOs in the climate change area? Most importantly, we need to have the NGOs become more aware of their rights and the principle of equality among the actors. To secure equality among the actors, we need to share information. This is key. The scientists and experts willing to cooperate with NGOs are increasing in number and this needs to continue.

In Japan it is quite difficult to have a nationwide campaign for climate change. I would like to hear good advice from Germany on this. We have local NGOs who are quite active in local communities and they are participating in the decision making process of the local governments. However, local and larger NGOs need to forge good working relationships. This is what I would like to strongly advocate. We must have financial independence and become more self-reliant, autonomous and independent. We have difficulty in finding partners within government and corporations because many times we oppose them. Since we receive financial support from government or corporataions, we cannot critisize them. Sometimes businesses and government try to distinguish between "good" and "bad" NGOs. This is something that needs to be remedied.

Germany: Martin Rocholl

If I would have told you 5 years ago that climate change could result in an entire US city having to be evacuated because it would be completely flooded after a major hurricane, all of you would have told me that I am a crazy environmentalist, telling horror-stories. But this has become reality. Unable to believe what was happening, we have witnessed exactly this scenario not long ago in New Orleans. A disaster so big that even the richest nation in the world was unable to deal with it and hundreds of people were dying and chaos prevailed for days.

Europe has also seen a constantly increasing amount of extreme weather events, with cities flooded, whole regions suffering extreme drought and even hundreds of — mostly older — citizens dying from extreme summer-heat.

Still, even today, I would be careful to make a direct link to climate change. What we see could still be a statistical exception. We might simply experience a period of extreme weather events which will be over soon. But what if not? What, if this is actually a trend? What if these are really the first signs of climate change? I truly hope that they are not. But if they are, we are witnessing a dramatic change in the world's climate, which will result

in enormous future disasters from extreme weather events, far beyond our current imagination.

It is this context, in which I give you my input on stakeholder participation on climate change issues. I truly hope that you understand and excuse my impatience.

Current status of stakeholder participation

When looking at stakeholder participation in climate change issues, we must differentiate at least three rather different groups:

Industry

The lobby-work and stakeholder participation of industry is driven by their legitimate goal to make profits. In the best case, lobby-work pays off directly because industry can prevent legislation which would have negative financial effects on their relevant industries or because they can promote beneficial legislation. With this direct link, it is logic that industry is able and willing to pay a considerable amount of money for their representation in stakeholder processes. In Brussels, the European capital, this results in a rather big imbalance: for example, we have about 150 representatives of environmental organisations facing more than 10.000 industry lobbyists.

Industry is, however, not a single block and not all industry groups work in the same direction. There is a growing number of industries, such as solar or wind power industry and to some extend IT, which can have similar interests as environmental groups. The major industrial lobby groups in Europe are, however, still dominated by rather old fashion industries, such as the oil or car industry. Their influence on climate policies is not positive.

Cities

Cities are in an interesting interim position. To some extend, they are lobby groups when it comes to bigger political processes — such as the climate negotiations or national climate policy. On the other hand, they can implement policies themselves.

With the local agenda 21 processes, cities have conducted their own, often very successful, participation process and have contributed considerably to the efforts of reducing CO_2 emissions. Many interesting projects on energy

saving, energy efficiency and renewables are conducted by progressive cities and their governments. We will hear several encouraging examples during this workshop and the conference.

Beyond that, however, also cities need a better political framework to go beyond what can be achieved under today's political and economic framework. An ecological tax reform would, for example, make energy saving projects in housing much more profitable. In this context, cities must be interested to lobby on the national and international level for better policies. In this area, I see possibilities for closer cooperation and common interests with NGOs.

NGOs

It took European NGOs decades of environmental activism and the building up of a large membership base, before they were taken seriously in the political context. I believe this is important to notice when we compare the situation of NGOs in Germany and Japan. NGOs also had to learn how to build coalitions, for example with trade unions and progressive industry.

Today, NGOs in Germany and Europe have plenty possibilities to participate in stakeholder meetings. At the Friends of the Earth Europe office in Brussels, we receive far more invitations to stakeholder meetings and consultation than we have time to attend. The same is true for BUND, FoEE's German member group and even in the local context as well. NGOs by now are also strong enough to demand access to decision makers, where participation processes do not exist. We can therefore say that in Europe we have little problems to voice our concerns. The big question is however: how much are we listened to? How much can we really influence politics with our participation in stakeholder processes?

The picture is indeed really mixed. While we can influence environmental legislation and policy, it is much more difficult to have a say in energy, transport, agricultural or economic policies. In the European Union, currently economic problems and the high unemployment are dominating the debate and environmental NGOs find themselves being marginalized. In this context, the EU is even in danger of going back to old fashion development models, arguing that the economy must first grow and only afterwards we can take care of the environment. From the view-point of environmental NGOs, this would be a very inefficient and expensive method of environmental protection, because it is much cheaper to take the environment into consideration from the beginning, rather than doing expensive clean-up afterwards.

Key functions of environmental NGOs

Contribution to better governance

It is by now widely accepted that the participation of environmental NGOs in Europe contributes to better governance. Governments understand that the early involvement of NGOs often improves decision making and helps them to avoid mistakes. This is true for other stakeholders — such as local governments — as well. Generally, a political culture is slowly developing, which involves stakeholders in policy making at an early stage.

Even with this positive trend, one has, however, still to carefully differentiate between stakeholder processes, which are done pro forma and those which really allow to influence political decisions.

Ideas and impulses

Environmental NGOs started to talk about the potential of solar and wind energy already more than 20 years ago. At that time, we were looked upon as idealistic dreamers. By now, wind energy has an important economic potential, helps to create jobs and reduces CO_2 emissions. Similar things can be said about solar energy.

NGOs have an important role to play to make society aware of the potential of new technologies or new approaches (such as an ecological tax reform, which was introduced in Germany after a major NGO campaign).

