



The importance of ESG and sustainability in M&A



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1.Introduction

In recent years, sustainability has been attracting attention as an important management agenda. Behind this trend is a strong need for companies to address social and environmental challenges for building a sustainable society while also considering the interests of all stakeholders. This is evidenced by the spread of ESG (environmental, social and governance) investment and the SDGs (Sustainable Development Goals).

The Principles for Responsible Investment (PRI), advocated by the United Nations in 2006, include commitments to incorporate ESG issues (in addition to traditional financial information) into investment processes. Since Japan's Government Pension Investment Fund (GPIF) signed the PRI in 2015, ESG investment has grown in Japan, similar to the growth in other signatory countries. Investors and financial institutions have rapidly begun incorporating ESG perspectives into their investment processes; negative screening is widely used to exclude companies that do not meet ESG criteria. Some financial institutions have even stopped providing funds to businesses that have been associated with negative environmental impact. Today, companies may suffer business losses unless they properly respond or disclose information with regards to ESG.

The SDGs, which were adopted at the 2015 UN General Assembly, comprise 17 goals and 169 specific targets to be achieved by 2030. One of the characteristics of the SDGs is that private companies are required to get actively involved as actors who solve the related problems. In 2020, the UN began encouraging countries to accelerate their initiatives by calling for a Decade of Action to deliver the SDGs by 2030.

Climate change is one of the most important social and environmental issues highlighted by ESG and the SDGs. A global shift toward a decarbonisation is underway. In many countries, the climate change countermeasures set forth by the Paris Agreement were only implemented beginning 2020, driving both governments and companies to aim for net zero greenhouse gas (GHG) emissions by 2050. Some industries—especially the automobile industry, facing stricter environmental regulations—a need to change their business structure to address social and environmental challenges.

As shown by the materialisation of climate change and other environmental risks, the linear model of consumption based on mass production and mass disposal, which previously contributed to economic growth and prosperity, has reached the end of its effectiveness. In its place, circular economy—an economy in which the production and consumption of corporate products follows a cyclical model

—is drawing attention as a possible alternative. In a circular economy, full use is made of resources through recycling, reuse, and sharing. This minimises both waste and the extraction of new resources. Because this helps reduce waste and address climate change, some companies are pursuing this idea as a new business opportunity.

With these changes in social background and demand, corporate social and environmental efforts have evolved into a critical component of corporate activities and more like a core business strategy. It is no longer sufficient to passively comply with guidelines on ESG or the SDGs. Companies need to ask themselves essential questions about the very purpose of their business, such as the role they play in maintaining and improving society and the environment, and what social value they create through what businesses. They also need to explore integrated thinking when raising and using important capital, by taking a proactive, consistent and long-term view covering the span from strategy to execution.

Some sustainability-sensitive companies have already set goals or formulated strategies based on the ESG and SDGs and have begun implementing related M&A deals. In order to improve their responses to social and environmental challenges and to help build a sustainable society, these companies need to accelerate their inorganic business transformations and obtain new capabilities. M&A is one effective way to achieve these goals. Previous M&A deals often focused on and considered the business domains of individual candidate companies. Going forward, more broader perspectives will be necessary.

Our research has confirmed that the number of M&A transactions related to climate change countermeasures and circular economy, which are especially important topics among sustainability issues, has rapidly increased in recent years in Japan. We will discuss in detail climate change countermeasures in Chapter 2, 'Climate change countermeasures and M&A', and circular economy in Chapter 3, 'Circular economy and M&A'. The final chapter (Chapter 4) describes companies that have used M&A to strengthen their sustainability and discusses the positive impact on corporate value of balancing sustainability and strategy.

Research methods used for this report

Using the RECOFDATA Corporation's M&A database, we conducted text mining analysis on about 18,000 M&A deals involving Japanese companies (including Japanese branches of foreign companies) that were announced during the five years period from 1 December 2015 to 30 November 2020.

We applied natural language processing techniques, including morphological analysis, to text data of M&A deal summaries extracted from the RECOF M&A database and analysed trends in words and key phrases. In natural language processing, we used sustainability-related terms reflecting the insights of PwC professionals. Some sentences may have been analysed in an unnatural format depending on sentence data types, paragraphing methods, and terms used in morphological analysis. We did not perform additional processing for these irregularities because their impact on this research was minor.

