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The Denka Way

The Challenges of Denka in Pursuit of a Recycling-oriented Society

The Denka Way

Spring
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Denka

世界に誇れる、 化学を。

その仕事は、未来に新しい価値を提案しているか。
人と地球の明日を幸せにしているか。
私たちが創立以来、追求してきたのは
ほかの誰にもできない、デンカならではの強みを生かして
社会を、世界を、よりよく変えていく挑戦です。

100年を超える伝統と、最新のテクノロジーを融合させ
化学の未知なる可能性を切りひらくこと。
未来のニーズを予測し、まだ見ぬ豊かさを創造すること。

環境・エネルギー分野での先端素材の開発や
ライフサイエンス領域のさらなる推進など
私たちは「世界にとってかけがえのない存在」となる
企業をめざし、社員一人ひとりがストーリーを描き
多様化する社会の課題に、誠実に取り組み続けます。



Denka

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A new way to recycle

Chiba Plant Begins Chemical Recycling of Polystyrene

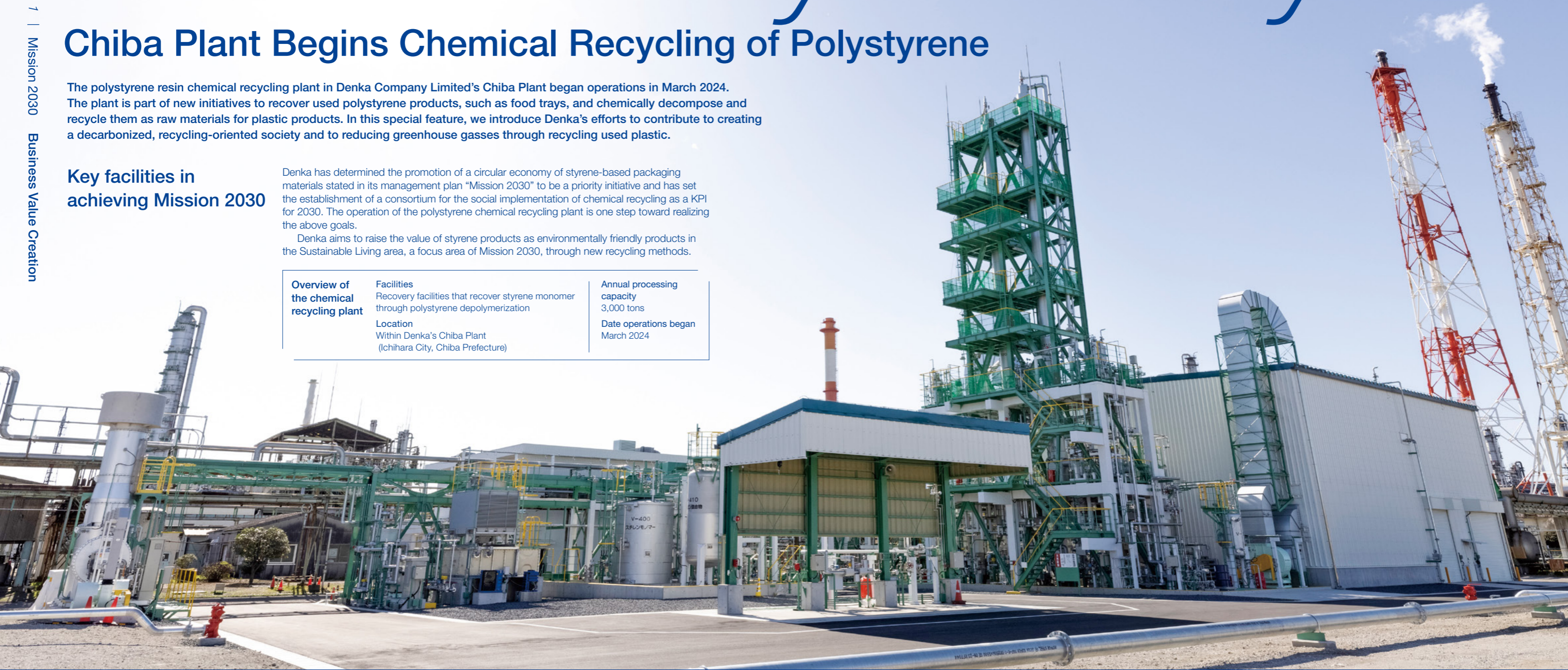
The polystyrene resin chemical recycling plant in Denka Company Limited's Chiba Plant began operations in March 2024. The plant is part of new initiatives to recover used polystyrene products, such as food trays, and chemically decompose and recycle them as raw materials for plastic products. In this special feature, we introduce Denka's efforts to contribute to creating a decarbonized, recycling-oriented society and to reducing greenhouse gasses through recycling used plastic.

Key facilities in achieving Mission 2030

Denka has determined the promotion of a circular economy of styrene-based packaging materials stated in its management plan "Mission 2030" to be a priority initiative and has set the establishment of a consortium for the social implementation of chemical recycling as a KPI for 2030. The operation of the polystyrene chemical recycling plant is one step toward realizing the above goals.

Denka aims to raise the value of styrene products as environmentally friendly products in the Sustainable Living area, a focus area of Mission 2030, through new recycling methods.

Overview of the chemical recycling plant	Facilities Recovery facilities that recover styrene monomer through polystyrene depolymerization	Annual processing capacity 3,000 tons
	Location Within Denka's Chiba Plant (Ichihara City, Chiba Prefecture)	Date operations began March 2024



Issues of using polystyrene

Polystyrene (PS) has a wide range of uses, including LCD TVs and transparent resin products such as food containers and cosmetic containers, and is an indispensable material for life in a prosperous society. However, in recent years, the demands placed on polystyrene have become increasingly strict with the increased focus on the marine plastics issue, carbon neutrality, and other environmental issues.

