

Technology Review, July 10, 2007: The original is in German

Impossible is only a Lack of Fantasy  
by Martin Koelling, Tokyo

Shinzo Abe, the Japanese Prime Minister presented at the G8 Summit his well-sounding climate protection plan "Cool Earth 50". In this plan he proposes, amongst others through a cooperation scheme of all countries, to cut CO2 emissions by 50% by 2050 from the present level. Technology Review talked to Kiyoshi Kurokawa, Abe's top science advisor and the former president of Science Council of Japan, one of G8 Academies, that have delivered Statements to the heads of G8 countries at the Summit since 2005 on Climate Change and other issues, and discussed the sense and nonsense of unorthodox ideas for climate protection, the future of nuclear energy and the necessity of ambitious targets.

Technology Review: Professor Kurokawa, Prime Minister Shinzo Abe has requested in his CoolBiz campaign that we take off our tie for the betterment of climate and that offices are only cooled down to 28 degrees. As a scientist, you seem to support this campaign only half-heartedly. You took off your jacket, but still wear your tie.

Kurokawa: (smiling) I only put on my tie a moment ago realizing that I am talking to distinguished guests.

TR: Do you know whose idea it was to launch the CoolBiz campaign?

Kurokawa: Our former environment minister Yuriko Koike, who has just been named minister of defense had this idea and converted it to a successful public campaign. She is very creative, has vision and understands how to sell the message. Her team designed a powerful campaign title, she secured the necessary budget and started a well coordinated campaign.

Each advertisement was accompanied with a clear message and political action. That is why this campaign has such a public impact. The publicity budget was about three billion Yen, but the real advertising impact during its first year's campaign has been estimated at 70 billion Yen. In addition to the energy savings, this campaign is supposed to have had a direct business impact of 200 to 300 billion Yen while in the end of the day people for example had to buy new fashionable shirts since they could not wear jackets and ties anymore.

TR: And how effective is the compromise on climate change at the G8 Summit in Heiligendamm?

Kurokawa: It is insufficient, however that is what the G8 leaders have agreed. You must understand, the process is still very new. Climate change only became a topic for discussion in the framework of the G8 Summit in Great Britain in 2005, when former Prime Minister Tony Blair made an important argument for climate change and Africa. Since then, the G8 Academies have expressed their opinions to the heads of states prior to the G8 Summit. Chancellor Merkel even invited the presidents of the G8 Academies to her office so that she could personally receive the reports. This is a clear indication how important climate change is and what science community could contribute policymakers in a timely manner

TR: The Japanese Prime Minister has presented just before the summit meeting his Cool Earth 50 climate protection initiative, in which he wishes to involve all nations to half CO2 emissions by 2050. In order to assist developing nations in reducing their emissions, Japan is prepared to establish new financing mechanisms. Does Abe's initiative have any impact?

Kurokawa: I have been told YES. Everyone expected that the European nations would clash with the USA in the Summit in Germany. Particularly aggressive proposals such as the reduction of greenhouse gases by 20% by 2020 got a lot of resistance from the US government. However, Abe was already determined prior to the Summit and during his trip to the US in April he attempted to convince US President Bush to take at least a step forward.

It was easier for the USA to accept the Japanese proposal at the G8 Summit with its long term targets, the inclusion of developing nations and the insistence that economic growth and emissions reductions must be balancing out each other.

TR: President Bush was a staunch critic of the Kyoto Protocol. What according to you caused his change of mind?

Partly it all started in 2006 with the (Nicholas) Stern Report on the economy of climate change. Even the large petroleum companies took the Stern Report seriously since they sensed that something had to be done. In January this year, President Bush responded by naming energy efficiency as one of his top priorities in his State of the Union Address this year.

His change reflects the shift in opinion amongst big businesses. The US as a whole is moving forward. Independent of what the US government says, more than few states are pushing forward with much more aggressive plans to reduce carbon emission. The Governor of California, Arnold Schwarzenegger, wants to cut the CO2 emissions of his state by 2050 with even 80%. And, let us not forget that former Vice President Al Gore presented his movie "An Inconvenient Truth".

TR: How do you value the content of the Japanese proposal?

Kurokawa: First – the Japanese government has recognized the economic cost of climate change. When sea levels rise, then we have to move worldwide over one billion people, many in the developing world but Japan as an island nation is also affected. On top of that, China has become last month the largest producer of green house gases.

