Top Commitment

TDK’s new medium-term plan, which started in 2012, states that our basic policy is to “sharpen TDK’s core technologies and contribute to the evolution of new social infrastructures.” In this plan, we identify the next-generation information and communications market and the energy-related market as our top-priority markets. As an electronic components manufacturer, we believe that TDK can display its strengths in a wide range of fields that can be expected to grow in the future, such as cloud computing, smart grids, and environmentally friendly vehicles. In the field of magnetics, which is one of our strengths, we have identified 2012 as “year one of the magnet renaissance” and will put even greater effort into this sector with the aim of developing a magnet that does not use rare earth elements. We will also continue to constantly challenge new business fields and, through the solution of social issues, contribute to the realization of a sustainable society.

Creating entirely new things of value by starting at the fundamental level of the materials—While inheriting this creative spirit as our DNA, unchanged since our founding, TDK has constantly pursued the creation of products that meet the needs of society, in other words, exceptional craftsmanship from the standpoint of the customer. As one attempt to show our respect for and inherit TDK’s spirit of exceptional craftsmanship, since 2010, we have been holding the TDK Morozukuri Tradition Seminars. The aims of these seminars are to provide an understanding of the role and mission of “mother factories” in ensuring survival in this age of global competition and training next-generation leaders who are capable of building a consistent backbone of exceptional craftsmanship. Participants learn about such themes as consistent processes of manufacturing from materials to products and the incorporation of quality assurance in the manufacturing process itself, rather than relying on quality inspections, and they, themselves, give guidance to frontline workers. From the point of view of strengthening our competitiveness, we believe that it is essential to share this spirit of craftsmanship throughout the Group so as to efficiently create products that satisfy the customer and to differentiate ourselves.

Under the environmental vision, the “TDK Environmental Action 2020,” announced in 2011, TDK is making progress steadily toward the achievement of carbon neutrality, which is the first attempt in the electronic components industry. The goal for this initiative is that the emissions of CO\textsubscript{2} in the production activities of the TDK Group will be cancelled out by contributions made to the decrease of CO\textsubscript{2} emissions by using TDK products by FY2021. In addition, through an industrial organization, we are promoting the realization of the environmental contributions of electronic components. Our desire is to clarify the environmental contributions of electronic components by standardizing the criteria. Furthermore, in order to respond to changes in the demands and expectations of society, in the fall of 2011, we revised the TDK Code of Conduct, which is a guideline for TDK’s behavior as a company. The revised guideline proclaims, “TDK will fulfill its responsibility to society based on a strong sense of ethics in order to promote sustainability, and will conscientiously promote corporate ethics and CSR throughout its supply chain, which includes suppliers and clients.” It also states, “Through the practice of our corporate motto, which holds values that should be shared by every individual employee in the TDK Group, the Company emphasizes solidifying the unity of the group as a whole and endeavoring to further enhance our values.” From now on, we intend to disseminate this new Code of Conduct even more deeply among our employees.

One of the characteristics of TDK is its respect for the individuality of employees. I want our employees, who will take the lead in the future, to have vision and to continue courageously making advances without fear of failure and never giving up hope. It is the accumulation of such efforts that will gain the trust of stakeholders and in turn cultivate trust in TDK as a whole.

This report introduces some of the advancements we have been making. Please read it and send us your comments.

Takehiro Kamigama, President and CEO, TDK Corporation

Inheriting the spirit of creativity continued since our founding, TDK will contribute to the solution of social problems through exceptional craftsmanship. We will continue making advances toward our goal.
Company Profile

Name: TDK Corporation
Headquarters: 1-13-1 Nihonbashi, Chuo-ku, Tokyo, Japan
Established: December 7, 1935
Capital: ¥32,641,976,312 (as of March 2012)

Editorial Policy

This report has been compiled with the purpose of giving stakeholders an understanding of the TDK Group’s CSR (corporate social responsibility) activities.

In the first half, as the TDK Group’s CSR, we outlined the role that TDK seeks to fulfill as our basic management philosophy and introduced the spread of TDK’s spirit, which has continued since our founding to the present, as well as the meaning of “vision, courage, and trust” for TDK employees around the world.

In the second half, we introduced topics and achievements relating to our Key CSR Action Items.

Highlight 1. “Contribution to the world by technology,” introduces a roundtable discussion by young TDK members talking about how TDK will be contributing to the solutions of social issues and the building of society in the year 2020.

Highlight 2. “Development of human resources,” introduces the transmission of TDK’s spirit of exceptional craftsmanship to the next generation.

Highlight 3. “Society and environmental considerations in the supply chain,” introduces TDK’s response to CSR procurement as a midstream company—that is, from its position as both a supplier, accepting the requests of customers, and a buyer, requesting the cooperation of business partners.

Highlight 4. “Symbiosis with the global environment,” introduces the TDK Group’s problem-solving initiative through the power capacitor business amid the diffusion of renewable energy.

Report Format

The report is available as a booklet and a collection of web site pages, in slightly different format to match the requirements of the respective media.

Booklet: A digest version introducing our Key CSR Action Items.

Web site: Compiled with reference to the Global Reporting Initiative (GRI) guidelines including comprehensive information centered on fiscal 2012 activity reports as well as detailed data.