Representation of nature and future generations

In opposition to economic interest, nature and future generations are easily forgotten in the political process. This is at the end against the interests of the society as a whole. It is therefore the role of environmental NGOs to represent the interest of nature and future generations in the public and in political processes. This is one of the key reasons why environmental NGOs can and must demand equal access to decision makers. Good governance must take into consideration that an intact environment is the basis for any economic activity and that we must preserve this base also for future generations.

Early warning function

NGOs have had and always will fulfil an "early warning" function. The warning of NGOs that pesticides and other dangerous chemicals can have

negative effects on people and the environment have often prevented or stopped the use of poisonous substances. Often, environmental NGOs have been able to stop mega-projects (such as big highway projects), which would have been not only an environmental disaster but also economically not viable.

This function has, however, also be fulfilled with care. Too much ringing of the alarm bell can result in the society not listening anymore. Still, this "early warning function" has prevented our societies often enough from making major mistakes and will continue to play an important role.

The "early warning function" is, by the way, not a specific function of NGOs — other stakeholders often play a similar role in respect to the specific interest they represent.

Information and education

Informing the public about environmental processes and problems and educating people and students about the ecological challenge is a continuous and important task of environmental NGOs. Often, we also see ourselves on the role of building up democracy and civil society, helping and training people to fulfil the roles of NGOs in an open society.

Bringing people closer to the decision makers

Decision makers on the national and especially on the European level are in danger of taking decisions far away from the people who are effected. NGOs often help to bring the local and regional experience to decisions makers, thus helping them to make more qualified decision. Friends of the Earth Europe, for example, monitors the use of the EU's Structural and Cohesion Funds (approximately 33 billion Euro per year in subsidies for the poorer regions of Europe) on the local and regional level. Such experience can help to formulate more efficient, more sustainable programmes and even has helped to prevent corruption and fraud.

In international negotiations, we see it as our task to bring the demands of people directly to the decision makers in international conferences. This is often done with innovative and colourful demonstrations, such as the "Lifeboat" at the UN Climate negotiations in Bonn (2001) which was constructed out of the demands of thousands of people from around the world and dropped in front of the building where the negotiations took place.

Moving international processes forward

The global environmental governance system is not very well developed yet. Without the enthusiasm, the pressure and the lobby-activities of NGOs during international processes, often very little would happen. The progress is still painfully slow, but (environmental) NGOs have often played an important role in moving international negotiations, such as the negotiations on climate change or biosafety, forward.

Mobilizing the public — an important prerequisites for the influence of NGOs

The question how much the input of environmental NGOs is taken into consideration depends to a large extend on our ability to mobilize the public. This requires a wider acceptance in the population and the ability to push a subject enough so that its receives the attention of the media. While being already a challenge on the national level, on the European level, with more than 25 national media in the EU alone, it is a very big task.

In Germany, environmental NGOs lately run a very successful campaign for the introduction of particle-filters for diesel cars. While this demand had been ignored for many years, a well coordinated campaign managed to make the subject so "hot" that finally — and then very fast — political steps were taken to introduce particle filters for diesel cars in Germany. The

key elements of this campaign were a) that it was a well coordinate effort of a large coalition of German environmental NGOs and b) that the NGOs used in a clever way existing European legislation. They could prove that in several cities, the legal limits for diesel particles were not kept anymore and therefore could threaten the authorities with going to court.

Another example are the international climate negotiations. I believe that the fact that we have a Kyoto Protocol today largely is due to the activities of European NGOs in 2000 and 2001, which were able to mobilize the European public and give a clear message to politicians, that European citizens demand action on climate change.

Session 1 — Private Sector

Climate Protection — Assessing Obstacles and Opportunities for Business

Summary of the discussions
Chair – Franzjosef Schafhausen
Rapporteur – Dr Anselm Görres
Co-Rapporteur – Ms Rie Watanabe

Participants:

Mr Andreas Villar, Research Fellow, Wuppertal Institute

Dr Lutz v. Meyerinck, Director, HSSEQ BP Germany

Mr Masayuki Sasanouchi, Project General Manager,
Environmental Affairs Division, Toyota Motor Corporation

Mr. Markus Steigenberger, Head, International Campaigns,
Friends of the Earth Germany (BUND)

Mr Ikuo Nishimura, Manager, Global Environmental Policy Group,
Environment Department, Tokyo Electric Power Company (TEPCO)

Prof Dr Karl-Heinz Feuerherd, Kobe Yamate University,
formerly BASF Ltd. Japan

Mr Hironobu Nose, Group leader, Environmental Relations Group,
Division, Nippon Steel Corporation

Mr Johannes Lackmann, President, German Renewable Energy Federation

Mr Ryosuke Ugo, Chief Manager, Environmental Management Division,
Corporate Social Responsibility Promotion Unit, NEC Corporation

Dr Detlef F. Sprinz, Senior Fellow, Potsdam Institute for
Climate Impact Research

Mr. Shinichi Iioka, Programme Manager, IGES

There was a good mixture of participants from business, government, and research institutes. It should be noted that there was only one representative from the government, three representatives from research institutes, eight people representing traditional business and only one person representing the energies of the future.

Presentations made by Japanese industries revealed that there is still fierce opposition to the introduction of emissions trading from industry in Japan although Japanese companies have an interest and conduct a lot of overseas activities to acquire a number of emission certificates. They said that acquired certificates will be used for achieving the targets set by Keidanren's voluntary action plan, as this is a commitment to society.

Discussions focused mainly on the role of government and market and on the obstacles to raise energy efficiency, which were raised by Dr. Sprintz.

Regarding the role of government and the market, Dr. von Meyerinck argued that there is no one policy that fits all and technologies cannot be developed only by the market; that the government has a role to play, while Mr. Sasanouchi argued that technological innovation is enhanced through the market.

Regarding the obstacles to raise energy efficiency, one participant argued that an appropriate system to give the right signal to consumers is necessary since the biggest difficulties are ignorance and misinformation.

Another participant argued that the distribution of responsibility between consumers and producers is important. Again Japanese participants emphasized that technology will be a key to raise energy efficiency.