We followed the method used in the RECOF M&A database to classify business types and M&A types. M&As between domestic companies are classified as 'in-in', M&As of foreign companies by domestic companies are classified as 'in-out', and M&As of domestic companies by foreign companies are classified as 'out-in'.





2. Climate change countermeasures and M&A

Climate change countermeasures are urgently needed in Japan

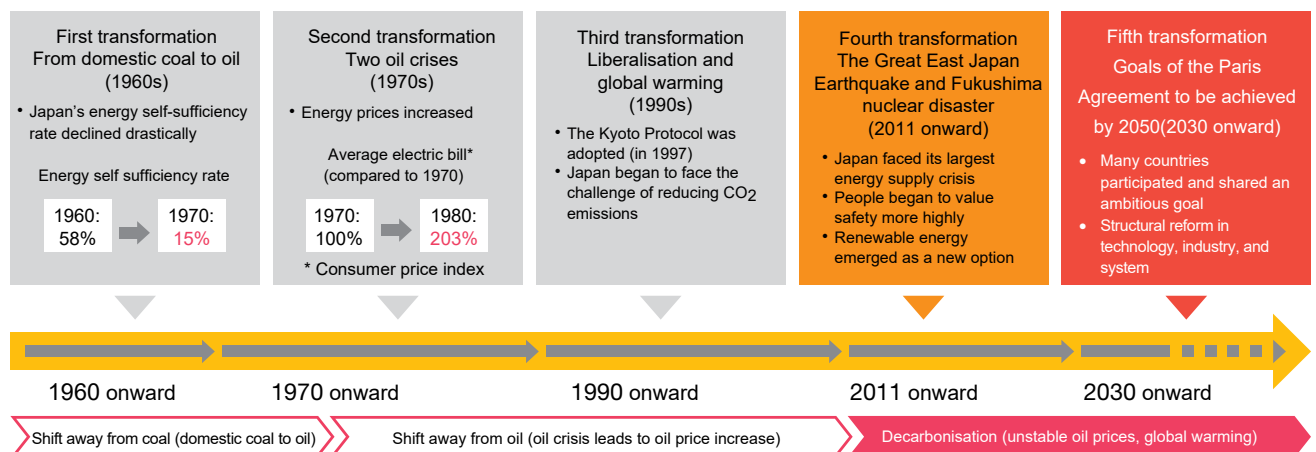
The threat of extreme weather and disasters caused by global warming makes climate change one of the greatest challenges facing the world. As mentioned in the introduction, many of the measures set forth by the Paris Agreement started in full swing from 2020. A global shift toward a decarbonised society is now underway. The Paris Agreement aims to limit the temperature increase to 1.5°C above pre-industrial levels, which translates to the long-term goal of achieving global net zero GHG emissions by 2050.

Many countries and companies have begun formulating strategies and roadmaps to achieve this long-term goal. In 2020, the EU raised its GHG reduction target from a 40% reduction to a 55% reduction in 2030 compared to its 1990 benchmark. Although the Trump administration announced that the US would withdraw from the Paris Agreement, President Biden, who took office in January 2021, immediately signed an executive order to rejoin the Paris Agreement, showing a renewed commitment to decarbonisation.

Japan's Prime Minister Suga also announced in his policy speech in October 2020 that Japan will reduce its net GHG emissions to zero by 2050. In December 2020, the Ministry of Economy, Trade and Industry (METI) unveiled the Green Growth Strategy to Support Japan's 2050 Carbon Neutral Goal, which provides a strategy and roadmap for realising a green society. Keidanren (the Japan Business Federation) and major Japanese companies have also begun preparing their own roadmaps toward net zero emissions, helping to bring about the next phase of Japan's climate change countermeasures.

Historically, Japan has experienced several major energy transformations, including the introduction of liquefied natural gas (LNG) and the development of clean coal technology to shift away from its dependence on oil (in the 1970s onward) and the promotion of energy saving to reduce CO₂ emissions (in the 1990s onward). As many countries aim to achieve net zero by 2050, the Japanese government is also changing its energy policy to achieve the same effect. (See Figure 1.) This is the fifth major historical transformation of Japan's energy policy.