(Scheduled to be available in September 2012)

Period Covered

FY2012 (April 1, 2011 – March 31, 2012)

Some information covers activities outside this period.

Organizations Covered

TDK Group*

* TDK Group: TDK Corporation and 125 consolidated subsidiaries in Japan and overseas

Major Organizational Changes during the Covered Period

None

Date of the Report’s Issue

September 2012

(Next issue: September 2013 [scheduled])

Contact

CSR Promotion Officer: +81-3-5201-7115

Cover Page Design

Based on a rainbow motif, the cover design shows diverse human resources brimming with originality and implementing TDK’s Corporate Motto by performing in harmony. The rainbow image is repeated on pages inside the booklet as well, expressing a society of dreams created by TDK.

[Highlight]

The TDK Group’s Initiatives for Key CSR Action Items

1. What should today’s technological innovations look like if they are to solve social problems and bring an ideal future into reality?

2. Cultivating excellent manufacturing leaders: The TDK Monozukuri Tradition Seminars

3. Working toward a win-win relationship with customers and suppliers: TDK’s CSR procurement

4. Tackling the challenges of encouraging the use of next-generation energy on a global scale

CSR Activities

Web Information

The Web version carries comprehensive information centered on fiscal 2012 activity reports, as well as detailed data.

Note: The screen photo shows the fiscal 2011 issue.
The TDK Group’s CSR

With the aim of building a company that continues to be trusted by society, all employees in their daily activities are implementing the corporate motto and ensuring corporate ethics.

### Corporate Philosophy

**Corporate Motto**

*Contribute to culture and industry through creativity*

**Corporate Principles**

**Vision**
- Always take a new step forward with a vision in mind. Creation and construction are not born without vision.

**Courage**
- Always perform with courage. Performing power is born by confronting contradiction and overcoming it.

**Trust**
- Always try to build trust. Trust is born from a spirit of honesty and service.

### The TDK Code of Conduct: The TDK Group’s Standards and Guidelines

TDK Code of Conduct specifically provides the standards and guidelines for compliance with all laws, regulations, and social norms.

By pursuing creativity and consistently providing products and services that create new value, we offer satisfaction and dependability to our customers and all of our stakeholders. With their support, we also contribute to the development of a sustainable society by helping to resolve social issues. For this purpose, the members of the TDK Group will autonomously practice the following action guidelines in the course of their daily work:

1. TDK members shall respect the character and individuality of each employee and pay heed to values and opinions that differ from those of the TDK Group.
2. TDK members shall always be aware of wider issues and pursue the true facts of any situation.
3. TDK members shall be active, courageous, and tenacious in efforts to resolve social issues.
4. TDK members shall pursue work creatively as members of a manufacturing company.
The magnetic material ferrite was invented in Japan in 1930 by Dr. Yogoro Kato and Dr. Takeshi Takei of the Tokyo Institute of Technology. The Magnetic Industry was born with a ‘revolutionary vision,’” this statement by Dr. Kato inspired Kenzo Saito to found TDK in 1930 with the purpose of marketing this original material invented in Japan. Prior to founding TDK, Kenzo Saito tried various businesses, failing many times in his effort to realize his dream to improve things in an impoverished farming town in Akita, Japan where he was born. An angora fur business was one of Saito’s many early endeavors. However, this business did not go smoothly and he was unable to find any customers. Winter is especially harsh in Akita and the local people were forced to live a hard existence. Determined to find a way to help the people of his hometown, Saito grabbed a few angora fur samples and jumped on the night train to Tokyo. He wanted to meet directly with the President of the Kanagawachi Spinning Company, which was leading textiles in the textile industry. Despite having no prior appointment, he was granted three minutes with company President Shingo Tsuda. Saito gave an impassioned explanation regarding the merits of angora fur. Tsuda became so impressed that he accepted Saito’s business proposal, pledging additional funds for the business. In the end, the angora fur business was a success. However, Tsuda was greatly impressed by Saito’s passion for and commitment to his ideals. At the time of TDK’s founding, it was unclear whether ferrite would have a future, so the foundation demanded “courage,” and this will to pursue a “vision.” Despite the tough economic times, Tsuda would provide a large amount of money to help Saito start TDK because he believed in Saito’s entrepreneurial capabilities. In time, as a result of joint research by the Tokyo Institute of Technology and TDK, a product called a “ferrite core” was produced and applied for the first time in the world in 1937, in a number of Japanese wireless communication, units and radios. By the end of the war, as many as 5 million units had been shipped by TDK, thereby gaining the “trust” of the society. The spirit of creating entirely new things, of value by linking at the fundamental level of the material, has defined TDK from the beginning, and this belief is still the trait that sets TDK apart. It is also reflected in the Corporate Motto formulated in June 1967, “Contribute to culture and industry through creativity.” If not for the meeting between Tsuda and Saito; through Saito’s angora fur business, today’s TDK would not exist. Saito later recalled, “A person can make their business into a success by working with a strong sense of social values and with the dedication to never give up no matter what obstacles they may face.”