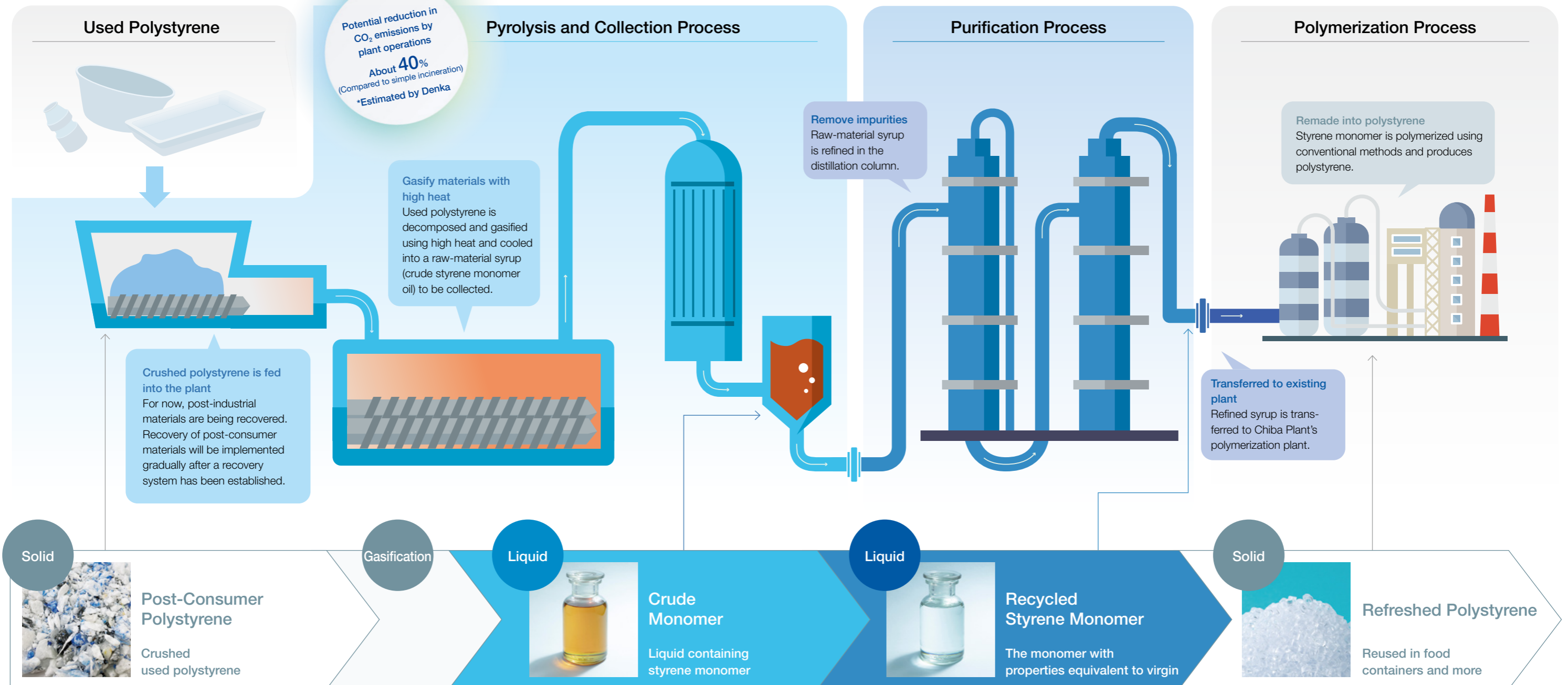
Over 60% of the Japanese demand for polystyrene is for food packaging, but conventional recycling methods make it difficult to reuse in applications that come into contact with food due to problems in quality and safety. Thus, Denka and TOYO STYRENE Co., Ltd., an equity-method affiliate, believed it was necessary to build a new type of resource-recycling system and decided to co-operate a chemical recycling plant.



The chemical recycling system for polystyrene

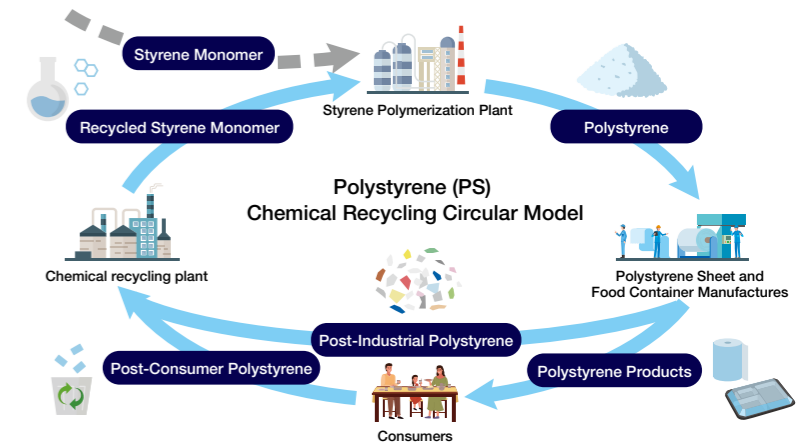
The chemical recycling plant performs pyrolysis, recovery, and refining processes. Denka signed a licensing agreement with the American company Agilyx, the only company in the world performing commercial chemical recycling operations for polystyrene, and implemented the technology for the pyrolysis and recovery processes. In regard to the refining process, the styrene monomer manufacturer Denka applied their separation technology for high-purity styrene monomer and handling technology in designing the plant.