Figure 1: The five major historical transformations in Japan's energy policy



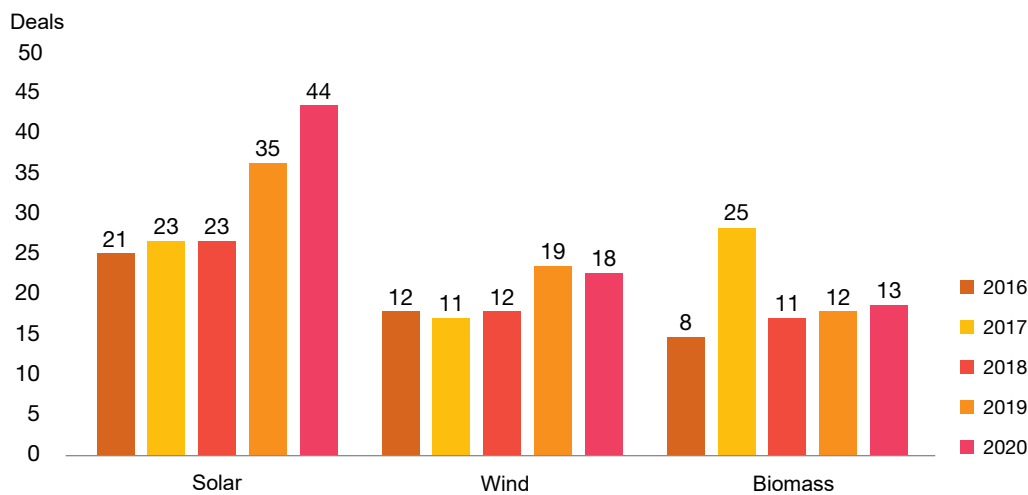
Source: Ministry of Economy, Trade and Industry, "Japan's Energy 2019: 10 questions for understanding the current energy situation." https://www.enecho.meti.go.jp/en/category/brochures/pdf/japan_energy_2019.pdf

Solar power has been Japan's leading renewable energy source

To date, the main pillar of Japan's climate change countermeasures has been the decarbonisation of the electricity sector by introducing renewable energy. Renewable energy has become an especially important topic in the field of M&A since 2012, when the Japanese government took the major step of introducing the feed-in tariff (FIT) scheme to purchase renewable energy at fixed prices.

In our research, based on the assumption that M&A deals related to climate change countermeasures have increased in recent years, we used the RECOF M&A database to examine M&A deals that took place during the five year period from 2016 to 2020. Out of all of the deals that took place in those years, we identified the ones that contained the keywords 'solar', 'wind' or 'biomass'—all of which are major renewable energy sources. As shown in Figure 2, our results showed that renewable energy-related deals have increased overall and that there have been more solar deals than wind or biomass deals.