The TDK Group's Approach to CSR

The TDK Group’s Approach to CSR is based on the TDK Corporate Motto to ensure corporate ethics. The four action items shown to the right have been identified by the TDK Group as especially important due to their impact on society at large and the company. Key CSR Action Items

- Contribution to the world by technology
- Development of human resources
- Society and environmental considerations
- Symbiosis with the global environment

The TDK Group’s CSR and the Corporate Code of Conduct

The TDK Group’s approach to CSR is based on the TDK Corporate Motto to ensure corporate ethics. This means that CSR activities are promoted through business activities based on the TDK Code of Conduct* and are always maintained through the proper channels of communication with our stakeholders while recognizing the fact that the company’s continued success is supported by our customers, suppliers, employees, shareholders and investors, local communities, and other stakeholders. By putting our Corporate Motto into practice, our corporate value increases, and this contributes both to the “Continued evolvement of business” and the “Creation of a sustainable society.”

CSR Promotion Structure

The CSR activities of the TDK Group are conducted under the guidance of the Business Ethics & CSR Committee and its subordinate organization, the CSR Task Force.

* For the complete text of the TDK Code of Conduct, please refer to the following URL: http://www.global.tdk.com/about_tdk/code_of_conduct/
“What do ‘vision, courage, and trust’ mean for you?”

Members of the TDK Group are active around the world. Countries and regions may be different, but the attitudes and direction ahead for the group as a whole expressed in our Corporate Motto and Corporate Principles are shared throughout the world. Here members working in various countries introduce their “vision, courage, and trust” in their own words.

**Vision**

“Make dreams come true by creating a TDK of tomorrow.”

**Courage**

“What kind of society do you want to create by continuing to work with courage?”

**Trust**

“How do you endeavor to build relations of trust in the workplace and in society?”

“Pave the way for sustainable development through conservation, energy security, and equality in a world with shrinking resources and a growing population.”

“Build mutual-trust relationships with honesty and integrity.”

“Create trust with the colleagues through teamwork, ethics, respect, and responsibility.”

“Become No.1 in the world in complex technologies born through collaboration.”

“Surpass the limits and be innovative.”

“Live with company for success.”
The magnetic material ferrite was invented in Japan in 1930 by Dr. Yogoro Kato and Dr. Takeshi Takei of the Tokyo Institute of Technology. The Japanese industry was born of innovative vision," this statement by Dr. Kato inspired Kenzo Saito to found the TDK Corporation in 1935 with the purpose of marketing this original material invented in Japan.

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At the time of TDK's founding, it was unclear whether ferrite would have a future, so the foundation demanded "courage," and this will to pursue a "vision." Despite the tough economic times, Tsuda would provide a large amount of money to help Saito start TDK because he believed in Saito's entrepreneurial capabilities. In time, as a result of joint research by the Tokyo Institute of Technology and TDK, a product called a "ferrite core" was produced and applied for the first time worldwide in 1957 in a number of Japanese wireless communication units and radios. By the end of the war, as many as 5 million units had been shipped by TDK, thereby gaining the "trust" of the society.

"The spirit of creating entirely new things of value by TDK, thereby gaining the "trust" of the society."

Contribute to culture and industry through creativity.

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Key CSR Action Items

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Business Ethics & CSR Committee

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Global Expansion of the TDK Network

From TDK’s founding in 1935, TDK business has expanded into various countries and regions around the world. The TDK product lineup has also greatly diversified. Remaining an important player on the world stage, TDK aims to keep delivering services and products needed by society.

### The TDK Global Network

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of employees</th>
<th>Number of subsidiaries</th>
<th>Net sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>6,776</td>
<td>32</td>
<td>123,367 million yen (15.1%)</td>
</tr>
<tr>
<td>Japan</td>
<td>9,991</td>
<td>14</td>
<td>112,028 million yen (13.8%)</td>
</tr>
<tr>
<td>Asia</td>
<td>59,327</td>
<td>57</td>
<td>493,550 million yen (60.6%)</td>
</tr>
<tr>
<td>Americas</td>
<td>3,081</td>
<td>22</td>
<td>85,552 million yen (10.5%)</td>
</tr>
</tbody>
</table>

(As of March 31, 2012)

### FY2012 Net Sales by Industry Segment

- **Passive components**: 381,576 million yen (46.9%)
- **Magnetic application products**: 316,402 million yen (38.8%)
- **Applied film products**: 92,727 million yen (11.4%)
- **Other**: 23,792 million yen (2.9%)

Consolidated net sales: 814,497 million yen
TDK products and technologies support a smart society filled with dreams

Cloud computing and smart grids are social infrastructures that will give rise to substantial changes in lifestyles and business. TDK is contributing to the development of a smart society filled with dreams through its original and competitive products and technologies.

Cloud computing to link all devices

Cloud computing links all types of IT devices as well as people, information, and services through the Internet likened to a cloud. TDK’s diverse range of electronic components and devices support the development of a worldwide cloud culture.

Smart grids in harmony with the environment

Smart grids are regional, distributed energy infrastructures that use renewable energy sources such as solar and wind power. Core TDK technologies based on materials technologies are showing their true value in the development of smart communities that link smart houses and smart buildings.
Overview of FY2012 Activities and the FY2013 Action Plan

The TDK Group identified action items that are particularly important from the perspective of CSR and works to implement these items through business activities. The PDCA cycle is applied to each item based on the action plan, and we continuously strive to improve activities.
What should today’s technological innovations look like if they are to solve social problems and bring an ideal future into reality?