Chemical recycling plant manufacturing process



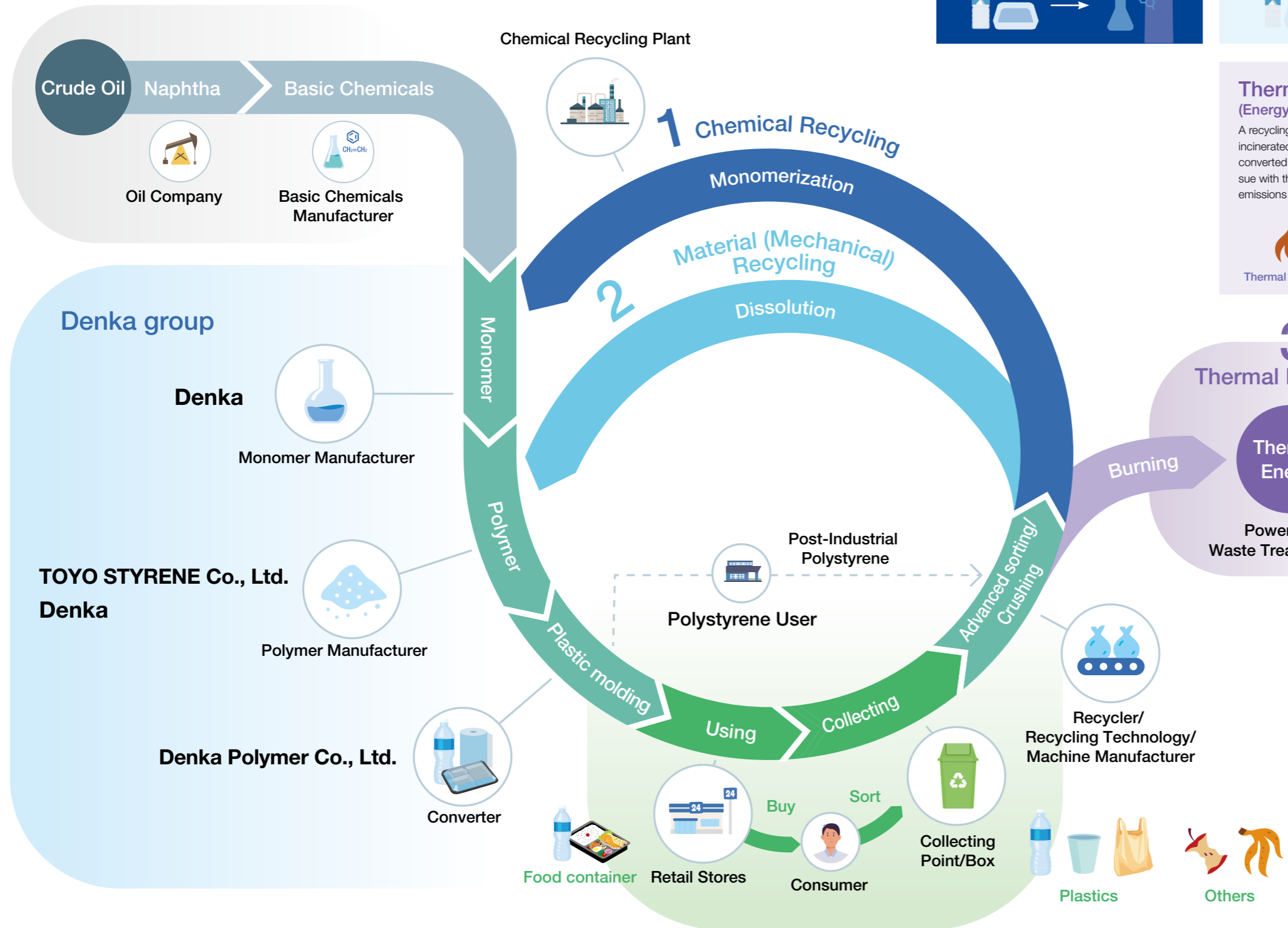
Recycling model

Denka recovers used containers (post-consumer materials), mainly from food packaging, and mill ends (post-industrial materials) from sheet and container manufacturing plants (processes), and feeds them into the chemical recycling plant. The polystyrene products are then decomposed with heat and returned to high-purity styrene monomer. This styrene monomer is then used as a raw material in manufacturing refreshed polystyrene at the polystyrene polymerization plant. This recycling model allows for the polystyrene to be reused in food packaging.



Toward recycling polystyrene

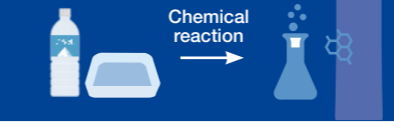
Denka Group's chemical-recycling initiatives are gathering attention as a system with low-carbon emissions that enables horizontal recycling. Denka is accelerating efforts toward resolving issues, such as establishing a system for the stable recovery of used polystyrene and reducing the cost of recycling.



Three kinds of recycling

Chemical recycling

After used plastic is thermally decomposed and returned into chemical raw materials, they are re-synthesized into plastic. With physical properties equivalent to new plastic, there is no limit to its use and it can be used an indefinite number of times.



Material recycling

A recycling method in which used plastic is crushed, re-processed, and recycled into plastic products. This method is widely used, but it is difficult to prevent impurities from being mixed into the plastic, causing the plastic's performance to deteriorate with each time it's recycled and limiting its uses in terms of quality.



Thermal recycling (Energy recovery)

A recycling method in which plastic waste is incinerated and collected as thermal energy or converted to solid fuel for effective use. The issue with this method is the large amount of CO₂ emissions given off due to using incineration.



First in Japan!

Corporations, citizens, and local governments collaborate in the chemical recycling of polystyrene

Recycling promotion of Team Ichihara

The collaboration of local residents and governments is essential to recovering used polystyrene. Denka Group is participating in the circular economy project being promoted by Ichihara City, home to Chiba Plant. In Ichihara City, the trial recovery of post-consumer materials was implemented between July and September 2023. As a result of the trial, Denka Group plans to collaborate with Ichihara City to start collecting foam trays, colored foam trays, lactic-acid bacteria beverage containers, natto containers, and Styrofoam in summer 2024 and to promote the chemical recycling of these raw materials.



Ichihara City Office

Polystyrene recovered for chemical recycling

Foamed Polystyrene	Foamed Trays	
	Foamed Trays (Colored)	
	Natto Containers	
	Styrofoam	
Non-foamed Polystyrene	Lactic Acid Drink Bottles	

Denka is building a polystyrene recovery system together with business partners and the government, toward the future social implementation of chemical recycling through optimal recycling of polystyrene. Additionally, Denka is reviewing the possibility of collaborating with other local governments. Denka advances the demonstration of future plants.