Figure 2: Renewable energy-related M&A deals from 2016 to 2020, by energy source

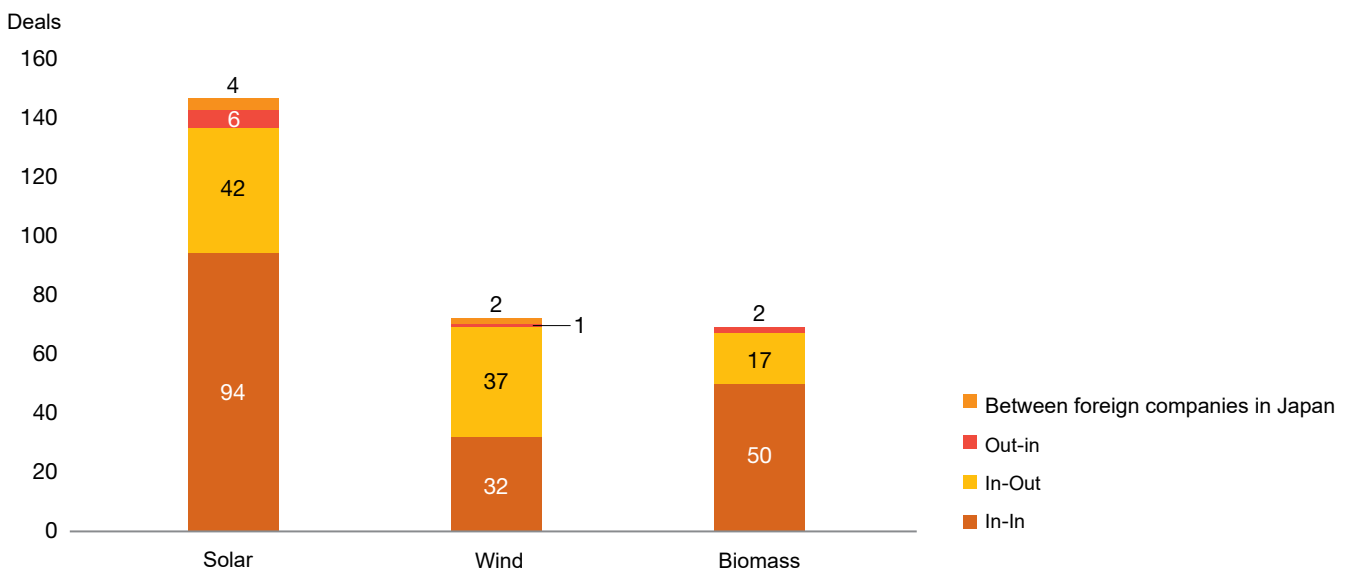


Source: RECOF M&A database, PwC

Domestic renewable energy development has been led by solar projects, which are relatively easier to accomplish. M&A has been centered around in-in deals (deals between Japanese companies). In the wind power field, in response to the expansion of the offshore wind power market in Europe,

many Japanese companies invested in overseas wind power projects, resulting in more in-out deals than in-in deals. In all fields (solar, wind and biomass), there were few instances of M&As of Japanese companies by foreign companies (out-in) or M&As between foreign companies in Japan.

Figure 3: Renewable energy-related M&A deals from 2016 to 2020—cross-border structure

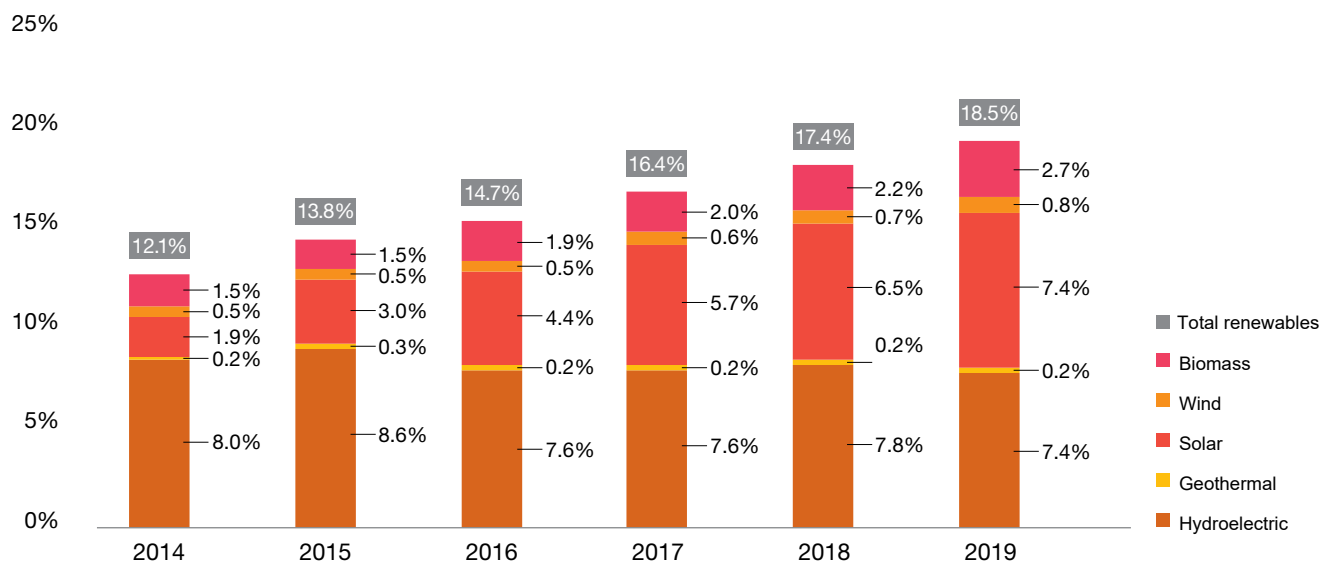


Source: RECOF M&A database, PwC

Next, let's look at changes in Japan's power mix. Renewable energy accounted for 18.5% of Japan's total power generation in 2019, compared with 12.1% in 2014. Solar power has become a significant contributor, growing from 1.9% in 2014 to 7.4% in 2019. This is equal to hydroelectric power (7.4% in 2019), which has traditionally been a leading renewable energy source. The reason for the growth of solar power in Japan may be that, compared with wind and biomass power,