In the course of promoting CSR, the TDK Group attaches great importance especially to solving social problems through the use of its unique technologies. What kind of society should we envision as an ideal future? What would be the technological innovations to achieve such a future? What path should the TDK Group take?

Six developers, researchers, and engineers all responsible for TDK’s technologies in the renewable energy field have gathered together for a roundtable discussion.

Thinking of the ideal society of the year 2020

“Sharpen TDK’s core technologies and contribute to the evolution of new social infrastructures” is TDK’s medium-term vision that the company has established starting in 2012. The environment and energy area is one of TDK’s focus areas. TDK recognizes its role to contribute to bringing a sustainable society to reality through the application of the core technologies that it has accumulated. Searching for common issues, the six developers, researchers, and engineers discussed what society might look like if we extend the present into 2020. The year 2020 is the target year for the TDK Environmental Action 2020. Various concerns were expressed, for example, “advancing depletion of oil and other fossil fuels may result in a more uncertain period” and “an accelerated increase in the world population may force everybody to scramble for water, food, crude oil, minerals, and other resources of limited supply.” The concerns vividly highlighted the worldwide anxiety about the deteriorating amount of resources and energy on the earth.

Next, as the participants envisioned an ideal society of 2020, they suggested, for example, “a recycling-oriented society that uses resources from the earth for production but returns them back to the earth after use” and “a society where electricity is available equally to everybody regardless of whether it is an advanced or advancing society where electricity generation and consumption are balanced at the home and community level.” Apparently, distributed-energy generation and consumption are balanced at the country.” Another view was “a self-sufficient society where resources around ourselves. For example, we can collect old mobile phones that many of us have at hand to recover a great amount of rare earth elements.” The background to such opinions is the fact that the continuously growing global use of mineral resources is threatening their sustainability, as in the case of fossil fuels. Taeko Tsukubu, who works on development of magnets that use no dysprosium, explained, “The neodymium magnet, now widely used in wind turbines and HEVEV drive motors, use dysprosium, which is a rare earth mineral, for resistance to heat.” Ms. Tsukubu was enthusiastic about bringing a dream to reality, “The key to achieving both heat resistance and coercive force is grain refinement of the sintered body without depending on a dysprosium composition. My team wants to contribute to solving resource problems by making concerted efforts to develop and start manufacturing neodymium magnets without dysprosium. The discussion also addressed the meaning of affluence and human welfare from the ordinary citizen’s perspective, “It is important to find value in a simple lifestyle.” A profound discussion on solving the water problems followed.

Possible technologies to make up for various “shortages”

Sharing a common vision of 2020, the six technical professionals explored the practical question: “What then would be required to turn that vision into reality?” Liberally inspired opinions were exchanged. Energy problems were recognized as hurdles that must be surmounted. The discussion zeroed in on the availability of renewable energy, such as solar energy, wind power, and hydro-energy as alternatives to fossil fuels. Nuclear power is being reviewed in various countries after the Great East Japan Earthquake. A strong view came out in our discussion, “It is absolutely necessary that we switch from nuclear power to natural energy.”

With attention focused on the reuse of resources, we heard such opinions as “we should be conscious of precious resources around ourselves. For example, we can collect old mobile phones that many of us have at hand to recover a great amount of rare earth elements.” A profound discussion on solving the water problems followed.

Technological innovations that address energy problems

The subject switched to the question: “How can technologies contribute to solving social and environmental problems?” The participants fired positive opinions at one another. Here again, concerns over energy problems dominated the floor. It was stated that, “Natural energy...
now is converted into electricity at an extremely heavy conversion loss. How can this loss be ever improved, and the conversion efficiency raised closer to 100%? The consumer may be conscious of saving power, but I wish there were a device that automatically suppresses consumption above a necessary level. These fields are obviously the very fields where TDK is developing magnets, power supplies, wireless power transfer, current sensors, and others, and may capitalize on its strength. Wireless power transfer is a wireless energy supplying system using no electrical cables. There have been some wireless power transfer systems using electromagnetic induction for charging electric toothbrushes and personal handheld phone system. The problem with these systems was that the distance between the charger and the device to be charged was limited. Engaged in the development of wireless power transfer, Mr. Suzuki explained, "I am tackling a project of freeing people of the world from connecting cumbersome cables to charge their batteries. I am also exploring ways to reduce energy loss even in charging large power batteries like those used in EVs." Mitsuishi Suzuki will continue tackling the issues at hand, hoping that the year 2020 will find wireless power transfer used so commonly in the world that people can charge their batteries very simply no matter where they go.

The electric double-layer capacitor (EDLC) and the separators, TDK's product and material, respectively, also drew much attention. It is difficult to stably supply solar and other intermittent energy, and consequently requires technologies to store it. If a highly efficient storage is available, energy becomes relocatable, enabling use of a required amount at a required time with no concern for the location or time. The concept behind the "smart grid" (the power transmission grid of the next generation) is based on distributed power sources. We heard, "Storage technologies for locally-produced energy will become especially important in the future." Tomohiko Kato undertakes the development of materials for the separators which are to keep the anode and the cathode apart in a battery. Mr. Kato told us, "With today's demand for high-capacity, long-life batteries using no rare earth elements, I want to seek out ideal, highly durable materials and three-dimensional structures for separators. I also wish to tackle the development of process technologies that would yield little waste. I will continue to undertake many kinds of development that would render the TDK technologies useful to a multitude of people and contribute to solving energy problems."

