

The Century of Sun and Life

To achieve the aim of halving CO₂ emissions by 2050, announced at the Hokkaido Toyako Summit last year, existing social and industrial systems will not be sufficient. However, this does not mean we need to lower our living standards. Global initiatives designed to reduce CO₂ emission are essential, but these will create new industries and new markets.

Yasuhiro Maeda, director of the Information Economy Division at the Ministry of Economy, Trade and Industry, says the time has come to shift our paradigms and form a “Green Market,” by combining cutting-edge IT infrastructure from around the world with the leading environmental and energy-conservation technologies of Japan.

The government and private sectors of Japan have created the world’s leading broadband environment, but it is now evident that services that take proper advantage of the infrastructure need to be developed. Internationally, many IT services are now available, such as Google and Amazon. Japan lags in this area and

has yet to fully use its infrastructure. Japan needs to prepare its own vision for addressing this problem.

One direction lies in the joint declaration made at the Toyako Summit last year to halve CO₂ concentrations in the Earth’s atmosphere by 2050. Needless to say, this is a very important element in the fight to protect the

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global environment, along with the well-known need to conserve ecosystems and biodiversity. The other direction is the issue of re-designing capitalism, which stems from the “Lehman Brothers shock” that took place last summer.

These issues suggest that the systems of mass production, mass disposal and mass financial transaction that have been in place since the Industrial Revolution are now facing a major crossroads. This is a global phenomenon today.

The question here is how Japan can contribute to the world, as it confronts these two critical issues. Japan must identify its own imperatives, based on this recognition. And Japan needs to contribute to the world over the long-term, and not merely to help resolve the financial crisis that the world faces today.

Spirit of *Mottainai*

An example of ways that Japan can contribute to the world, let us say with regard to resources and energy issues, is by fully realizing the spirit of *mottainai* that Japan has cultivated. The Japanese people have traditionally believed that humans must coexist with all of nature’s creations, and that we have the privilege of living and prospering together with nature. During the Edo period (1603–1867), everything from building materials to kimono robes were recycled and traded on the market, and were incinerated only when they were no longer usable. Incineration was not the final process, and the ash that remained was traded as fertilizer, and then the leftovers found after taking away the ash were used again, for example, as material for landfill. Mere disposal just generates waste, so everything should be used to the final degree—that is the spirit of *mottainai*. It is essential to convey this traditional spiritual value to the world. This is not to assert any theory about civilization. It is quite evident that the world cannot halve CO₂ emissions unless the conventional notion of mass production and mass disposal in our society and industries are decisively overturned. The spirit of *mottainai* offers a clue for the

world to share and achieve a new set of values.

What the spirit signifies today is, for example, Smart Grid, described below. This is a way of using excess energy in an area or a system in another area or system. By gathering and conveying information and knowledge about where excess energy is found and how it can be used, the method enables the spirit of mottainai to be incorporated into actual social activities in energy. It is IT and a world-class broadband environment that form the base for designing this kind system. By taking advantage of these assets and distributing and sharing large volumes of information on mottainai, we can start addressing the issues of CO₂ reduction and ecosystem conservation.

The time has arrived for the world to skillfully integrate the main functions and vectors relating to the global environment, information and finance, so that a new society can be created in which the three factors interact with one another.

Vision of Green Marketing

What is presumed in the direction and measures sought is the creation of a Green Market wherein environmental conservation and economic development can be realized at the same time.

Specifically, for example, if automobiles start being replaced by electric vehicles, our concept of automobiles shifts from those having an engine for internal combustion to those carrying electricity, or something that can be described as mobile batteries. The mindset of owners also changes. Instead of filling cars with gasoline and preparing for extended, long-distance driving, people would start charging cars when they get home just as they do with mobile phones, and would be satisfied by driving in a certain limited area as necessary. Needless to say, vehicle designs also change. Electric vehicles



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Here is another example. Although wooden houses of Japan are usually rebuilt in about thirty years, houses start accumulating information if we built them to last for 200 to 300 years. Such houses can incorporate safety management systems with an interface that is easy to use for any generation. This system also offers information related to the community and living, and enables information necessary for daily living to be accumulated, updated

and customized to suit the generations living in the house and the times. Such houses have the potential to make suggestions, being wise and intelligent houses. By incorporating information appliances, a toilet that manages your health and other devices, effective information for safe and secure living accumulates and ultimately enhances the quality of life itself.