Digital & DX

Informativics

Creating new businesses by collecting and utilizing all internal information

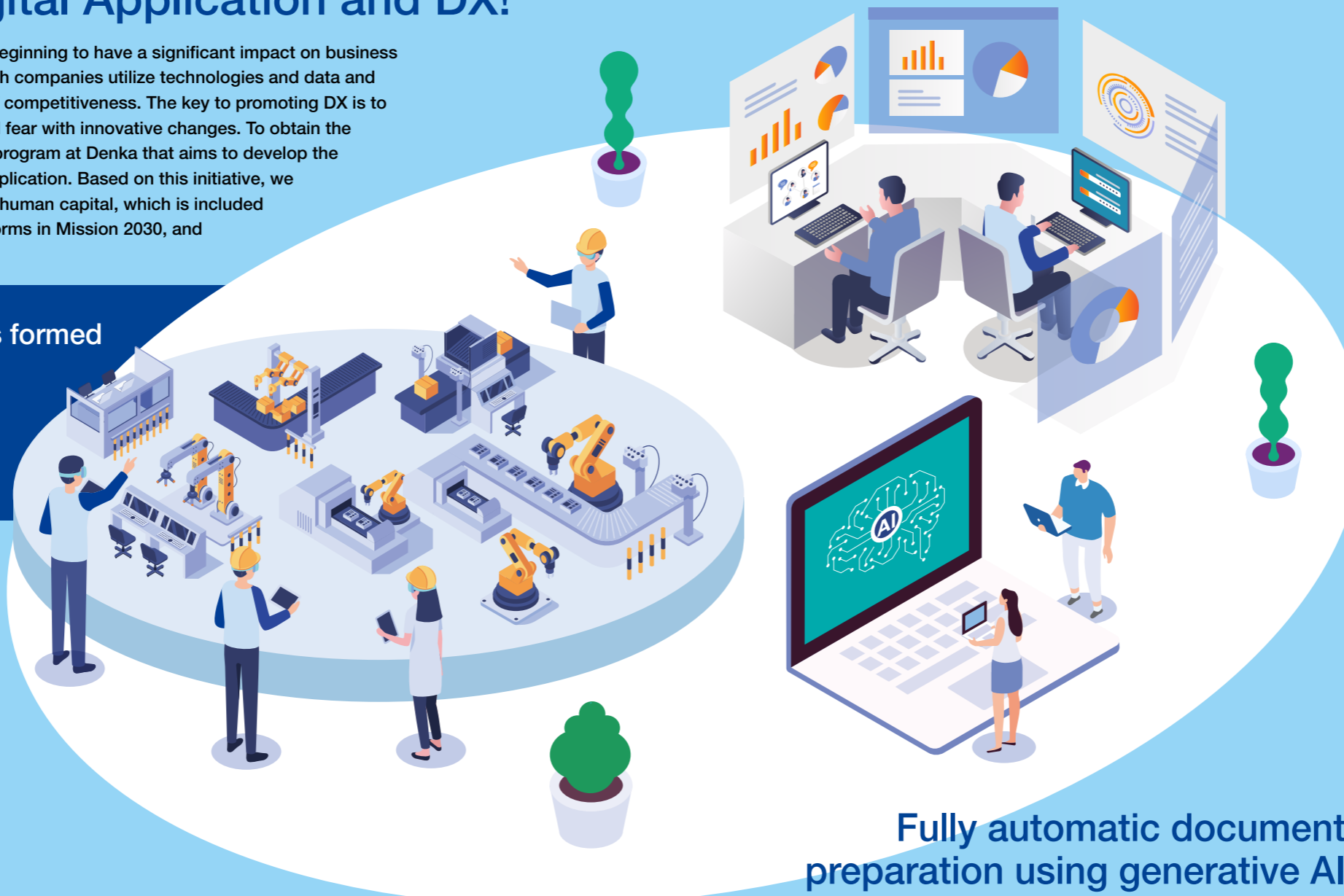
Not only being able to aggregate and easily extract internal sales information, research results, and other information at will, but also being able to derive ideas that will lead to new businesses based on collected data.

Starting a Human Capital Development Program for Advancing Digital Application and DX!

As the use of digital technologies and data is beginning to have a significant impact on business and society, digital transformation (DX), in which companies utilize technologies and data and transform themselves, has become a source of competitiveness. The key to promoting DX is to use digital technology and data, and not to feel fear with innovative changes. To obtain the skills and the mindset, we have started a new program at Denka that aims to develop the human capital who will lead in-house digital application. Based on this initiative, we will realize the development of in-house digital human capital, which is included under management value creation process reforms in Mission 2030, and increase Denka's competitiveness.

Possibility of new work styles formed by digital application and DX

A visualization of future work styles of Denka, followed by the advantage of using digital application and DX. Its realization may just be around the corner.



Digital Twin

Predictive maintenance of facilities using digital twins*

Reproduction of real-world plant facilities in cyberspace through the use of devices connected to the network. Facility breakdowns can be predicted using past data, and the breakdown of devices can be prevented even with people not being on-site.

*Technology that reproduces data collected in the real world on a computer as if this reproduction was its twin

Fully automatic document preparation using generative AI

Quickly and easily prepare proposals with just a command to AI. Increased operational efficiency and productivity can be expected as time that was previously used for preparing documents can be used for other operations.

Generative AI

What is a DP?

Amidst a number of companies taking on the challenge of DX, Denka also needs to promote the application of digital technologies. It will be left behind by the times if it does not address DX. However, DX is not something that can be realized just by introducing devices and systems, but is something that is created using ideas and the sense of crisis that are experienced while working. We all have these kinds of thoughts and feelings, but there are probably many people who do not know what exactly needs to be done. The majority of them are also unable to imagine how to realize it. The goal of this in-house digital human capital development program is to develop human capital who act as the mediators who consider how to respond to the need for improvement and sense of crisis felt by employees on site. At Denka, this role has been named Digital Pilot (DP), and they will lead the way in influencing Denka to become an organization where all employees can advance digital application and DX.

In November 2023, an assessment was conducted for some employees as the first step for this program. This assessment judged qualities such as ideas not constrained by common knowledge in order to face innovation without fear and the ability to lead the organization. Employees who cleared specific standards proceeded to the next step as DP candidates. Going forward, they will receive skill improvement training and practical training to be officially recognized as DPs who will advance digital technology application and DX at each workplace as the people who possess both on-site and digital perspectives.