Envisioning an ideal future, and thinking of what to accomplish now from a long-term perspective

Contribution to solving the social problems through the use of TDK products and technologies is the paramount proposition given in the Group's CSR. Today's society faces problems of enormous magnitudes in its energy sector. Technological innovations that address these problems are of absolute necessity. As social responsibility demanded business initiative for achieving a sustainable society, the role that TDK should play toward the future has expanded significantly. TDK's opportunity for showing solid presence in the renewable energy market has also expanded. There was a comment, "I have felt the importance of stopping occasionally, while I busily discharge my daily duties, to envision an ideal future, and think of what I should accomplish now." It drew many approvals and proved to be an opportunity to confirm the importance of a medium to long-term vision.
Passing down TDK’s spirit

In a room in the TDK training facility in Nikaho City (Akita Prefecture), about a dozen voices of trainees to the TDK Monozukuri Tradition Seminars can be heard saying, “Stand up!” “Bow!” and “Please go ahead.” After the opening remarks were delivered, Tomio Kato stepped forward. He is the Trainer of the TDK Monozukuri Tradition Seminars. “In the last class, I mainly spoke about what is at the heart of manufacturing,” Mr. Kato, speaking passionately, had captured the full attention of the trainees in the room.

The TDK Monozukuri Tradition Seminar was started in 2010 in order to cultivate the next generation of company leaders, such as TDK’s future executive managers and plant managers. The catalyst for this new training program was top management concerns about the current state of manufacturing, which is, of course, at the core of all TDK business activities.

TDK’s Corporate Motto is “Contribute to culture and business activities.” Developing core principles which will serve as a foundation to support all the various processes involved in manufacturing. It is crucial that we create a place where we can pass on the legacy of TDK’s “spirit of manufacturing,” and the TDK Monozukuri Tradition Seminars was started with this purpose in mind.

Cultivating excellent manufacturing leaders: The TDK Monozukuri Tradition Seminars

What is TDK’s spirit? What is real customer value creativity? Learning how to boost expertise: Tomio Kato and his trainees help explain more about the TDK Monozukuri Tradition Seminars

Aiming for overall optimization: “through production”

For the past two years now, the TDK Monozukuri Tradition Seminar has been presented three times a year. Six seminars were held so far. The program, which lasts ten days, encourages trainees to think for themselves and implement things on their own. Run under the concept of learning through self-study, trainees attend lectures on TDK’s history and manufacturing activities; they engage in meditation, take plant tours, and engage in on-site trainings. Discussions are held in small groups in which a variety of content is introduced. In addition, trainees have the opportunity for having conversations with top management executives. It is a valuable opportunity for them since it offers experiences not ordinarily available to employees during their normal work. During the seminar, the core lectures are mainly given by Tomio Kato. These lectures on TDK manufacturing are based on his own long and rich career as a technical expert at TDK. This “heart and soul of manufacturing” is approached from various different angles.

For example, one important perspective is that of “through production.” In other words, holistic manufacturing. Rather than looking at only one process of manufacturing, it takes into account the entire life of a product from the materials stage and in-house production all the way to the delivery to customers. By looking at the big picture—and linking the plant to the market—consistency in manufacturing becomes a core principle around which manufacturing is implemented, and this can lead to greater optimization in management as well as manufacturing reforms and improvements.

Manufacturing “from the point of view of the products”

Because my approach to manufacturing is based on years of experience, I have myself wondered if it’s right or not. Taking part in the Monozukuri Tradition Seminar with Tomio Kato, I realized that my thoughts up till now about manufacturing were not off base and this gave me a feeling of great confidence.

The most important thing I became aware of during the seminar was to approach things from the perspective of the products. When Mr. Kato made a plant visit to the Shizuoka Plant, he said watching the packaging process, “Aren’t you all hurting inside? I feel pain since the products say they are in pain!” When packaging the product, the work could be pushing down lightly on the top of the product to enable it to fit inside the box. No one imagined that it could be hurting the product, but Mr. Kato’s massage was that we must always work keeping in mind the perspective of products.

We are currently trying to apply some of the key concepts learned from the seminar in order to recapture our position as the world’s number one ferrite magnet manufacturer. In order to realize timely supply of our products with necessary quantity and high quality at a low price, it is necessary to implement the “through production” in other words, holistic manufacturing. In the “through production” line, all the manufacturing processes, from materials phase to shipping phase, are to be integrated into one process flow and realize maximum “output (sales)” with shortest lead times using minimum “input (materials, equipment, staff, energy, etc.).” With maximizing the throughput, we aim at providing the customer with the highest level QCDSS (quality, cost, delivery, and service).