The forerunners of Green Market products include the electric vehicles described above, as well as a jet bath that slashes heated water use 95%, firefighting trucks that put out fires with foam without using water, and other products developed by Japanese manufacturers. There are technologies that are almost ready for practical application, such as the electricity Smart Grid, vibration power generators, and 300-year houses, as well as a community revitalization model that combines agriculture and biomass power generation. This potential must be developed into a major trend. There are also initiatives underway to convert and apply insect and plant functions to man-made objects, in order to create products that are kind to both people and the environment and that reduce the burden on the environment. The jet bath above is a result of attempts to mimic insect functions. Needless to say, the results of these R&D efforts will greatly influence the design of society itself.

Meaning of Smart Grid

Currently, electricity is being supplied exclusively from the power stations of electric companies. Smart Grid refers to a clean energy supply that employs cutting-edge IT and electronics technologies. Consumers at enterprises and households use clean electricity generated by solar panels, small-scale wind power generators, fuel cells and other means, and sell the excess to areas where the electricity is deficient. Here, details about power generation and consumption and real-time charges are managed using equipment that display this data, and the equipment is incorporated into a network for identifying and estimating the demands on electricity and supplying the excess to areas that need them.

However, it is unrealistic to replace everything with the Smart Grid at once. It is essential to steadily introduce the system, while observing the market situation. The wild-goose formation model refers to the process of transferring technologies and systems of industrialized countries to developing countries and fostering them there. But in this case, the so-called reverse wild-goose formation model should be adopted.

A significant implication is hidden in the Smart Grid that utilizes clean energy. Fossil fuels are scarce resources and essential for industrial development, and this is why the world has fought over them. On the other hand, sunlight and other forms of natural energy are neutral and beneficial for all humans, which is obvious without comparing them to fossil fuels. As can be seen, they are peaceful resources that free mankind from conflict. The surfacing of the CO₂ concentration issue has led the world to achieve a shared recognition of the value of clean energy and the Smart Grid. This trend signifies that a paradigm shift is taking place with regard to the design of social and industrial systems, and that the Century of Sun and Life is at last ready to start, creating a human society of the future.

As a consequence, the promotion of solar power system installation at households, schools, buildings and many other facilities is a contribution to peace, even if individual undertakings are small. Ultimately, these efforts will reduce the greatest costs for society, such as terrorism, conflict and war.

Networking for Change

Japan has accumulated experience and know-how on overcoming pollution, and has developed technologies for the environment and energy conservation, in addition to creating an environment that enables advanced information processing. The essential nature of the Green Market is the creation of the market through system recombination, and specific projects for realizing this should be initiated as national strategies. It is extremely important to convey Japanese initia-

tives to the world, and contribute to the world in collaboration with the global market.

To do this, information gathering and analyses will get underway this summer, to develop a policy road map. For example, companies both in Japan and abroad have accumulated excellent knowledge, wisdom and information that can open up a path toward the Green Market. To create a single reference material, the CSR visions of 100 leading enterprises around the world is being analyzed, for example.

Moreover, what the government alone can do to create a Green Market is limited. Therefore, a Forum involving the public and private sectors from both Japan and abroad will be established. The core concept for the Forum will be prepared by the spring of this year, and information will rapidly be distributed in Japan and overseas. For example, core information that can be shared will be distributed, such as theories on civilization, social systems, business administration, technologies and other matters. This information will be distributed throughout the world in a format that can be obtained and edited online.

The Forum aims to set out the core concepts and encourage open discussions, so that participants from different areas bring information back to their own organizations and discover solutions that are unique to the organization. In other words, the aim in creating the Green Market through the Forum is the expansion of an amoeba-type network instead of a pyramid model. Instead of establishing routine procedures, a network-type Forum is being sought where people who find clues are free to do whatever they believe is appropriate.

The slogan for creating the Green Market and organizing the Forum would be, in short, "Together." It shows that representatives from the public and private sectors of both Japan and abroad need to work together. The world needs to unite to achieve this goal. □

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