The current goal is the development of the first group of DPs. On the other hand, although DPs are facilitators, it will have no meaning if each and every employee does not act with a sense of ownership. As such, it is necessary for everyone to take time to think about what they can do. The Digital Strategy & Innovation Department and DPs will provide support to turn those ideas into reality.

Roadmap

In-house digital human capital development roadmap

Aiming to be a presence that leads the advancement of digital technology application and DX

In order to become a Digital Pilot (DP) who advances digital technology application and DX internally, what specific skills need to be acquired? We will introduce the details of the in-house digital human capital development program conducted by Denka.

Three key points for the in-house digital human capital development program

Point 1 You can try as many times as you want

As long as you are motivated, you can take part in basic training and skill improvement training as many times as you want. Denka is aiming for one DP from each department with the process from assessment to practical training being carried out yearly.

Point 2 Participating while remaining in your current position is recommended

Starting from skill improvement training, you will be able to adjust your work and take part during work hours. Receiving this training while maintaining a sense of crisis, sense of challenge, and sense of purpose toward your own workplace will lead to motivation for change.

Point 3 Arrangement of incentives

"In-house digital human capital" is the theme that should be focused on as a top target for Denka's human capital strategy. Aiming to increase internal motivation and foster a climate conducive to change, incentives will be arranged for employees who become DPs and their organizations.

Assessment (approx. one hour)

All employees are eligible to take the assessment. The assessment is mandatory for G-section members (including mid-career hires) who are in their fourth year or later and below the position of manager, and may be taken voluntarily or by recommendation for all other employees. The test will primarily evaluate mindset and stance as well as skills in relation to digital technologies, and employees who exceed the benchmark will be entitled to proceed to skill improvement training as DP candidates. Employees whose scores do not reach the benchmark may participate in basic training and take the assessment as many times as they like.

Skill improvement training

DP candidates will utilize the online video service UdeMy and learn the necessary skills for becoming a DP at Denka. Employees judged to have attained the level of skill required of a DP at Denka will step up to practical training. Employees who have not yet attained this level of skill can participate in skill improvement training as many times as they like.

Six to twelve months

Skills required to step up to the next level

● Business reform

Ability to utilize digital technologies to reform an organization's operational processes, culture, and strategies

● Technology

Ability to realize business transformation and innovation, by correctly understanding and utilizing digital technology.

● Security

Ability to protect information assets, systems, and from potential risks and threats while utilizing digital technology to realize business transformation and innovation.

● Personal skills

Practical ability to effectively generate results in interpersonal relationships and job performance through the utilization of skills that include personal communication, problem solving, intelligence, and adaptability

● Data application

Basic knowledge for generating business value and realizing innovation by collecting and analyzing data, utilizing data and AI technology, and helping with insights and decision-making

DPs will drive the advancement of digital application and DX in each department. As DPs will serve concurrently in the Digital Strategy & Innovation Dept, incentives will be arranged for the DP and their organization.

Goal!
Development program complete!

Approx. three months

Practical training

Period of independence for practicing self-led, data driven judgments and decision-making, and driving DX advancement as a leader. DP candidates will take on the challenge of setting goals and resolving real business issues. They will be officially recognized as DPs upon the completion of practical training.

Approx. six months

Basic training

Employees whose scores do not reach the benchmark for the assessment can take part in e-learning in accordance with DX Literacy Standards (DSS-L) to acquire DX-related literacy as businesspeople and become able to take action through change. Basic training contains approximately 12 hours of content for improving basic abilities and approximately 40 hours of content, etc. that introduces the latest case studies.





Q1 What does “DX” mean?

A Triggering innovation through the use of digital technologies!

As defined by the Ministry of Economy, Trade and Industry, DX is “the utilization of data and digital technologies for the transformation of operational processes, products and services, and businesses themselves, in addition to the establishment of a competitive advantage through the reformation of operations themselves, organizations, processes, corporate culture, and climate.” For example, just as physical video rental shops have fallen off due to the emergence of online video streaming services, it is believed that DX has the most influence for changing conventional norms.

Q5 Amid the advancement of digital application and DX, what are the distinguishing characteristics unique to Denka and what skills/type of mindset are required?

A It is important to not separate workplaces from the whole

This could involve gathering and training employees throughout Denka, or hiring knowledgeable people from external sources in order to advance digital application and DX. However, without an understanding of the situation on-site, it will be difficult to come up with concrete solutions and gain the understanding of those around you. It is important to look toward the issues and problems in your own workplaces while working and learn digital skills and mindset along the way.

Q2 What is the difference between “DX (Digital Transformation)” and “Digital Application”?

A Digital application in and of itself cannot be called “DX”!

It is often thought that converting analog to digital and digitalizing conventional methods are “DX,” but the difference between DX and digital application is whether or not significant changes have been brought about. “DX” is when unprecedented changes occur, such as a fundamental change in work styles, the creation of new products, or a completely new customer experience.

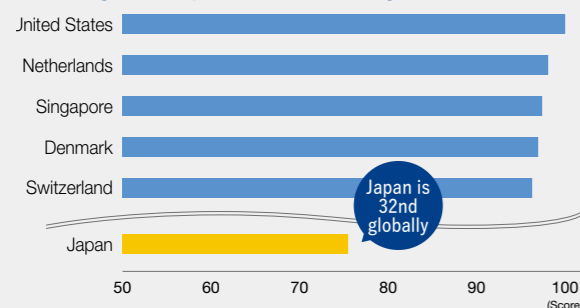
Q3 Are “Digitization” and “Digitalization” related to DX?

A “Digitization” is changing things that were once analog to digital. “Digitalization” refers to making processes digital. Using photos as an example, “Digitization” is how photos, which were previously stored in albums, are now saved as data on smartphones. “Digitalization” is how we can now share photos over the internet without meeting face to face. In order to realize DX, these are the first steps.

Q4 Where does Japan rank with regard to the advancement of digital application and DX?