The discussions highlighted the difference of perception regarding the role of government and market (or business) between Germany and Japan. Japanese participants believe that only technology can provide a real solution to addressing climate change, which means that businesses that have the technological know-how will be able to solve the issue. This may be one factor to explain a persistent opposition by Japanese companies to the introduction of emissions trading and environmental tax, both of which represent the government-intervention approach. This is a point that should be closely examined. However, the possibility that the above interpretation was somehow misleading since there were no German participants from conventional energy intensive industries should be considered. For a clear picture, the balanced participation of conventional industries from both Germany and Japan is necessary.

Other than the above, hesitations by industries, even by German industries, to achieve much stricter targets is evident. And many barriers have been identified, including in information, legal and institutional settings. In order to overcome these barriers, to establish double win-win situations, the holistic approach was identified since participants shared the view that there is not one size that fits all solution. Double win-win approaches are necessary to create double win-win situations for conventional industries while in green industries this may be different. This could be also considered in the future through the participation of green and conventional industries.

While it is commendable what companies have achieved in terms of the measures they have taken in their own factories or installations, a high level debate about regulation and an intelligent division of labor between government and private industry is needed. While most of the work must be done by the markets, since markets can get things done in a way that no government ever could, the private sector will not reach the Kyoto targets through their initiative alone. Government and private industry must find a way to meet in the middle. Private industry must feel the pressure to change and this pressure, to a great extent can only come from the government.

Session 2 — Municipalities
Climate Policy in Japan and Germany

Climate Protection Policies in Municipalities: Japan/Germany
New impulses for:
- Know-how exchange between German and Japanese municipalities.
- Cooperation between institutions located in cities of both countries.

Summary of the discussions
Chair – Mr Harald Neitzel
Rapporteur – Dr Peter Pichl,
Co-Rapporteur – Mr Tsuneo Takeuchi

Participants:

Dr Eckart Würzner, Deputy Mayor, Heidelberg

Mr Koji Komaki, Director, Environmental Policy Division, Kumamoto

Mr Koichi Funabashi, Mayor, Kawagoe City

Mr Jun Miyata, Manager, Environmental Bureau, Sapporo City

Dr Klaus Müschen, Director, Agenda 21, Berlin

Mr Takahiko Kimura, Director, Environmental Policy Division, Tokyo

Ms Astrid Hoffmann-Kallen, Director Dept. Energy and Climate Protection, Hannover

Mr Hiroshi Shimotenma, Supervisor, Energy, Environment Policy Dept., Kuzumaki

Mr Harald Bayer, Head of Dept., Environment, Park Areas and Construction Affairs, Wuppertal

Mr Hiroshi Mizoguchi, Director of the Office for International Environmental Cooperation, Kitakyushu

Ms Gotelind Alber, Climate Alliance of European Cities

Ms Michie Kishigami, Director, Japan Office ICLEI — Local Governments for Sustainability

Mr Alexander Woitas, International Cooperation, CO2-Online Non-Profit-Making Ltd. Co.

Mr Masaru Nakajima, Coalition of Local Government for Environmental Initiative (COLGEI)

Ms Dörte Miosga, CO2-Online Non-Profit-Making Ltd. Co.

Ms Masami Kubo, Environmental Improvement Section, Uchiko Town

Mr Naoki Masuhara, Vice Secretary General, Coalition of Local Government for Environmental Initiative (COLGEI)

Mr Yusuke Matsuo, Researcher, IGES

The group discussed new impulses for German-Japanese co-operation in the areas of twin city programmes, joint implementation projects (biomass sites, insulation standards) and CO_2 reduction measures.

German and Japanese cities reported on the manifold climate protection activities in the area of building standards, renewable energy, traffic planning and information for citizens. Exceptions notwithstanding, the state of development in terms of environmental issues is generally comparable in both countries. As the discussion continued, it became visible where the viable opportunities for future cooperation lie and where our experiences can be put to best use in order to effectively reduce CO_2. Japan, just to give an example as to where some of the differences lie, is more advanced in its use of fuel cells than Germany, where a fuel cells project will start soon.

On the following pages is a detailed report from each municipality on the measures taken to reduce the use of energy. There were many brilliant and sophisticated approaches. The northern Japanese city of *Sapporo*, located in the province of Hokkaido has a unique system to use its above average snowfall as an energy source resulting in a 10 percent reduction per capita in CO_2 emissions. Considering the heavy snowfalls that periodically happen in large parts of Bavaria and other regions in Germany it is recommended to study this snow recycling system. Sapporo also organised an environmental marathon consisting of 700 lectures on environmental issues.

One of the most important measures undertaken by the city of *Berlin* was to substitute coal fired district heating with natural gas; and a solar roof

initiative was started in 1990. In addition to this, third party financing was applied to 1.300 public buildings resulting in energy savings of around 30 percent. The use of third party financing has great potential in general and is not being used to its fullest in either Germany nor Japan. This is certainly a subject for further co-operation.

All this has resulted in a comprehensive CO_2 reduction of 14 percent until 2002 in Berlin. Thus there is justified hope that the 25 percent reduction target set for 2010 can be reached.

District heating systems in Germany exist to a large extent using co-generation. District heating does exist in Japan, and co-generation is yet to be fully developed. Germany has done much in order to promote co-generation as a consequence of the liberalisation of the energy market. Here is another opportunity to work together.

The city of *Tokyo* reported that it has experienced an increase in temperature of 3 degrees Celsius during the last one hundred years and a rise in CO_2 emissions of 24 percent since 1990. Among the measures to counter this, a total of 1.2 MW photovoltaic panels were installed and an ordinance on energy savings will become law this year.

The city of *Wuppertal*, being one of the oldest industrialised cities in Europe with 15.000 industrial sites, has undertaken a wide range of climate protection measures. A climate change concept was created in 1995 with a 30% reduction target until 2010. In 2001 an eco audit was introduced and an energy round table exists since 1998. As one of the consequences, in 2003, the city of Wuppertal received the European Energy Award.

