

3 . UNU Zero Emissions Booklet Series

- Tadahiro Mitsuhashi, *Guidelines for Zero Emissions - Aiming for an Economic Society that Generates No Wastes*, 2001
- Keizo Yamaji, *Practical Methods for the Environment Conscious Management - From ISO14001 to Zero Emissions*, 2001
- Masatsugu Taniguchi, *Environmental Issues from the Perspective of Resource Mining—For Increasing Resource Productivity*, 2001
- Yoshihisa Obayashi, *Green Strategy of the Construction Industry— From Zero Emissions to Global Warming Countermeasures*, 2002
- Koichi Sueyoshi, *Challenges for Zero Emissions at Kitakyushu Eco-town—Environment Conservation and Industrial Promotion*, 2002
- * Zero Emissions Manual Drafting Committee, *Zero Emissions Manual—Realizing a Zero Emissions-based Regional Community*, 2003
- Takayuki Taniguchi, *Handbook on Water Resources*, 2003
- Yakushima Project Working Group, *Yakushima Project on Achieving Zero Emissions*, 2004
- Hiroyuki Fujimura, *Biomass: the Ultimate Zero Emissions—How to Utilize Biomass Resources to Establish a Sustainable Society*, 2004

*This is also available in English.

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4 . United Nations University Zero Emissions Forum

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UNU Zero Emissions initiative - 10 years of progress

1. Development of the Zero Emissions concept

The concept of “Zero Emissions”, born at the United Nations University (Tokyo, Japan), in 1994—following from Agenda 21, the path breaking product of the 1992 Rio Earth Summit—is becoming one of the major leading principles as well as a methodology towards achievement of a sustainable society as an alternative to the current mass consumptive society. A fundamental concept of Zero Emissions underlines the effective utilization of the Earth’s limited resources and the minimization of human impacts on the natural environment. Zero Emissions promotes a shift from the traditional industrial model in which wastes are considered the norm, to integrated systems in which everything has its use. In other words, we aim to establish a sustainable socio-economic system that is harmonized with nature, based on a Zero Emissions industrial cluster that enables the optimization of resource use among different sectors—just like the natural ecosystem where no waste is emitted.

UNU has facilitated to foster Zero Emissions related activities through the UNU Zero Emissions Forum (ZEF) that promotes practical approaches to environmental sustainability and the application of science and technology with participation from academia, local governments, business and citizens. ZEF has made significant efforts since its birth in spring 2000 to disseminate the concept of Zero Emissions and enhance this innovative and flexible tripartite cooperation throughout Japan from a multilateral standpoint.

Zero Emissions has been diversified and elaborated both in terms of concept and means over the last ten years. Our missions now include the dissemination of this Japan-made Zero Emissions practice to the rest of the world, in particular, the Asian nations.

Rector, United Nations University (1997-present)

Prof. Hans van Ginkel

“The ultimate goal of “zero emissions” is to create a new type of society that seeks to achieve a social and industrial transformation whereby humankind “mimics” the sustainable cycles found in the world of nature. This high ecological ethics is nonetheless a vivid concept we must uphold for years to come.

To our regret, the capacity of the Earth is in a critical state more than ever before, and the well-being of future generations faces tremendous insecurity. In my view, we may find a viable solution in practicing “zero emissions”, which will bring about a change of the socio-economic system as well as technological renovation and a transformation in the industrial structure. Since Japan is a world leader in promoting “zero emissions,” its experience in developing a zero emissions-based society will be an asset for all of us in the world. I am very pleased that UNU can assist in raising knowledge about and increasing the visibility of Japan’s important experience to other parts of the globe.”

UNU-ZEF Chairman (2004-present)

Dr. Hiroyuki Fujimura, Honorary Chairman, Ebara Corporation

“Mankind hopes for economic development while aiming to conserve the environment and to save the natural resources for future use, however, these three propositions are irreconcilable. ... One of the solutions is the Zero Emissions concept. ... In order to put the Zero Emissions concept into practice, reusable materials that would have low environmental impact, as an alternative for the exhaustible energies, or energies with less CO2 emissions are highly desirable; among such candidates, the most feasible resource is so-called “biomass”. Human beings will establish for the first time a sustainable society—the Zero Emissions society—only if we can combine biomass resources and natural energies and utilize them.”

UNU-ZEF Chairman (2000-2004)

The late Dr. Keizo Yamaji, Former Chairman, Nihon Tetra Pak K. K. / Former President, Canon Inc.

“The essence of Zero Emissions is a methodology, using an analogy from natural ecosystem, to create a sustainable society that achieves high economic and social efficiency. Human beings once lived in the ecosystem (“natural zero emissions” system), but withdrew from it as years passed by. What’s more, we thoroughly studied the world of nature by developing various theories and knowledge, and conquered and governed the nature in order to make full use of it for our own convenience and well-being. In that process, we had begun to destroy the “natural zero emissions” system. ... Now awakened humankind has realized we must go back to the natural ecosystem, ...the first thing we have to do is to return nature to its original conditions, ...then we need to learn from the system of “natural zero emissions”. Once we learn all about it, we can apply such a system to establish Zero Emissions in human activities, where ecology and human’s welfare are well balanced at some point—that is where all human beings shall head for.”