This expanded point of view will ensure a more thorough implementation of the ideals that “quality comes first” and “customer orientation.” This perspective goes beyond just thinking about things from the manufacturing angle, but rather seeks to ask questions about the kinds of products that experts in their respective fields, and we are therefore unable to attain overall optimization in manufacturing. We need to cultivate true “manufacturing leaders” who will be able to develop core principles which will serve as a foundation to support all the various processes involved in manufacturing. It is crucial that we create a place where we can pass on the legacy of TDK’s “spirit of manufacturing,” and the TDK Monozukuri Tradition Seminars was started with this purpose in mind.
The evolution of TDK manufacturing

Rather than focusing on individual employees, another theme of the seminar is to create a team made up of a broad range of manufacturing leaders from all the different areas of manufacturing, such as sales, development, design, manufacturing, production control, quality assurance, and manufacturing technologies to try and bring about a complete reformation in manufacturing. Based on the concepts of "through production" whereby manufacturing is approached from a holistic perspective that creates value from the point of view of the customer, the seminar will result in improvements to the entire manufacturing process, which will incorporate efforts from employees from a variety of departments.

So far, the TDK Monozukuri Tradition Seminar has seen 69 employees participating in 19 groups. The 4th term seminar, held at the Dongguan Changhan Huanan Electronics Factory in July 2011, was the first seminar to be held outside of Japan. Mr. Kato described feeling slightly worried when he first learned the course would be held outside of Japan, saying “Because of the differences in culture, at first I worried that our ways of thinking may not be understood. However, the trainees were extremely attentive to the lectures and were very proactive in applying what they learned about traditional TDK manufacturing to their worksites. I could see progress in both the employees as well as in the plants and this was truly wonderful to see.” Local plant employees attended the 5th term seminar and practical on-site training held in Malaysia. Mr. Kato said that he wants to accelerate his continued contribution to human resource development in the Company so that TDK can become a truly competitive company which can generate new value in society by not only taking the direct customers into consideration, but also keeping the end product consumers in mind. “And, it won’t be me that will allow us to do this but each of the trainees who I hope will use the knowledge they learned in the seminar, become manufacturing leaders in their own right, and pass it down to the younger generation,” said Mr. Kato.

It is the spirit of manufacturing that allows TDK to stand as “a company that is trusted by society.” Our success in this is due to both our ability to evolve with the times while we recognize the traditions that have nurtured our company this far and pass them on into the future.

The TDK Monozukuri Tradition Seminars

TDK President Takehiro Kamigama has passionately spoken about how TDK can contribute to society through the creation of new and highly-unique materials and components. TDK, a company that came into being as the world’s first business venture to sell ferrites, is a company with unique manufacturing traditions. I think it is very important that this seminar has started to teach younger employees about the traditions of the company, and I think this seminar will surely come to bear fruit in many ways. I was also impressed by TDK’s Corporate Principles of “vision,” “courage,” and “trust.” Creative originality requires having a vision. Courage to challenge and trust others is vital to achieve a vision. Often one finds that corporate principles are decorative phrases that only gather dust. In contrast, TDK’s principles are those that create a vision or culture and are utilized in the company’s everyday research and development. This was clearly by reading TDK’s CSR reports, where it was apparent that at TDK an independent and vigorous corporate culture actually serves to support researchers in their pursuit of perhaps unattainable dreams or to help promote various departments working together in development. I expect the Company to foster and develop their human resources, both in Japan and overseas, as a leading global corporation that values its unique corporate culture of manufacturing.

Development of human resources

In order to strengthen the development of “self-sustained human resources” which is the objective of the human resources development, TDK has been carrying out a variety of human resource development programs. As part of the company’s human resource development policy, the company has so far organized IMD (International Management Development) seminars and cross-cultural communication trainings. The overseas trainee programs are aimed at younger employees. TDK plans to increase the number of participants in Japan and overseas by focusing on the following:

1) to gain a better understanding of different cultures and to make use of the gained knowledge
2) to gain ability to engage in global business
3) to establish human network

In addition, a continued effort is being made to increase CSR-consciousness in-house through training courses targeting employees at different levels in their careers, group training, and e-learning, with the aim of putting into practice CSR activities in the TDK day-to-day operations of each and every employee.
Working toward a win-win relationship with customers and suppliers: TDK’s CSR procurement

TDK Group business activities are supported by the many solid relationships we have with our customers and suppliers. This article will discuss what kind of CSR policies and practices are being promoted by the TDK Group from our position as both supplier and buyer.

In recent years, stakeholders have been turning their attention to “responsible products,” so the production process, in terms of human rights, labor, and the environment, of products is being analyzed just as closely as quality. In 2004, the three big American IT companies (Hewlett-Packard, IBM, and Dell) took initiative to draft the EICC (Electronic Industry Code of Conduct). This was followed in 2006 by the Japan Electronics and Information Technology Industries Association (JEITA) drafting its own code of conduct, called the JEITA Supply-Chain CSR Deployment Gudiebook. This has led to increasing interest and demands in terms of CSR in Japan.