A Compared to other countries, Japan has actually fallen behind to the point that it can be called a “digitally defeated country.” Over the past 20 years, the amount invested into IT domestically has not increased, and during that time, other countries’ labor productivity has increased while Japan has been in a state of stagnation. In the current times, where the application of digital technologies and data has a significant impact, it is necessary to proactively advance digital application and DX so that we can catch up to and overtake other countries.

World Digital Competitiveness Ranking 2023



Source: World Competitiveness Center IMD World Digital Competitiveness Ranking 2023

Answered by the Digital Strategy & Innovation Department and DX Q&A

Q&A

Digital Application and DX

The Digital Strategy & Innovation Department will answer questions surrounding digital application and DX!

Q6 Going forward, what are the issues surrounding the advancement of digital application and DX?

A It is necessary to create an environment where it is easy for DPs to work.

Digital Pilots (DPs) will be established in the future, so it is very likely that they will run into issues such as not knowing where to start after being assigned to a department or being unable to gain the understanding of their superiors when they begin reforms. We will establish a structure where it is easier to work, such as by creating an organization that can support DPs when they face these types of problems. Internal advancement of digital application and DX will become more active by thinking of solutions together and helping other departments work with each other.

Q7 Will it be necessary to acquire digital skills and foster a digital mindset for all job types going forward?

A It will be necessary as digitalization is advancing!

However, this does not mean that all employees should aim to become DPs. There are the ones who promote digital utilization and DX like DPs, and others who collect data and promote digital transformation. And also there are the ones who design the system to analyze data and implement them or operate analysis mechanisms, and others who protect the company from cyber security risks. Amid the various roles, you may be required to develop the skills and mindset, which is necessary to carry out your vision in the future.

Q8 Where should employees start to become DX human capital?

A Think about ways to make your job easier!

It would be good to think about how to make your job easier and what you could do to finish your work even faster, and then broaden your ideas from there. The Digital Strategy & Innovation Department will think of concrete ways to achieve your ideas together with you. If there is something that you have noticed or something that you want to try, please feel free to reach out.



"DX and digital application will greatly expand Denka's possibilities," said Mr. Nishiwaki of Microsoft Japan. We asked him about the DX human capital that hold the key.

DX human capital will create new value for Denka



Evangelist and Executive Officer **Motoaki Nishiwaki**
Microsoft Japan Co.

PROFILE An evangelist who shares the appeal of Microsoft products and services with society. Since the 1990s, he has engaged in enterprise systems, databases, Java, and Internet businesses. Starting in 1996, he worked as an evangelist at Oracle for 13 years. Since 2009, he has been working as an evangelist at Microsoft.

Necessity of DX human capital in DX and Digital application

DX will lead to significant advances in business. At Denka, it will not only revolutionize the way you work but it also holds the potential to create new materials and businesses.

However, when it comes to adopting digital technology, companies tend to focus on short-term initiatives such as cost reduction. As Denka takes on the challenge of creating business value under Mission 2030, it is necessary to deliver high-value-added products to more customers in the future. To achieve this, it is essential to have DX human capital who will strongly promote DX and digital application.

DX human capital are those who acquire digital skills and use them to lead change. They must not only possess digital skills, but also have the mindset to change various aspects, such as their company's operations, products, and work styles, for the better. Developing DX human capital is the first step in driving DX and digital application. To achieve this, companies must provide opportunities for employees from all departments and backgrounds to learn

digital technologies and mindsets. In addition, employees must adopt a mindset of digital reskilling to continue learning and stay updated with evolving technologies.

To drive DX and digital application, it is also essential for the management team to support DX human capital. DX comes from challenging traditional methods and continuously improving them with digital technology. However, no matter how many innovative approaches DX human capital propose, DX cannot advance without an environment that embraces them. To foster a culture of DX advancement throughout the organization, it is critical for the management team to convey the message that the company will actively promote DX and digital application, with DX human capital at the forefront.

Unconventional ideas will open the way to Denka's future

As Denka moves forward with these initiatives, the promotion of diversity, equity, and inclusion that addressed in Mission 2030 will also be a strong advantage. The mix of employees with

different ideas and perspectives will enable us to make changes that will transform Denka's business. It is also important to think about what you want to achieve with DX and digital application. Once DX is realized, Denka can further expand Denka's business domain by finding new materials and discovering new applications for materials that have never existed before.

Achieving immediate results in DX and digital applications is not easy. However, I hope that everyone at Denka will continue to challenge themselves without being constrained by conventional methods and practices, and create new value that has never been seen before.



Pursuing the Potential of Acetylene Black Together

Denka boasts the world's largest market share for its flagship product—acetylene black. Known for its extremely high conductivity and low impurity content, it is used in a wide range of products, including the lithium-ion secondary batteries essential for electric vehicles and high-voltage cables used in wind power generation. To further explore the potential of acetylene black, Yusaku Harada and Tatsuya Nagai engage in a constant process of trial and error.

Their current focus is on developing acetylene black with characteristics suitable for lithium-ion batteries. With the expansion of the electric vehicle market, the advancement of lithium-ion batteries has become a pressing issue in recent years, and acetylene black has garnered attention as a necessary material. "For customers to adopt our product, it is necessary to carry out both powder and solution development," explains Nagai. He collaborates closely with Harada, who is in charge of powder development, to

pursue the designs that customers require. In the course of producing acetylene black with high battery performance, Harada expresses his profound trust in Nagai: "Nagai's data, backed by his extensive knowledge of batteries, is very convincing."

Nagai is enthusiastic about their goal of making Denka's acetylene black the de facto standard in the secondary battery conductive material market. Through the development of new products, they are aiming to achieve Mission 2030 by having all customers recognize Denka's business value. Looking ahead, there are plans to apply these advancements to next-generation batteries, such as all-solid-state batteries, for further business expansion. Harada emphasizes, "We want to accumulate technology without clinging to conventional methods." The fate of acetylene black lies in the hands of these two specialists.

Specialist

Yusaku Harada (left)
Manager, Technical Section
Production Dept. No. 4, Chiba Plant

Joined the company in 2003. He has been involved in the development of acetylene black since 2011. As a specialist in powder development, he conducts synthesis research and explores productivity improvements.