2 . Major activities

< Symposia >

- 1994 United Nations University Research Initiative (ZERI) was started.
- 1995 The 1st World Conference on Zero Emissions, Tokyo (Japan)
- 1996 The 2nd World Conference on Zero Emissions, Chattanooga (USA)
- 1997 The 3rd World Conference on Zero Emissions Jakarta (Indonesia)
- 1998 The 4th World Conference on Zero Emissions, (Namibia)
- 1999 The Zero Emissions International Conference *"Philosophy of a Sustainable Society and Self-sustained Corporations and Local Communities"*
- 2000 UNU Zero Emissions Forum (ZEF) was founded.
- 2000 Zero Emissions Symposium 2000
- 2001 The Final Reporting Session (Priority Research Area, Grant-in Aid for Scientific Research, Ministry of Education, Culture, Sports, Science and Technology (MEXT) *"Development of Zero Emissions Material Recycling Process"*
The First Lecture Meeting *"Realizing a Resource-recycling Society by development of networking among industry, local governments and academia"*
Zero Emissions Symposium 2001 *"Zero Emissions Economy and Utilization of Biological Resources"*
- 2002 The 3rd Annual Symposium
International Symposium, *"IT and the Environment"*
Zero Emissions Symposium 2002, *"Clean Energy and Zero Emissions"*
- 2003 The 4th Annual Symposium, *"Towards the Establishment of a Zero Emissions Society"*
Zero Emissions Symposium 2003, *"New Action Models Aiming for a Zero Emissions-based Society"*
- 2004 the 5th Annual Symposium *"Towards the Establishment of a Zero Emissions Society"*
Zero Emissions 10th Anniversary Symposium *"Towards a Global Model of a Sustainable Society"*

< Joint Forums with Local Governments >

- 1994 The 1st Zero Emissions Round Table
The 1st Zero Emissions Round Table
- 1996 The 1st Zero Emissions National Network Conference
The 2nd Zero Emissions Network UNU Conference
- 1998 The 3rd Zero Emissions Network UNU Conference- Zero Emissions: A New Stream Boosted by Local Communities and Corporations
- 2003 ZEF in Mie Pref., *"Towards a Zero Emissions Society Harmonized with Nature"*
ZEF in Mishima City, *"Development of a Zero Emissions Society by Realizing Resource-recycling Systems within a Community"*
- 2004 ZEF in Miyagi, *"Zero Emissions and Eco-Business"* (Miyagi Pref.)
ZEF in Itabashi, *"How to teach the Environmental issues at School"* (Itabashi Ward)
ZEF in Iwate, *"The Benevolent Cycle of Ecology and Economy at Regional Communities"* (Iwate Pref.)
ZEF in Kawasaki, *"Towards a Sustainable Society by Implementing Zero Emissions"* (Kawasaki City)

< Cooperative Studies to Projects Funded by the Education Ministry >

- 1997-2001 Priority Research Area, Grant-in Aid for Scientific Research, Ministry of Education, Culture, Sports, Science and Technology (MEXT) *"Development of Zero Emissions Material Recycling Process"*
Chief Researcher: Prof. Motoyuki Suzuki
- 2001-2004 Special Coordination Fund for Comprehensive Joint Research (MEXT)
"Development of a Yakushima Model of Sustainable Society System"
Chief Researcher: Prof. Motoyuki Suzuki
- 1997-present Japan Society of the Promotion of Science Zero Emissions No. 168 Committee
Chair: Prof. Motoyuki Suzuki

< Seminars and Workshops >

- Fiscal Year 2001
Special Seminar on "Environment ISO + Zero Emissions (Co-organizer: JETRO and JMA)
Venue: Osaka, Naha, Chiba, Nagano, Joetsu, Oita, Kagoshima, Kochi, Kawasaki, Amagasaki, Yamagata, Hamamatsu
Workshop on "Towards a Sustainable Resource-recycling Society- Promoting Recycling and Enhancing Public Awareness (7 workshops)
- Fiscal Year 2002
Workshop on "Methods for Realizing of a Sustainable Society at Regional Communities" (5 workshops)
- Fiscal Year 2003
Academic Seminar on "Socio-Economic System of a Sustainable Society on the Theoretical Economics (5 workshops)
ZEF Summer Seminar in Kyoto, "ZE Technologies and Case Studies"

< Overseas Researches and Symposia >

- 2000 Empirical Pre-study and International Workshop on Synergies and Co-operation in Integrative Approaches towards Eco-restructuring together with Factor 10 Institute, Carnoules (France)
German-Japanese symposium on integrated approaches towards sustainability at the Fraunhofer Society and with support from German-Japanese Cooperation Council on High-technology and Environmental Techniques, Munich (Germany)
- 2001 UNU Zero Emissions Mission to Tianjin (China)
- 2002 Zero Emissions Seminar in Tunisia, Tunis (Tunisia)
Japan-China Joint Environment Symposium on "Aiming for a Sustainable Society", Beijing (China)
- 2003 International Conference on Integrative Approaches towards Sustainability in cooperation with the University of Latvia; funded by the European Commission (EC) and the German Ministry of Education and Research (BMBF), Riga (Latvia)
- 2004 Workshop on "Solving the E-Waste Problem" during the International Conference Electronic Goes Green 2004+ in Berlin (Germany)
- 2004 Japan-China Symposium on Water Management, Kunming (China)
Zero Emissions Forum in Guiyang, (China)

< Partnerships with Other Institutions >

- The Natural Step International (TNSi), Korea National Cleaner Production Center (KNPC), University of Thessaloniki, Indonesian UNDP, the German Ministry of Education and Research (BMBF), the Austrian government
(Including those under discussion)