The Japanese city of *Kuzumaki* covers 78 percent of its energy needs using renewable energy. The target for the next years is set at 100 percent coverage; here energy efficiency will play a major role. An out of the ordinary policy for reaching this target is the use of manure for fuel. There are some small cities in Germany attempting to do the same. Germany and Japan should share their experiences on how this is managed. This is a good example of how sustainable energy on this level can be prepared and organised.

The only two cities that actively pursue climate protection activities within the twin city context are *Heidelberg* and *Kumamoto*. In cooperation with Heidelberg, an International Urban Environmental Conference was held in Kumamoto in 2002. Following this conference, nine eco-partnership working groups were established. Both cities are very active in climate protection policies. Heidelberg started its climate protection activities in 1991 including best practise dissemination, exercising influence on mass transport, climate protection cooperation with SMEs, eco-labelling and the dissemination of information. Kumamoto, located on the most southern island of Kyushu, adopted a CO_2 reduction plan in 1995. By 2004 the per capita reduction was measured at 5.6 percent

It was discussed that smaller cities should be an object of the twinning process because these cities do not have the financial means to be present at all the international environmental and climate protection conferences. Here, there is definitely more room to increase environmental cooperation. This is an issue that will be pursued in 2006 via a trilateral (USA, Germany and Japan) municipal project initiated by the German Environment Ministry.

The city of Hannover, having a reduction target of 25 percent for the period 1990–2005 works closely with local stakeholders and utilities in efficiency programmes, renewable energy and demand side management. Moreover, Hannover also carried out an energy audit showing that all the economic measures could assure a 60 percent reduction target by 2050.

Kitakyushu, also in southern Japan has a regional plan for GHG reduction already in force. The use of renewable energy is in progress amounting to a CO_2 reduction of 1.470 tons per year. A new local policy for creating an eco-industrial complex has been adopted. This includes 12 recycling plants and a CO_2 reduction of 175.000 tons per year.

The Agenda 21 process in Japan is as developed as its German counterpart, however, the introduction and enforcement of measures are problematic. It can be fruitful to cooperate and exchange ideas on this level. German municipalities are very well organised within ICLEI, the Climate Alliance or Energicité. In Japan, this is not entirely the case. A continuous exchange in this area could lead to more integration of Japanese municipalities in such

networks. Exchange of experiences between Japanese and German cities could be very easy through the use of the Internet. Japan proposed to link Internet sources in order to have easier access to methodologies that would enable municipalities to count greenhouse gas emissions (i.e. the new software developed by ICLEI). Funding for translation would be necessary for this exchange to be effective.

Furthermore, cooperation on the project level was discussed in the group. It was pointed out that governmental support exists in both countries, but that support for municipalities on the project level in Japan is still not as developed as would be necessary for pilot projects to be redirected to other municipalities.

The "CO2-Online" reduction campaign (financed by the German Environmental Ministry) is an online method giving information to thousands of energy users in Germany. This method hat the capacity to reveal online, whether private households are using too much energy and where the energy leak is located. Since CO2-Online works together with hundreds of partners, contacts, if desired, can be established to contractors to have the energy leak remedied. This is a method that could well be transferred into the Japanese context.

Gotelind Alber of Climate Alliance, Germany stressed that political commitment to climate change policy is crucial but that the Climate Alliance goal of a 50 percent GHG reduction had been too ambitious for its members and that a modification is therefore under consideration. She emphasised the use of such instruments as city partnerships and twinning programmes in order to intensify cooperation by, for example, setting joint targets and offering mutual assistance to meet those targets. It is also important for municipalities to attend international climate conferences in order to present their climate protection efforts and to increase the awareness of what is being done on the local level. Mr Nakajima of the Coalition of Local Government for Environmental Initiative (COLEGI) of Japan remarked that in Japan there is no framework for an integrated energy policy for local governments. In future, the decentralisation of the energy system will mark the turning point of the Japanese energy system.

During the course of the workshop, many concrete and viable ideas for future cooperation were voiced and discussed. Nevertheless there were some issues that were not addressed at this workshop, like transport and mutual projects on biomass and building insulation. These should be included in the agendas of future meetings.

Session 3 — Non-Governmental Organisation (NGOs)

NGO Involvement in Policy Making — How can Ccoperation between Japanese and German NGOs be improved? How can NGOs be better integrated in policy making?

Summary of the discussions
Chair – Dr Hermann E. Ott
Rapporteur – Martin Rocholl
Co-Rapporteur – Mr Yasu Ikari

Participants:

Dr Gabriela von Görne, Climate/Energy Unit, Greenpeace Germany

Ms Kimiko Hirata, Managing Director, Kiko Network

Mr Jürgen Schäfer, Member, Sustainable Europe Research Institute

Ms. Tomoko Hoshino, Project coordinator/Consultant,
Global Environment Information Centre

Dr Isa Ducke, Research Fellow, German Institute for Japanese Studies (DIJ)

Ms Mika Ohbayashi, Programme Director,
Institute for Energy Policy (ISEP)

Ms Nika Greger, German Society for Nature Conservation, Head,
Berlin Office

Mr Yuri Onodera, Friends of the Earth, Japan

Ms Yasuko Matsumoto, Kyoto University

Ms Takako Momoi, Japan Center for Climate Change Actions (JACCCA)

In Japan, the two dominant pillars of society are government and industry. NGOs play a minor role at best and are seen as a special interest group of a few people. That makes working as an NGO in Japan much more difficult than in the European context. While still having to fight for influence, NGOs in Europe are much more accepted in the mainstream of society. One reason may be — among others — the strong membership base with hundreds of thousands of members in Germany alone.