Before a product reaches its end consumer, it starts off in the procurement stage involving the purchasing of raw materials from any number of companies. Often this process from procurement to product sales takes place across borders. TDK, as a company that manufactures and sells component products, is involved in the procurement of raw materials and the buying of prefabricated parts. TDK therefore is both a buyer and a supplier. Because TDK is a kind of “midstream” company that both procures parts and outputs components, it is involved in the procurement of raw materials and the buying of prefabricated parts. TDK is a midstream company that both procures parts and outputs components, it is involved in the procurement of raw materials and the buying of prefabricated parts. TDK, therefore, having manufacturing sites in four different countries is no longer acceptable to manufacture products.

In addition, TDK is facing challenges in finding local suppliers that meet both our CSR demands and our requirements of materials or parts. “We are now in an age when it is no longer acceptable to manufacture products with components from suppliers that are less aware of CSR. First, TDK clearly shows the CSR requirements we attach importance to and it is crucial that TDK collaborates with suppliers and strives to meet those requirements,” says Mr. Ono, looking toward the future.

TDK aims to build solid partnerships with its suppliers and maintain a win-win relationship, guided by our “Global partnership purchasing principles,” that benefits both parties. In order to respect the work environment and human rights of all people involved in the supply chain, TDK is committed to engaging in active communication in its continued promotion of CSR.

Emphasis on providing responsible products from the perspective of the supply chain

In recent years, stakeholders have been turning their attention to “responsible products,” so the production process, in terms of human rights, labor, and the environment, of products is being analyzed just as closely as quality. In 2004, the three big American IT companies (Hewlett-Packard, IBM, and Dell) took initiative to draft the EICC (Electronic Industry Code of Conduct). This was followed in 2006 by the Japan Electronics and Information Technology Industries Association (JEITA) drafting its own code of conduct, called the JEITA Supply-Chain CSR Deployment Gudiebook. This has led to increasing interest and demands in terms of CSR in Japan.

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A self-check sheet to raise CSR awareness

In 2009, TDK decided to make “EICC + JEITA” the cornerstone of the company’s CSR activities for TDK production sites. The company then created a “TDK CSR Self-Check Sheet” to be used at our main production sites. “Until then, customer requirements regarding quality, delivery and costs were the main concerns. However, with the introduction of new practices concerning labor and the environment, which are reflected in the TDK CSR Self-Check Sheet, we discovered that there were things the customers wanted as well,” said Yasuaki Fukukoka, who works in the Strategic Planning Department.

Since 2010, a team from the CSR Promotion Office has made annual trips to visit TDK plants, mainly in China and Southeast Asia. The CSR demands we get from our customers are not uniform in the laws and regulations and social background differ from country to country, and therefore TDK visits its overseas production sites in order to both grasp the current situation on site as well as to work to promote a stronger understanding of CSR. “We have been increasingly seeing companies that state that unless certain CSR requests are not addressed, they will rethink their business with us. There is a diversity of values and meeting these differing values will pose a challenge in the future” Mr. Fukukoka said.

Our policy is to continue carefully communicating with all of our production sites to solve problems one by one as they come up.

TDK’s position in the supply chain

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2012 CSR Activities Report

The TDK CSR Self-Check Sheet has been implemented every year, since 2009, at major TDK Group production sites, and CSR internal audits were conducted at some of those sites this year. TDK will continue to support these activities, while we improve in the level of CSR activities within the TDK Group.

The company continued to ask suppliers to use the existing TDK Supplier Partnership System to fill out the CSR check sheet. This allowed the TDK ability to ascertain the current situation. Revisions were also made to the CSR check sheet and CSR audits and briefing sessions were held in order to improve its own CSR activities.

In addition, regarding to conflict minerals, clear communication is considered the most important responsibility of the Company; and TDK both request information from their suppliers as well as provide clear answers to its customers. The company is striving to construct an internal system which is based on a strong understanding of laws and regulations to benefit CSR operations.
Tackling the challenges of encouraging the use of next-generation energy on a global scale

In our modern world, it has become clear that energy problems must be tackled on a global scale. While the demand for energy still is on the rise, a plentiful supply is by no means assured. Finding ways to distribute energy more efficiently and utilizing alternative sources to fossil energy are therefore topics of vital importance.

From a base in Europe, where the use of renewable energy sources is progressing, the TDK Group participates in these efforts through its power capacitor business.

The TDK Group has contributed to several successful high profile projects in the growing VSC HVDC market. They include the Trans Bay project from 2008 (an HVDC link extending the length of the San Francisco Bay) and two major projects starting from 2010 to connect the North Sea wind farm projects BorWin 2 and HelWin 1. Most recently, we have supplied capacitors for the link project for the SylWin cluster of wind farms in the North Sea. For all of these projects which are undertaken by one of the largest electrical manufacturers in the world, EPCOS brand power capacitors were selected.

A further example is the INELFE project linking the power grids of France and Spain as part of a trans-European power transmission network. Power capacitors produced at a new plant in Málaga are to be used for this project.

In the near future, major wind power projects will be launched in locations such as the German Bight and off the east coast of England. In the long run, however, the focus of the energy business is likely to expand beyond Europe to other markets and projects. One such project could be Desertec, a concept to generate solar power and wind power in the desert regions of northern Africa.