Therefore, Japan considers it necessary to include in future arrangements as under and beyond the Kyoto Protocol to include developing nations. Japan has something to offer. Most industries in Japan are very energy efficient, many of them are best in the world. Since the oil crisis in 1973 industry has maintained its CO2 emissions at nearly the same level even with a massive increase of output. Today, Japan's industry is twice as energy efficient as the American and other industrialized countries and nine to ten times more efficient than the China.

A long term goal and at the same time stressing collective action can be very helpful to get all countries on board. Still a few of the targets like a low carbon society in which each person will reduce one kilogram of CO2 each day is most likely difficult to attain, but need a try.

TR: Some critics say that these goals are impossible.

Kurokawa: We have to propose very ambitious goals. When someone says that something seems impossible, is a proof that someone lacks creativity and imagination, and this lack is an important function of the brain. When the conditions so require, then a lot of things become possible which before seemed impossible. Just think about the second world war and the atomic bomb. Einstein presented his famous formula  $E=mc^2$  and only forty years later two atomic bombs dropped on Japan. Such a possibility could have been beyond imagination.

TR: You mention the energy efficiency of the Japanese industry. However, the emissions from Japanese households have increased strongly, and the insulation of Japanese houses is very poor.

Kurokawa: You are right. The Japanese electronics makers have worked hard on the reduction of electricity consumption from household equipments. Air conditioning systems are today four times more energy efficient than a decade ago, washing machines only consume half of the energy. These levels of energy efficiency and innovative household equipments should be exported and especially the technology should be exported to the developing nations.

I do not know why Japanese businesses do not exploit this advantage. The situation is improving in housing construction. The City of Tokyo has issued new eco-friendly standards for new construction. Policies such as this can be very helpful for other cities to follow.

TR: On top of that it stands out that Japan, the home of the Kyoto Protocol, has it ever more difficult to meet its own targets. Japan wished to reduce CO<sub>2</sub> emissions in 2012 with 6% under the 1990 level. The self-imposed targets of industry have not brought the expected results.

Kurokawa: In a certain sense, Japan is handicapped since its industry already achieved a very high level of energy efficiency. Further reductions are really tough. Still, this points at a weakness of Japan, the will power and strategic and critical thinking.

Until now, our government has acted at the behest of industry. Companies then loose perhaps a bit of sense of responsibility. Sometimes it is up to the government to create markets such as the one for solar energy or forcing the companies to compete under the new rules of competition. Thus, we now have to set the new rules. The Japanese can be very innovative and creative, but often they are not so without some push from the outside.

TR: Another pillar of the Japanese proposal is the promotion of nuclear energy. This form of energy has been newly proposed under the banner of CO<sub>2</sub> reductions.

Kurokawa: The promotion of nuclear energy is not my policy, it is the government's. You can well guess which Japanese ministry is strongly involved and who are the business stakeholders or private sector partners ....

TR: The Ministry for Economics, Trade and Industry?

Kurokawa: I personally, would question this policy. When the Atomic Energy Commission of Japan reported a year ago recommended that nuclear energy provides some 30 to 40

percent of Japan's prime energy needs in year 2030, and even year 2100, I asked the Chair, why? I thought we should first determine our long term national energy policy, then discuss possible portion of contribution of nuclear energy.

We have so much untapped potential for renewable energy sources like solar, wind, biofuels, minihydro, geothermal, passive-on or better insulation of buildings and housings. Renewable bio-fuels represent another possibility, even though the use of corn is not as attractive because in this case we must choose between Food or Fuel, eating or driving). Cellulose and other sources should be considered.

In my opinion, we have to keep nuclear energy technology. At the same time we must prepare ourselves for the fortunate possibility that in the end we do not need it at all. Even more, we should propose ourselves such an ambitious target of let us say, a target of 5-10% being nuclear by 2050 so that we can maintain the technological capabilities and the export of technology to needy nations. Only a few countries then, hopefully, may need nuclear energy in order to reduce carbon emissions.

TR: What do you think about the global expansion of nuclear power?

Kurokawa: I ask myself if it can maintain itself. If you increase the number of nuclear power stations, then you are at the same time increasing the risk of the nuclear proliferation and even the targets of terrorist attacks. On top of that, who can guarantee that the disasters like Chernobyl 1986 or the Three Mile Islands will never happen again?

And finally there is the question related to the nuclear waste storage which has remained totally unresolved. Even the USA, the large islands nation, has not been able to decide where to store their nuclear waste. It is more important for human security that we try to achieve the Millennium Development Goals of the UN such as the reduction of 50% of eight goals such as reduction of extreme by 2015.