It was pointed out that European NGOs have a much easier situation since the culture of resistance and confrontation is much stronger in Germany and Europe. It is more accepted to confront the government and to resist it. This culture shapes NGOs in a different way. In Japan the opposite is true. Confrontation and resistance is seen as something negative. If one expects to cooperate, one does not criticize

How far are NGOs a part of the mainstream of society and how strong is their acceptance? Clearly, in Europe NGOs have more influence on mainstream society than Japanese NGOs, but it is unclear how deep this actually is. Europe is currently going through a difficult economic situation with high unemployment. It becomes more and more visible that politicians are starting to neglect environmental issues and go back to old-fashioned development models. Nevertheless, NGO culture is further developed than it is in Japan. Japanese NGOs maintain good relationships to the few politicians interested in environmental issues but the communication with the

industry sector and other politicians is difficult. At the Japanese Ministry for Economy, Trade and Industry (METI) there is a small section that works on renewable energy. NGOs do communicate with this department and NGOs do have access to the Ministry of Foreign Affairs (MOFA). However, Japanese NGOs have much more access to politicians at the local and regional levels such as in Tokyo, Kyushu and Sapporo.

A great potential for learning from each other became visible at the workshop on how environmental organisations have developed their position in society. Future cooperation and exchange on this issue could be very useful.

The legal status of NGOs was discussed at length. In Germany, there is not really a law for NGOs and it is very easy to start any kind of association as long as it stays within the legal system (e.g. one should not insult other people or engage in illegal activities). In Japan there is a special law for NGOs and the government asks in the application whether an NGO is beneficial for society. In Germany, this question comes up when asking for a tax-exempt status. This status is very important because many of the NGOs depend on individual membership contributions. The big incentive for people is the tax break. A person donates € 100 and gets € 40 back from the government. This assures financial independence of NGOs, independence from Government and company funding. This is not yet the case in Japan because there is no tax-exempt status for NGOs. It could be highly interesting for the Japanese NGOs, for the long-term development, to investigate this and cooperate on a political initiative.

Links to other organisations were also discussed. For German NGOs and for their general acceptance in society it has been very important to link with other parts of civil society. FOE Germany, for example, engaged in a campaign together with the Catholic Church on a plan for "Sustainable Germany". This greatly improved their status and acceptance in society. In Japan, the religious organisations may not be as obvious a partner as in Germany. But it could be interesting in the future to look at other societal players for cooperation. In Europe, NGOs cooperate with health organisations and trade unions. The cooperation with the trade unions was pivotal in getting the environmental tax reform in Germany accepted — with the trade unions arguing that such a reform makes sense because it creates jobs. There are many local citizens groups in Japan that are dealing with health and local environmental problems. Cooperating with theses players could be an interesting starting point for getting more into mainstream society.

On the subject of legitimacy, Japanese NGOs pointed out that they are often still seen as a small additional lobby group with one specific interest. In Europe, NGOs are sometimes under a similar pressure from industry in

particular. The membership issue is very important here. Environmental organisations in Germany have up to 300 to 400 thousand members. That is a very strong point. These organisations are seen to fulfil a role in society that, in our current system, is not being fulfilled by anyone else: Taking care of future generations and of the value of nature.

Since NGOs are not rich, the issue of funding was discussed intensively. Japanese as well as German NGOs do not receive the resources to the extent they need. It was discussed whether government funding was actually a good source of support for NGOs. It may be specific for Germany that governments tend to fund NGOs even if they criticize them. Government understands the function NGOs have in the political debate as something useful, even if it comes in the form of criticism. In Japan, however, NGOs that receive money from Government are not expected to criticize it — one does not criticize that hand that feeds. In terms of raising money through membership, in Japan, people tend to donate money to specific causes such as disaster relief, but do not tend to give money to advance more abstract causes. Furthermore, the rotation system in Japanese Bureaucracies may be a good means to prevent corruption, but it also does not foster building relationships with NGOs. However, because of this rotation system government officials rarely become experts. This is a void that NGOs could fill.

The group arrived at the conclusion that there is a lot to learn from each other. The DNR, for example, has devised an educational programme specifically to teach young people how to work professionally in an NGO. This raised quite some interest on the Japanese side and is just one of many practical examples.

One of the key environmental challenges for the future is the question of how to make our societies highly energy and resource efficient. The industrialised world needs to learn how to provide well-being with a drastically reduced amount of energy and resources. This can be done and will have multiple benefits, such as job creation, environmental protection, innovation and increased economic efficiency. It is, however, an enormous challenge for which there is a need to find allies in society. The municipalities could play a major role here because they can influence the production and use of energy and they can use their power as big purchasers of products and services, to name just two examples. Industry is also important. There is an enormous innovation potential in industry that must be set free by creating better economic and political conditions for eco-efficiency. NGOs could play a vital role in fostering such alliances through all sectors of society in Japan.

Creating an energy and resource efficient society is very much a Japanese-German issue. Japan is a high technology country and, just as Germany, it has some energy-efficiency technology that is extremely interesting for the rest of the world. All members of the group would be very pleased, if one of the biggest economies in the world — Japan — was joining Germany and Europe in starting the energy efficiency revolution. This would strengthen the possibility to achieve change. Further cooperation between stakeholders in Japan and Germany would therefore be very useful and beneficial.

Plenary Discussion

Comments/Discussion

Chair: Dr Hermann E. Ott

The floor is now open for comments and discussion. Please keep your comments brief as everyone is tired and wants to freshen up before going to dinner.

Comment from Dr. Lutz von Meyerinck, BP Germany: There were two areas that we covered in our workshop which haven't been mentioned but that are important now that the presentations have been given. Both have to do with municipalities. The first point being that Mr. Nishimura from Tokyo Power stated that there is a direct relationship between Tokyo Power and what is happening in the municipalities. The other point is on traffic management; if there is traffic congestion there is a significant rise in CO_2 emissions from idling cars.

Question from Dr Detlef Sprintz, Potsdam Institute for Climate Research directed at the environmental NGOs: Mr Rocholl mentioned that having access to the decision making process is not a problem, at least not for him in the German/European context, but there is the question of how effective NGOs are in terms of influencing policy. The essence of democracy is influencing elections and one of the strategies of environmental NGOs could be to become a decisive factor in some elections. Unfortunately I missed this from all the presentations this morning. Why is this not an interesting strategy?