The TDK Group not only offers a broad lineup of electronic components that help to improve energy efficiency, we are also actively involved in a variety of markets, such as automobiles and rail transport, digital home appliances including mobile phones and other mobile information devices, medical equipment, and more. Furthermore, energy systems for the generation and transmission of electrical power present new business opportunities through which we can contribute to society. The energy market is undergoing drastic changes on a global scale. Not only in the industrialized countries but also in rapidly emerging markets such as China, India, and Brazil we are seeing a transition towards expanding the use of renewable energy sources including solar power and wind power.

Power companies the world over want to minimize the losses that occur during long-distance transmission of electrical energy, and are increasingly adopting HVDC (High-Voltage Direct Current) transmission systems to this end. A large advantage of the HVDC approach is superior transmission efficiency, with losses over a distance of 1,000 kilometers being as low as 3 percent. Compared to AC transmission systems that can have losses of 6 percent and more over the same distance, this is clearly a better solution. For example, compared to AC transmission HVDC can avoid losses of about 120 megawatts when 4,000 megawatts are to be transmitted, or enough electricity to power about 30,000 homes.

EPCOS brand power capacitors are expected to play an increasingly important role in stabilizing HVDC systems. In advanced multi-level voltage-sourced converter (VSC) HVDC systems, up to ten times more power capacitors are needed compared to conventional HVDC systems. Incorporated into VSC HVDC modules for use in converter stations, the capacitors serve to smooth high voltages in the several thousand volt range.

Minimizing energy losses during long-distance transmission of electrical energy

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Tackling the challenges of encouraging the use of next-generation energy on a global scale

The continued improvement of energy efficiency will be one of the major goals pursued by TDK also in the near future. Power capacitors are widely used in power generation, power transmission, power conversion, as well as power quality and power factor correction. Application areas include mass transportation, cars and trucks, generation and distribution of renewable energy, power factor correction installations, industrial drives, medical equipment, and much more.

The rapidly growing number of offshore wind farms around the globe will accelerate the market for state-of-the-art VSC HVDC technology. Many large-scale projects are being drawn up, with China emerging as a major focus area besides Europe. The number of companies operating in the HVDC systems sector also is growing accordingly. Within this global trend, TDK can make use of its unique strengths, to contribute to the realization of a sustainable society.

TDK has extensive experience in R&D and manufacturing and has built close relations with key customers based on mutual trust. We have an outstanding track record and a comprehensive grasp of the large-scale project business. These advantages will allow us to maintain and expand our position as one of the world’s leading manufacturers of power capacitors.

Optimized manufacturing concept

Due to new applications and innovative products, customer requirements for reliability have reached an unprecedented level. In order to meet these needs, creating a manufacturing setup that is innovative and efficient has become a number one priority. Our new factory opened in Málaga in 2011 not only implements a significantly increased level of automation and lean manufacturing concepts, but also employs state-of-the-art methodologies for saving energy in production, reducing waste, and protecting the environment. I am especially happy that in the energy rating by LOMA INGENIERIA, the new facility has achieved a rank of “B” for its primary energy consumption, which means that it uses less than 60 kWh of energy per square meter per year. This is a benchmark for low energy design of any kind of new building.

When we started to plan our new plant in Málaga, we realized that we had a unique opportunity to completely re-engineer the entire production flow. Even though this required enormous investments, we are certain that we will receive a good return on them. Customer feedback during visits to the Málaga factory has been overwhelming.

The layout of this facility sets the global benchmark in power capacitor manufacturing today. We are proud of our new plant. We understand that it is our task not only to provide world-class products to global markets, but also to enable and support our plants in Nashik, India, and Ningguo, China. These plants will also manufacture MKK HDVC power capacitors for the fast growing markets in these regions and support our customers there with the highest quality and reliability products for HVDC applications.

Achieving symbiosis with the global environment

2012 CSR Activities Report

TDK has established the TDK Environmental Charter as our Group environment policy with the aim of contributing to sustainable development. The TDK Environmental Action 2020 set a goal for achieving carbon neutrality based on environmental activities centered on environmental contributions through products, which is a first in the electronic components industry and progress is being made.

In order to reduce environmental load, TDK reinforced its priority energy-saving programs in China, which accounts for about half of TDK’s CO₂ emissions. With the aim of increasing environmental contributions, TDK also completed the quantification of the environmental contribution of some of its product families, and, in fiscal year 2013, TDK will work on the preparation of calculation standards and the quantification of environmental contribution for all other product families that are calculable.

Comments from the Expert

Shunsuke Managi
Ph.D., Associate Professor
Graduate School of Environmental Studies
Tokai University

Achieving symbiosis with the global environment will require that business enterprises address environmental issues such as climate change. New technologies and products will be needed to control emissions from numerous locations. In addition, as the prices of oil and other resources rise, especially in industries that use large amounts of resources, the efficient use of resources will lead to a competitive advantage.

The TDK Group has prepared a report that fully appreciates the need to secure a competitive advantage by anticipating these market changes. The development and spread of new power capacitors that minimize energy losses will lead to higher environmental efficiency in the value chain, an indicator of the ultimate added value of corporate activities. These measures will reduce the environmental load and environmental risks and can contribute to carrying out the TDK Environmental Action 2020 Policy. In addition, lower energy consumption will result in lower expenses. I look forward to TDK developing new growth areas in the field of symbiosis with the global environment in the future.