SEVENTH STS FORUM
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Te Whare Wānanga
o te Ūpoko o te Ika a Māui

CAPITAL CITY UNIVERSITY

What is the STS Forum

The Science, Technology and Society (STS) Forum, is held in Kyoto each year from the first Sunday in October, (3-5 October 2010).

This is a think-tank held annually to discuss global issues like climate change and energy supply, and to discuss possible solutions.

This year there were over 1000 participants from over 100 countries and affiliations, including scientists, businessmen and politicians.

The aim of the STS Forums

The need to achieve "harmony with nature" is a concept stated by Minister Koji Omi at the first STS conference in 2004.

Omi-san established this annual forum to address the contributions that science and technology have given our society, both positive and negative – the 'lights' and 'darks' of S&T.

The forums provide a platform for dialogue and a venue for leaders to discuss these issues from scientific, industrial and political viewpoints.

- In his introduction to the 2010 forum, Omi-san said that:
- “In the 21st Century society has increasingly come to realize that the earth is finite and sustainability is essential if our children are to have a future.
- “All human activity affects nature and the world needs new constructive and sustainable ways to develop further if we are to sustain vibrant life for years to come.”

The conference venue is in the same place where the Kyoto Protocol was signed. For three days the conference centre is alive with people, presentations and ideas.

Plenary sessions consist of a panel of up to six speakers followed by an open discussion

Plenary: Science and technology for global health

Seven parallel sessions are organized so as to encourage maximum audience participation. Participants are seated in groups of 8 to 10 given a specific issue to discuss and a rapporteur takes notes.

Parallel sessions

- A: Energy: Fossil fuel, nuclear and renewable
- B: Health, Global medicine and aging:
- C: ICT: Present and future developments
- D: Education: The importance of human capital
- E: Sustainability: Biodiversity, forests and oceans
- F: Human Habitat : Cities, water and adaptation to climate change
- G: S&T: The need to communicate better to society

Invited presentation

An inspirational talk was given at the Official Dinner, by Bertrand Piccard and André Borschberg. Their solar-powered plane Solar Impulse has the wingspan of an Airbus, and in July 2010 they flew it throughout the night solely on battery power. They intend to fly round the world next year.

Personally

- This forum has been an opportunity to broaden my thinking on global issues and an opportunity for me to interact with some of the world's foremost thinkers from many different backgrounds.
- The material in the program is extremely broad and deep and I have valued the opportunity to have participated in this Forum.

Pre-meeting: Climate Change

- This year there was an adjunct "Forum on Climate Change" at the University of Kyoto. This had been identified in a number of STS Forums as a key issue for humankind.
- At this forum the disparities between the industrialized and the developing worlds, and the impact of climate change were highlighted, (e.g., the 2010 floods in Kenya and Pakistan).
- To the developing world it seems they are paying the price of the past profligate behavior of the developed world.
- This disparity is an issue that is the responsibility of the Developed World and if it is not addressed it could threaten world stability.

Climate Change: Proposed action

- This adjunct forum endorsed the creation of "Knowledge Action Networks", i.e., managed social networks that link the global science, technology and policy communities to local initiatives.
- These networks deal with issues of climate change and provide an opportunity for "activists" to become directly involved helping society mitigate or adapt to climate change. Such 'bottom up' initiatives are starting to emerge in New Zealand.
- These statements echo and support those made in the STS Forum; that solutions to global problems cannot be found by people and countries working in isolation. There needs to be cooperation across disciplines, across sectors (government, public, and academia), across different levels of society, and across borders.

STS Forum, Theme A : The future of energy

Three sessions discussing:

- **Responsible use of fossil energy**
- **Challenges and solutions for renewable energy**
- **The nuclear energy option**

Responsible use of fossil energy

- Coal, oil and natural gas are the world's dominant energy source, and will be for some considerable time.
- Today half of the worlds population is without electricity.
- By 2050 world population will be 9 Billion, and, most likely, half the worlds population will still be without electricity.

Q. How can this population be provided with adequate energy without the use of fossil fuel?

Challenges and solutions for renewable energies

- The technologies are already available (but could be improved).
- Costs are coming down so as to be widely competitive with fossil fuel in the near future.
- Being green is not enough, without subsidies renewables have to be cheap, reliable, low maintenance and commercially competitive.
- Renewable energy; distribution and storage is a problem
- In the Developed world NIMBY is a major issue.

The nuclear energy option

- Why nuclear? One reason is that population growth will put a demand on energy supply that otherwise cannot be met.
- Nuclear is 6% of global primary energy, obtained from 430 reactors (14% of electricity).
- About another 100 are currently being built.
- Generation III and III+ reactors have inherent safety built-in (at a cost).
- Waste disposal and public acceptance is a problem in (parts of) the developed world.

Responsible use of energy

It seems inevitable that fossil fuels will have to be used for some considerable time, so:

— major efforts should be focused on the efficient use of fossil fuels; predominantly natural gas, not coal.

— there needs to be ongoing intensive development of commercially competitive alternatives, like solar and wind energy

— nuclear power will inevitably be a component of the mix, but safety has to be a priority.

Clearly, there is no simple solution!

In NZ we are in an immensely privileged position compared to almost every other country, with our many sources of non-fossil-fuel energy.

Summary of forum findings

The Statement of the Forum summarizes the views of the STS Forum's Council as to the important issues that were discussed this year. This Statement is available to interested parties, whether scientists, industrialists or government analysts. It is also provided to other decision-making forums to use as a starting point in developing their ideas on key global issues.