Answer: We as NGOs do not want to be seen as political parties. If I go campaigning in Germany for this or for that party I might loose a large segment of my membership. While I would say that the overlap of the demands of the environmental movement and the Christian Democrats (CDU) is probably smaller than the overlap with the Greens, we are still happy to have people who vote for the CDU in our movement. We don't want to get too close to party politics. I think we have, however, interfered quite heavily with elections in giving recommendations on specific issues.

FOEE analysed a number of important environmental decisions of the European Parliament and made public which candidate voted how. We had some fierce and extremely angry responses from politicians as a result.

Comment from Ms Gotelind Alber, Climate Alliance for European Cities: I think this is an important issue because in terms of local elections, at least in Germany, influencing local elections is very rare compared to other countries such as Luxembourg or the Netherlands. Sometimes I have the feeling that in Germany, while there were a lot of experienced and qualified people collaborating with the government, due to milestones on the regional and national levels, NGOs have lost their interest on the local level. I think this would be an opportunity to regain this interest. This should be a topic of exchange between Germany and Japan. Local governments who want to get active in climate change policy need the push, debate and challenge from the NGOs.

Question from Mr Harald Neitzel, German Environment Ministry directed at the Business Session: Both countries, Germany and Japan are affected by the rise in energy costs. Mr Rocholl mentioned the importance of a strong economic framework to achieve ambitious climate protection goals. It does not look like energy prices will fall in the future. How does the private sector

assess this development and is this an important driving factor, without government intervention to speed up the turn over of energy efficiency and innovation?

Answer from Mr Sasanouchi, Toyota recognised the importance of energy efficiency. This is part of our business risk management. Our projection is that in 2050 the vehicle population will be twice the amount we have today. We are afraid that society would not allow us to continue with business as usual. Our overall image is important to us and to our business. Environmental image is part of the value of a company. And since oil prices continue to rise, we have to start thinking about alternative fuels as well as improving energy efficiency.

Answer from Dr. Lutz von Meyerinck, BP Germany: If the question is, will the high price of oil lead to more energy efficiency, then the answer is yes, of course it will. Fossil fuels are a finite resource. The crude oil prices we saw at the beginning of this century at 9.50 USD were definitely too low. They were too low to sustain the business in the first place and they might have given the wrong incentive. The more expensive crude oil becomes, the more existing sources (of crude oil) that had been given up in the past because their extraction was not profitable at USD 20 a barrel, can be tapped into again. These may be made accessible again if the price for crude stays at USD 50 a barrel. The price is not only driven because this is a finite resource. We are not opposed to higher prices because this will have a positive effect on climate change.

Comment from Dr Eckart Würzner, Mayor, Heidelberg: The driving forces in the private sector are not the global players. The driving forces behind climate protection are mostly the small and medium enterprises (SMEs). These organisations are more able to react on new strategies and new behaviour. The classic SMEs develop new turbines to produce wind energy etc. The big companies are waiting to see how the small ones are doing and when they grow very fast they integrate them into their companies. So the driving force is the SMEs. I think we have to reflect on how can we restructure our communications with these SMEs to stimulate them. This, in turn makes the large companies adjust their behaviour. Our experience on the local and regional levels has shown us that these SMEs are very active. There is no confrontation with NGOs. The directors of these SMEs are also very happy if the city supports them because most of them don't have an environmental or energy department. We give them concrete support by

conducting an energy or waste- management audit. We helped a new bakery that was set up in Heidelberg that now uses 35 percent less energy by recycling the heat from the electric ovens.

We have changed our strategies a lot over the last 15 years. We set up a regional energy agency. Through good communication, we are looking for the best employment programme. By encouraging retrofitting of buildings in the Rhine-Nekar region by 2 percent to 3 percent we can create 1000 new jobs. We communicated this programme principally as support for local SMEs but at the same time we are protecting the climate by promoting the right kinds of businesses. It is a matter of getting the right people together for the rights projects that creates the driving force.

Comment from Mr Schafhausen, German Environmental Ministry: There is no doubt about the role energy prices play. We have been fighting for decades to get higher energy prices. High energy prices make people aware of the cost of energy and the feasibility of different policies and activities to reduce consumption and this makes new technologies more attractive.

The higher energy price gives incentives not only to the producers but also to the consumer. Many consumers are not aware of their energy bills. But this is changing as the public debate on energy efficiency grows. From the environmental and climate protection point of view, high energy prices are a very important driver for more energy efficiency and for the change to future oriented technologies. That is also true for companies; they are aware of energy costs. And they are looking for ways to reduce those costs. In many cases, the driving force is not climate change, but the cost of energy. The German Environmental Ministry is working on disseminating more information. We are developing an energy passport. This obligatory passport gives information as to the energy efficiency of buildings. This would mean, that if you wanted to rent a new building, you would be given information as to the energy costs of using this building. This would affect the market price of the buildings and give incentive to become more efficient. So market oriented energy costs combined with measures from the government are a good example of how to deal with climate change.

Comment from Dr. Lutz von Meyerinck, BP Germany with regards to Dr Würzners comments: in principle, you are absolutely right. SMEs do develop new technologies. It is not a bad thing that they are then bought by the big companies because they receive investment that would not have been otherwise possible. Contrasting a little what Mr Görres was saying while summarising the business session, I actually did advocate government

intervention. We are one of the largest producer of solar panels in the world. There are two Japanese companies that are slightly ahead of us. It is very simple to see why solar panels made in Japan and why are we interested in this. This would not be the case without the support systems that we have in Germany and Japan. I see distinct areas of government intervention that are important and I support them. If you want to have break-through technologies, if you want have major leaps in technology development you can't leave that to market forces alone because it might take too long.

Comment from Mr Nakagima, Coalition of Local Government for Environmental Initiative (COLGEI): A very important point was made. There is a study group that was formed about 15 years ago called "Eco House Study Group". One of the members of this group was very interested in planting trees on the rooftops of buildings and they studied technology from Germany and started a company about 15 years ago. When this planting was started it didn't draw much attention or interest but since architects were included in this study group, more and more public buildings were enhanced with trees. The founder of the company had a hard time at the beginning, but eventually they started to receive venture capital and now it is a fast growing business. The networking of grass roots business deserves more attention because there is much potential for business opportunities.