Tatsuya Nagai (right)
Group Leader
Battery & Conductive Materials
Development Dept., Chiba Plant

Joined the company as a mid-career hire in 2012. Since transferring to his current department in 2017, he has been working evaluation and solution development of new acetylene black developed by the Technical Section.

Introduction of New Executive Officers

As of April 1, three new individuals were appointed as executive officers. In this section, we will introduce you to them and their aspirations.

[Questions]

- 1 Hobbies
- 2 Skills/Strengths
- 3 Favorite foods and drinks
- 4 Memories at Denka
- 5 Challenges at work
- 6 Memorable photos



History
 April 1993 Joined Denka (Research and Development Department, Omuta Plant)
 August 2017 General Manager, Production Engineering Department, Omuta Plant
 October 2020 General Manager, Engineering Department, Gosen Site
 April 2021 General Manager, Production Engineering Department, Gosen Site
 April 2023 Assistant Manager, Omuta Plant

Aspirations as Executive Officer

The Omuta Plant has been developed as a specialty product manufacturing plant, with its main products being electronic materials and advanced functional materials. These products directly contribute to xEVs, 5G, and information terminal devices, supporting enriched and comfortable lifestyles and contributing to social megatrends and a sustainable global environment. Although these products are expected to experience significant growth, they also require high quality standards in the face of rapid change and intense competition. In order to further develop our plant and achieve "Mission 2030," it is essential to enhance the competitiveness of each product, quickly achieve results in newly developed products, and create new products and materials. We will continue on our growth path while striving to create a plant filled with smiles and vigor, with safety as our top priority.

- 1 Watching sports, especially baseball. I also have experience as the captain of the Omuta Plant baseball team.
- 2 I value the ability to carefully listen to everyone's voice. I believe that attentive listening is the key to unlocking the power of our team.
- 3 Motsunabe (offal hotpot), mentaiko (pollock roe), horse sashimi, etc. Since I have spent most of my life in Kyushu, I have a special attachment to Kyushu's local cuisine.
- 4 Some of my most memorable moments are from when I was first assigned to the Omuta Plant. Four of us who joined the company at the time became close, sometimes drinking until dawn to vent our frustrations.
- 5 The first project I was assigned to was the development of conductive DPFs. Although we were not able to commercialize the product, I learned a lot from our failure.



Mr. Nishimura is in the first row, second from the right.

6 A photo taken of the Development and Research Department at the Omuta Plant in 1997. While I struggled through each day, looking back now, I remember that those days were also filled with joy.



History
 April 1993 Joined Denka (belongs to the Research Institute)
 April 2014 General Manager of New Business Planning Department
 April 2015 General Manager of Global Innovation Department, New Business Development Department
 April 2017 Representative of Denka-KEW Genomics LLC
 September 2023 Deputy Manager, Life Innovation

Aspirations as Executive Officer

The Life Innovation Business is expected to make significant contributions to both society and the Denka Group through the existing Vaccine and Diagnostics Business and new businesses, including G47Δ. However, given the drastic changes in the business environment, this doesn't mean that future profits are guaranteed. New businesses also face various difficulties in achieving success. To put these businesses on a growth track, everyone involved must share a sense of crisis and urgency. In addition, as a company that values people's lives, we must breathe life into each and every job. To achieve this, we will create a system that allows each of us to demonstrate our specialties with confidence.

- 1 Running. Discovering a scenic course and running on it feels exceptional.
- 2 Since I had to deal with time differences while working with US companies, I have been an early riser for about 10 years and have been involved in some morning activities.
- 3 Influenced in part by my parents, who loved the mountains, I developed a fondness for wild vegetables, and my favorite is tempura made from koshi-abura (fatsia shoots). They will be ready for harvest soon.
- 4 I built networks with various experts in a wide range of fields such as ceramics, polymers, semiconductor materials, and battery materials by engaging in cutting-edge research in these areas.
- 5 As mentioned above, whenever I am assigned to a field outside my area of expertise, I start learning from scratch. With the help of those around me, I manage to appear like an expert.



Mr. Inada is third from the left.

6 A photo taken under a cherry tree with colleagues when I was dispatched as a special researcher to the National Institute for Materials Science (NIMS) in Tsukuba City for a national project on all-solid-state batteries, the next generation of lithium-ion batteries.



History
 April 1992 Joined Denka (Labor Section, General Affairs Department, Omi Plant)
 April 2008 Manager of General Affairs and Personnel Section, Administrative Department, Omi Plant
 October 2014 Section Manager, HR Department
 April 2017 Assistant Manager, HR Department
 April 2020 Deputy General Manager, HR Department
 April 2023 General Manager, HR Department

Aspirations as Executive Officer

The Administrative Department, Legal Department, Secretary Department, and Internal Control Department are strengthening various initiatives to increase corporate value by improving corporate governance to achieve "Mission 2030." In September 2023, the former Risk Management Committee was renamed the Denka Group Risk Management Committee. The Committee began ongoing risk management activities throughout the Denka Group through Enterprise Risk Management (ERM) activities, which replace traditional individual risk management. We will bring these ERM activities into full swing from FY2024. In addition, as harassment issues that undermine employees' psychological safety persist, we will continue to promote a corporate culture that places compliance as a top priority.

- 1 Cultivating and appreciating houseplants. I feel at ease when looking at greenery.
- 2 Having worked in HR for many years, I am confident that I can match names with faces of employees.
- 3 Being from Osaka, I enjoy a variety of flour-based dishes such as takoyaki and okonomiyaki. As for drinks, I love beer, which goes perfectly with these dishes.
- 4 I have worked at the Omi Plant twice, for a total of more than 11 years. My colleagues, the plant staff, and the local community have been very kind to me.
- 5 I was able to push through a major reform of the human resources system, which had been untouched for a long time.



Mr. Adachi is in the lower right.

6 A scene from the farewell party for Mr. Nakano, the former Managing Executive Director who helped us promote a major reform of the human resources system.

12-3
Dec. Mar.

Pick Up
Dec.

