

“DENSO’S GREEN WAYS:

Working Toward an Advanced Automotive Society”

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Good afternoon, ladies and gentlemen.

The roots of DENSO's Green Ways run deep, very deep.

All the way down through thousands of years of oriental culture. Then, those roots were nourished and expanded by an experience our young and struggling company had more than 40 years ago.

That's why I very much appreciate the opportunity today to explain:

- How DENSO's environmental philosophy permeates every facet of DENSO's global business – from initial R&D, product development, manufacturing, our employees and even the communities in which it operates, and
- How DENSO continues to work toward an advanced automotive society in which automobiles and people can coexist without burdening humanity.

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Environmental Philosophy Background

You can understand our environmental philosophy best by knowing the principle of “consideration” in oriental culture. In the western culture, people value individualism as an esteemed trait. In contrast, oriental society places, instead, the utmost priority on “consideration” for the whole world, including nature as well as mankind. Every creature on the Earth has its own meaning of existence.

This philosophy leads us to care for our community, our company employees, our society, and our environment. In oriental culture, you simply cannot exist as a human without “consideration.” This principle is even built into the written *kangji* characters for the Japanese “thank you” – *arigatou*. Literally, these *arigatou* characters translate as being difficult to exist. With each *arigatou*, everyone is reminded again and again of the difficulty of existing without the sympathy and kind hearts of others.

Thus, consideration also requires a reverence for nature. An old zen saying states that, “No snowflake falls in an inappropriate place” indicating admiration for nature’s perfect design. Mankind has journeyed to the Moon, sent exploratory rockets to Jupiter and Mars, but has found nothing yet like the perfection of Earth where people and every creature can live. So, our consideration must be to protect this nature gift.

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DENSO came into the world on December 19, 1949 in Kariya City, Japan when the Japanese economy was devastated by the war. Kariya was no place to start a global business since it was a small, rural town with a few factories scattered across its wide stretches of farmland.

As our young company – then called Nippondenso – struggled to get on its feet, we made a mistake that abruptly reminded us that we could not exist without consideration, especially for the land and our community.

This is what happened. Wastewater released from our factory contaminated the neighboring rice farms, causing a poor rice crop for local farmers. DENSO immediately responded by totally changing the factory’s wastewater drainage system. Kariya farmers, not expecting such a fast turnaround, warmed to the company, so much so that townspeople started using an affectionate nickname, “Denso-san”, speaking to us just like you speak to your own family members.

That was long ago, but we’ve never forgotten the lesson. The farmers too never forgot DENSO’s response and support.

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Today, one of the four key management principles of The DENSO Philosophy, which directs our global activities, remains, “Environmental preservation and harmony with society.”

Working Toward an Advanced Automotive Society

An estimated 800 million automobiles are in operation worldwide, with many people enjoying the conveniences and comforts of what we call “a well-developed, automotive society.”

Our goal continues to be the realization of an advanced automotive society. For DENSO, an advanced automotive society means not only a highly developed, technological world, but also “a world where automobiles and people can coexist without damaging humanity or the Earth.”

To achieve our goal, we are working toward reducing environmental burdens, including exhaust gases and chemical agents that challenge the environment throughout an automobile’s life – starting with the manufacture of one product down to its final disposal.

This is not a fantasy, or a far-off dream, or a new, fashionable concern for DENSO. It’s part of our very soul – relentlessly driven by the concept of consideration since we learned a valuable lesson in our local neighborhood. For example, DENSO produced an electric car as early as 1950, fully 40 years before the first mass-produced electric vehicles hit roadways in the 1990s. At that time, people thought DENSO was thinking too far into the future.

Now, every five years, we set a clear strategy for what we want to accomplish.

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With our most recent strategy, “DENSO EcoVision 2015”, our goals are:

- Expansion of environmental management into group companies;
- Product development and design that takes into consideration performance improvement as well as the environment;
- Steady reduction of environmental impact in global production, and
- Enhancement of external relationships and information disclosure regarding environmental actions.

In fact, all DENSO manufacturing facilities worldwide, except for new start-ups, are ISO-14001-certified, a voluntary standard of excellence for environmental management.

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We believe that consideration for the environment begins first with our own environment inside our factories and offices. To motivate our employees’ thinking in this direction, we follow what we call our “5-S” principles to improve and maintain the workplace environment in good condition. “5-S” stands for:

- *Seiri* (clearing);
- *Seiton* (arrangement);
- *Seiso* (clean-up);
- *Seiketsu* (cleanliness), and
- *Shitsuke* (discipline).

Keeping our own “house” clean leads us to continuously apply the “5-S” principle to our surroundings as well, as an extension of consideration.

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With all of the activities I've mentioned, based upon our philosophical backbone of "consideration", we've already developed various systems that significantly improve energy efficiency so that we can make our products environmentally friendly.

In giving priority to technologies that benefit both consumers and the environment, let me highlight our most notable accomplishments:

- To improve the fuel efficiency of hybrid vehicles, DENSO developed electric compressors that start and operate the air conditioner by using battery power instead of the engine.
- To help clear exhaust emissions, DENSO developed a diesel common rail system being able to inject fuel at up to 1,800 bar (or 26,000 psi) which results in significantly cleaner exhaust emissions. Last year we introduced a new system with piezzo injectors for better performance and higher fuel efficiency.
- To reduce substances of environmental concern, DENSO co-developed with Toyota and Koito the world's first mercury-free headlamp system.
- To improve fuel efficiency, DENSO developed a new cooling system for cars and light vehicles by employing a variable displacement compressor. This is the world's first system that automatically controls the car's cooling capacity together with the acceleration and deceleration of the engine.
- Finally, you may have heard about our CO₂ car air conditioning system, the world's first to use carbon dioxide as refrigerant. It's only one alternative or tool to the currently used refrigeration, HFC-134a. But it's here on display – be sure to take a look at the system before you leave.

You now understand that DENSO's Green Ways run deep, very deep. We simply cannot exist without consideration for the environment. DENSO, with the combined global strength of its 104,000 employees in 31 countries, is committed to achieve the goals of DENSO EcoVision 2015.

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Now, let me leave you with this quote from a famous Buddhist priest,

“Handle even a single leaf of green in such a way that it manifests the body of the Buddha. This in turn allows the Buddha to manifest through the leaf.”

Thank you.

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