Comments from Dr Martin Rocholl: With reference to the business session, Dr von Meryerinck admitted that solar and other alternative energies are subsidised. I would like to add that the coal sector in Germany is also heavily subsidised so clean energies are not the only ones receiving government money. Just for the record, I guess that most of the NGOs in this room would agree that nuclear power is not part of the solution but from a European level, I can say that there are still direct and hidden subsidies that go into this type of energy.

I would like to make a comment to Mr Sasanouchi from Toyota. You said that you are expecting the amount of cars being sold to double. At the same time we need to reduce CO_2 emissions by 50 percent in the same time-frame. So my conclusion is that cars should become 4 times as energy efficient as they are today. Now, will you do that as Toyota in the current economic framework or don't you need some form of legislation to help you to get there? Wouldn't it make a lot of sense to have that legislation now? I think the German companies today would be very happy if we would have forced them by legislation to make energy efficient cars. You are making them now

and they are not going to sell as many cars. There is a huge environmental as well as economic advantage to gain from legislation.

At the moment we are discussing moving from voluntary to mandatory legislation on the energy efficiency of cars and I can tell you that the car lobby is very resistant. This is also true for other areas. We need to change the tax system in order to have higher energy prices. Just a moment ago it was said that high energy prices are a good thing. 10 years ago they were too low with the result that much energy was wasted. 10 years ago the environmental organisations strongly advocated the introduction of a high energy tax in order to push innovation forward. Almost the entire industry was against it. If they would have done this, the money that is now going to the sheiks in Saudi Arabia would have been in our own pockets and innovation would have moved forward in leaps and bounds. Do we have to repeat this mistake for the next 10 years? Or should we change our tax system to push forward the next generation of innovation in this area? We clearly need economic and legislative framework. We need to rid ourselves of harmful subsidies, to change the tax system, and different research programmes. I think it is time for industry to change their position on that. I see it happening slowly but, to be honest, I am a little bit impatient.

Answer from Mr Sasanouchi, Toyota: I would like to make a clarification. Having the car park double by 2050 is not an absolute but rather a projection. 70 percent of the worlds' population cannot afford to drive a vehicle. In order to close this mobility divide, we project the car population will double by 2050.

Of course we recommend some legislation or legal framework. Sometimes we don't react positively to a change in the tax laws. Basically, our role is to develop the technology, to provide different options to the consumer. That is our major role. In Toyota, we have many different scenarios on how to achieve factor four. We made a model calculation for the year 2030. For this projection most of the cars should have doubled in efficiency compared to the current vehicles. Even though we produce such technology, we still cannot achieve our final target. So one of our technologies is bio-fuel or renewables. One of the concerns is that there will be a conflict between food and fuel supply. Another issue, when we produce bio fuel by using plants, we need four litres of water to produce one litre of bio-fuel.

Other than the obvious technology, we also look to other ways in which we can contribute to reduction of CO_2 in other areas for example by making a financial contribution to sequestration. This is under discussion in our company. We have to recognise the importance of mobility. That is a funda-

mental desire of human beings. Then we must achieve climate change mitigation. That is our policy.

Comment from Dr Anselm Görres, Green Budget Germany: I would like to come back to anther remark made by Mr Pichl. Mr Pichl emphasised the importance of such workshops and that there should be such an event more often, but that the funding is missing. I wish to support this comment. This is my first time in Japan and I have discovered that Japan and Germany have enormously much in common. Both countries are the economic leaders in their respective continents. Both have a mixture of very advanced environmental positions on the one hand and on the other hand, just by their sheer size, they contribute to a large portion of the problem. We both have similar cultural and historical traditions. Japan learned from the Chinese philosopher Confucius and we learned Kant. We have a positive attitude toward government. We have an obsession for quality. Sometimes we are called the Japanese of Europe, sometimes you are called the Prussians of Asia. All the actors, be it government, business, NGOs, municipalities, can profit from this kind of exchange and if there is a little bit of money left in the government budget and I am looking at the representatives of the Ministry here, I think it would be an excellent idea to have a workshop or conference alternating between Japan and Germany on an annual basis. This should not be a one-time event of the Germany Year in Japan. If you haven't already made the budget for the next year, maybe you will find a slot to fit this in.

Comment Mr Bayer, City of Wuppertal: I would like to come back to the report on Mr Rocholl on the NGO session. The question was raised if there was a law concerning German NGOs.

In the state of Northrhine-Westphalia, we have a right of complaint for NGOs. NGOs have seats in the city council with the right to speak there as experts and informed citizens. In other German cities this is much the same.

Comment Dr Klaus Müschen, City of Berlin: I have one short remark on a point we have not talked about. We are talking about two driving forces to saving energy: one is government legislation and the other is the price of energy. What about psychology and emotions? Japan and Germany, two of the richest countries in the world. Many people waste energy not for economic reasons but because it is fun. Driving a Porsche from point a to point b is fun. You can do it with an Opel Corsa just as well but it would not be as much fun. You must also discuss cultural behaviour if we are talking

about saving energy. It must become trendy and fabulous to save energy and this is still not the case.

Closing remarks from Dr Hermann E. Ott: We have heard about a lot of potential for learning and cooperation, within our own countries as well as Japanese-German cooperation. We even had great examples of the participatory approach between different players. This was a very useful example as there are common interests between many of those stakeholder groups. These should be explored. There is money to be made. There are business opportunities for cities to get good technology and to polish their image and there is a good possibility for NGOs to influence what is going on in municipal politics. I wish that some of what we have done here can be continued in some form. Mr Neitzel has talked about a possible follow-up programme regarding cooperation between cities and communities. There is further need for exchange between business groups. There is a case to be made for young green companies to get together and learn from each other.