Started technical study abroad at DLIR, our R&D base in Singapore —New challenges for Denka in technical and human capital exchanges—



Denka Life Innovation Research (DLIR) in Singapore



In 2017, Denka established Denka Life Innovation Research Private Limited (DLIR) in Singapore to promote the globalization of Denka's life innovation research & development system. Exchanges were previously suspended due to the COVID-19 pandemic, but Denka began technical and human capital exchanges through a study abroad program in Singapore from October 2023.


D DLIR has a prototype development team for small devices for medical diagnostics, which Denka does not have in its Japanese development system. That being said, their system and technology for developing diagnostic pharmaceuticals does not compare to Japan's. The current trend is an approach that raises sensitivity

and improves the user experience through in vitro diagnostics drug development that integrates the development of small devices and diagnostic pharmaceuticals. The continuation of the above technical exchange will help Denka to establish a system of mutually complementary technologies and is expected to reduce development time.

My experience with the study abroad program

Student  **Shuhei Aoyama**
Diagnostics Research Department
(Machida City)
Life Innovation

When I heard about the technical study abroad program, I knew it would be a big opportunity to gain overseas research & development experience and immediately communicated my interest. I was in Singapore for roughly two and a half months from October 2023 and mainly studied CAD (computer-aided design), 3D printing, the assembly of electrical and optical components, programming, and more. Some of the technologies were unfamiliar to me, but I was able to proceed with an understanding of the processes thanks to Nicholas's careful and patient explanations using illustrations and examples. After much trial and error, I was finally able to complete a prototype with my own hands. I brought the prototype back to Japan and use it daily in my research & development work.

Trainer  **Nicholas Chan**
Team Leader
Device Development Team, DLIR

I believe that this technical exchange is the first step for DLIR to secure people proficient in device development technology for Denka and to build a collaborative system with the diagnostic pharmaceuticals development team. It is also the fastest and most optimal approach to contributing to achieving Mission 2030. For this reason, we prepared a program that would maximize results in the limited timeframe by clearly defining final goals and subdividing them into milestones. As exemplified by other joint projects with the New Business Exploration Department being introduced, technical and human capital exchanges with Denka will continue to be a pillar of our future activities.



Yoshiyuki Yamada
R&D General Manager, DLIR

Singapore has the world's shortest timeframe for the social implementation and trial introduction of new technologies and is conducting advanced bio research through public-private partnerships. Furthermore, it is as safe as Japan, so Denka can send its young workers here to gain overseas experience with peace of mind. The research center has spacious offices and laboratories, as well as network facilities for connecting with Japan. Going forward, I hope DLIR can not only support technical exchanges but also serve as an activity base in Southeast Asian business development, promote the use of and visits to facilities for human capital exchanges, and more.

My completed prototype! 

 I also enjoyed local Singaporean cuisine!

Jan.

Donated 10 million yen to victims of 2024 Noto Peninsula Earthquake

Denka donated 10 million yen to victims of the Noto Peninsula Earthquake through the Japanese Red Cross Society and other organizations. Denka also supplied 6,520 antigen test kits that Denka manufactured to Ishikawa Prefecture through the Japanese Promotion Council for Laboratory Testing's Large-Scale Disaster Response Committee and the Japan Association of Clinical Reagents Industries.

Jan.

Invested in a startup to commercialize wearable biosensors that measure physical data through sweat

Denka invested in Epicore Biosystems Inc., a startup that is developing high-level wearable IoT biosensors, through the CVC fund Denka jointly operates with Pegasus Tech Ventures. This is the first investment Denka has made through the CVC fund. The investment will promote collaboration, such as in supporting the expansion of Epicore Biosystem's products into the Asian market, codeveloping new products for medical use, and more.

Feb.

Renewed uniform-partner contract with ALBIREX NIIGATA

It has been decided to renew Denka's uniform-partner contract with ALBIREX NIIGATA for the 2024 season (February 1, 2024–January 31, 2025). The Denka Group states in the Denka Group Social Contribution Policies that Denka will advance health and well-being, promote sports, and contribute to local communities. In Niigata Prefecture, Denka has Omi Plant and Gosen Site, two important manufacturing locations, and has built strong relations with the prefecture for over 100 years. Denka aims to further liven up Niigata Prefecture in the future.



©ALBIREX NIIGATA

Feb.

Held idea contest for new business creation: Denka Innovation Day

As part of the management plan "Mission 2030," which started in April 2023, Denka held Denka Innovation Day, an idea contest for new businesses for employees. The six winners of the primary and secondary screenings gave presentations for the final screening in front of an audience of approximately 500 individuals, both in person and online, on February 15. The winner will receive a prize and Denka will commit to considering the commercialization of their idea in the future.



Feb.

3Q Financial Results Briefing Held

The 3Q Financial Results Briefing was held in the form of a telephone conference on February 7. The briefing was attended by 90 people, including institutional investors, analysts, and financial institutions. President Imai addressed the styrene-based resin quality issues and the cause analysis and recurrence prevention measures for the accident at Omi Plant from various aspects and stressed that he would take responsibility for handling them. The full-year operating income forecast was reduced to 11 billion yen (down 21.3 billion yen from last year). As an improvement measure, Denka will enhance its business value creation, including short-term, concentrated measures with clearly defined timeframes and amounts. President Imai explained that the company aims to return profit levels to a growth trajectory from the second half of FY2024.



Feb.

Received A- in climate change and B in water security from CDP for 2023

Continuing from last year, Denka received an A- in climate change and a B in water security in 2023 from CDP, which provides an environmental information disclosure system. Going forward, Denka will work to improve more in-depth environmental aspects while continuing to disclose environmental information appropriately.



Mar.

Renewed official sponsor contract with Fukuoka SoftBank HAWKS

It has been decided to renew Denka's sponsor contract with the Fukuoka SoftBank HAWKS for the 2024 season (March 1, 2024–February 28, 2025) for a second term. A billboard advertisement for Denka will continue to be displayed at the HAWKS' home stadium, FUJUKOJA PayPay Dome, and the home stadium of the HAWKS' second team, Tama Home Stadium Chikugo. Denka has had a strong relationship with the local region, including the existence of Omuta Plant, and will continue to focus on contributing to the community and locally-based sponsorships.