I wish to thank the interpreters. I have rarely experienced such good translation. I would like to thank the staff from IGES. There are many of them behind the scenes who have provided a smooth functioning. I would like also to thank my two colleagues from the Wuppertal Institute, Ms Karin Holl and Ms Elke Mohrbach. My thanks go further to Prof Morishima and Mr Takeuchi form IGES both of whom, through their collaboration with the Wuppertal Institute, made this conference possible. We could not have done this without them. And finally, I would like to thank our sponsors from the German Environment Ministry, Mr Neitzel and Mr Schafhausen. Thank you all for making a difference.

Epilogue by Hermann E. Ott

Stakeholders are the key to change. A massive change from an unsustainable to a sustainable path is needed in order to deal with the daunting challenge of global warming. No one can do this alone — not even the State. We need strong and able partners willing to shift into another direction — the direction of climate friendly production, products, living and lifestyles. During the course of the conference and workshop "Climate Policy 2005 and Beyond — Japanese/German Impulses", we have learned that municipalities, NGOs and private industry devised and implemented a wealth of measures and ideas with great success. We have also learned about the pitfalls and where there is still a need for more flexibility in thought. There is no single solution, but it is essential that all the players from both Japan and Germany stay actively involved in this endeavour.

If two of the most economically and technologically advanced countries in the world do not take the lead in effectively implementing and improving upon the instruments that can mitigate climate change, then who can and who will? Germany and Japan, as such advanced countries and mindful of their ambivalent historical role, have an obligation to the rest of the world to lead the way into a fossil-free future.

It is thus essential that Japan and Germany continue to work together on concrete projects such as the ecological tax reform, which is under discussion in Japan at the moment, and to continue work on the emissions trading scheme for Japan. The fact that Germany has introduced such reforms has allowed Japan to draw upon our experiences and scientifically study the transferability of such a measure. The close co-operation between the Wuppertal Institute and IGES has certainly helped such diffusion of ideas. Japan has a good chance of adopting an ecological tax reform or adopt an emissions trading scheme that fits with the European system. If these measures find their way into the law books within the next four years, this will be one great milestone toward global climate protection borne partly out of close cooperation between the relevant institutions and both governments. Climate policy conferences such as this one offer vital contributions to reach such milestones.

This is just one example of how close cooperation can turn into a major shift in policy. There are many, many possibilities where industry, as we have seen from the examples given by BP and Hitachi, makes a huge difference of how much CO2 is emitted into the atmosphere. This exchange of ideas and

the recount of failures and successes between the two countries and continents is encouraging to those who want, or need to make changes in the way goods are produced and consumed. This will ultimately determine our fate. It is essential that we do not isolate ourselves, but that we instead continue this dialogue, learn from each other and thus set an example.

It is a known fact that the two strong pillars of Japanese society are government and industry and the close cooperation between the two have brought about the phenomenal economic success the country enjoys. This has perhaps resulted in a stronger resistance of industry to accept government regulation. Germany's industry, on the other hand, must accept regulation not only from Germany but also from the EU — and it has not suffered from that as was feared. On the contrary, unforeseen benefits have been the result. The exchange of such experiences between Japan and Germany in these areas is imperative as it can encourage more Japanese companies to see intelligent government regulation as a means to produce and consume in an environmentally friendly manner that also turns a profit. On the other side of the globe, Germany has learned a lot form Japan. The Japanese top-runner programme, an instrument to encourage business to produce the most energy efficient consumer appliances possible, has been studied and our new Environment Minister, Sigmar Gabriel, plans to transfer a version of this programme into the German law books.

Environmental NGOs in Japan have also learned from their German and European counterparts and made progress in the influence they have on the policy makers. This is still rather modest, since Japan does not have the same tradition of civil society engagement, but the conference and workshop have provided encouragement and new ideas to continue in this direction. This concerns the outreach to the public, ways for funding their operations and the strategies. The German government, for example, has realised the potential benefit of stakeholder involvement and actively encourages NGO involvement in national and international legislation. This will, in the medium and long term, lead to better laws and better government.

And, last but not least, cities and communities matter when it comes to climate change. Local communities are in a peculiar situation: First, they are part of the government structure and as such enact laws and regulations that guide the behaviour of their citizens. Second, they are the objects of governmental regulations and as such are guided by laws and regulations of the national or regional governments. And thirdly, they act like corporations, sometimes as owners of power plants and companies and sometimes as actors on the market — for example in the procurement of investment and consumer goods. Local communities are also close to peoples' needs

and therefore in a good situation to influence their behaviour. In short: local communities and cities are vital players for climate protection and have a vast range of options for collaboration with other stakeholders.

The conference and the workshop "Climate Policy 2005 and Beyond — Japanese/German Impulses", conducted on 31 October and 1 November 2005 in Tokyo, provided a good opportunity to exchange ideas and to elaborate future co-operation between all actors. At the last session of the workshop, where all stakeholders were present, interesting cross-sector discussions took place. Unusual and creative coalitions were suddenly imaginable. There is thus a real need for regular exchange between the different actors in climate policy — within politics, business, communities and NGOs and between them.

The organisers feel that this workshop and conference was a great success and the feed-back from our participants was equally encouraging. We will endeavour to learn and to continue working with different stakeholders in Germany and in Japan in order to advance the fight against climate change. The time for decisive action has come. Both countries and their stakeholders are in a good position to contribute — on their own and in co-operation with others.

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The Internet Revolution is a global event that has reached Germany and Japan to similar extents. Many experts agree that this revolution may bring about new patterns of social and economic interactions with potentially far-reaching implications. Although these patterns will develop in virtual space, material input will be affected and thus ecological impacts will result. Researchers within the Institute for Global Environmental Strategies (IGES) as well as the Wuppertal Institute felt that these potentially negative ecological impacts could provide a fruitful subject for the second phase of the "policy dialogue between Japan and Germany to facilitate co-ordinated action to combat climate change". Therefore, the two institutes decided to focus exclusively on policies and measures in the Information Technology (IT) Sector suitable to combating climate change. This report documents the second phase of the dialogue: A workshop held in Wuppertal in November 2000 and eight background papers on GHG emission trends of the Internet, energy efficiency, eco-labelling, reuse, recycling and return of IT products.

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