it can be developed on a smaller scale with a lower entry barrier, and technological innovation and volume efficiency have helped to reduce introductory costs. Although less remarkable than solar, biomass (2.7%) and wind (0.8%) also grew by approximately 20% and 10%, respectively, contributing slightly to the expansion of renewables.

Figure 4: Composition of renewables (including hydroelectric) in Japan



Source: Adapted by PwC from "Electric Power Survey Statistics," Agency for Natural Resources and Energy, METI. https://www.enecho.meti.go.jp/statistics/electric_power/ep002/

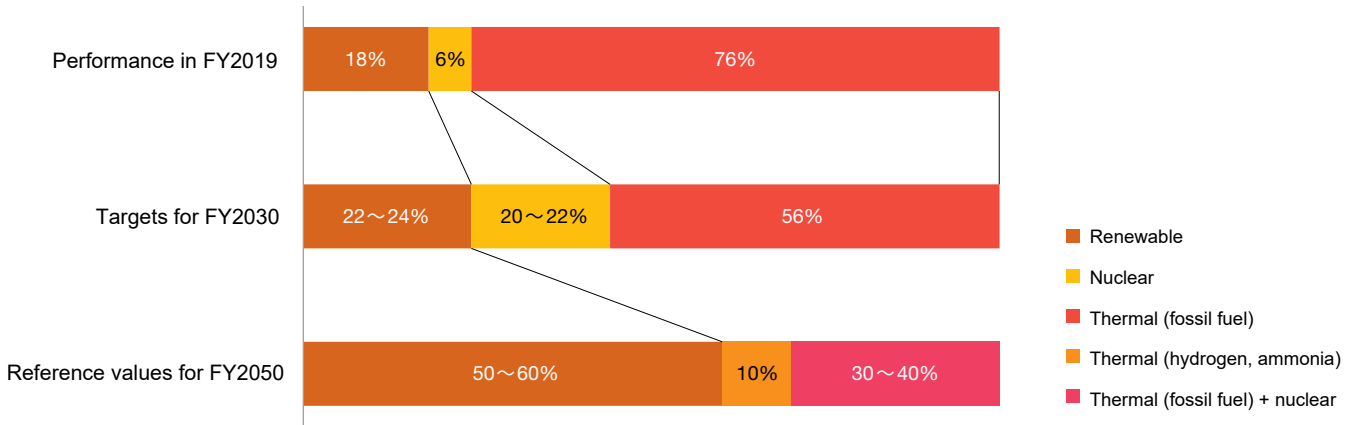
Making renewables Japan's main power source through M&A

After publishing a report, entitled 'Power Market Deals', on trends in international M&A deals in the electric energy sector, the PwC global network released its first dedicated report on renewable energy-related M&A in 2008, titled 'Renewable Deals'. In the global M&A market, hydroelectric power had long been ranked No. 1 in renewable energy deals in terms of volume, but onshore wind, solar, and biomass power began to gain momentum in the 2000s and finally exceeded hydroelectric in the 2010s.

In Japan, on the other hand, before the Suga administration declared the 2050 net zero goal, renewable energy introduction target for 2030 was just around 22% to 24%, lower than the current European levels. To achieve net zero by 2050, the Japanese government is working on new targets which are scheduled to be announced in fall 2021. A renewable energy composition of 50% to 60% in 2050 is reportedly being discussed as a reference value (see Figure 5).

Europe is a driving force in the expansion of the global renewable energy market. In many European countries, renewables already account for more than 30% of annual power generation. Germany, a frontrunner in climate change countermeasures, generated more than 40% of electricity from renewables in 2019, as part of its efforts to reach net zero by 2050.

Figure 5: Japan's power source composition (Actual performance, targets and reference values for discussion)



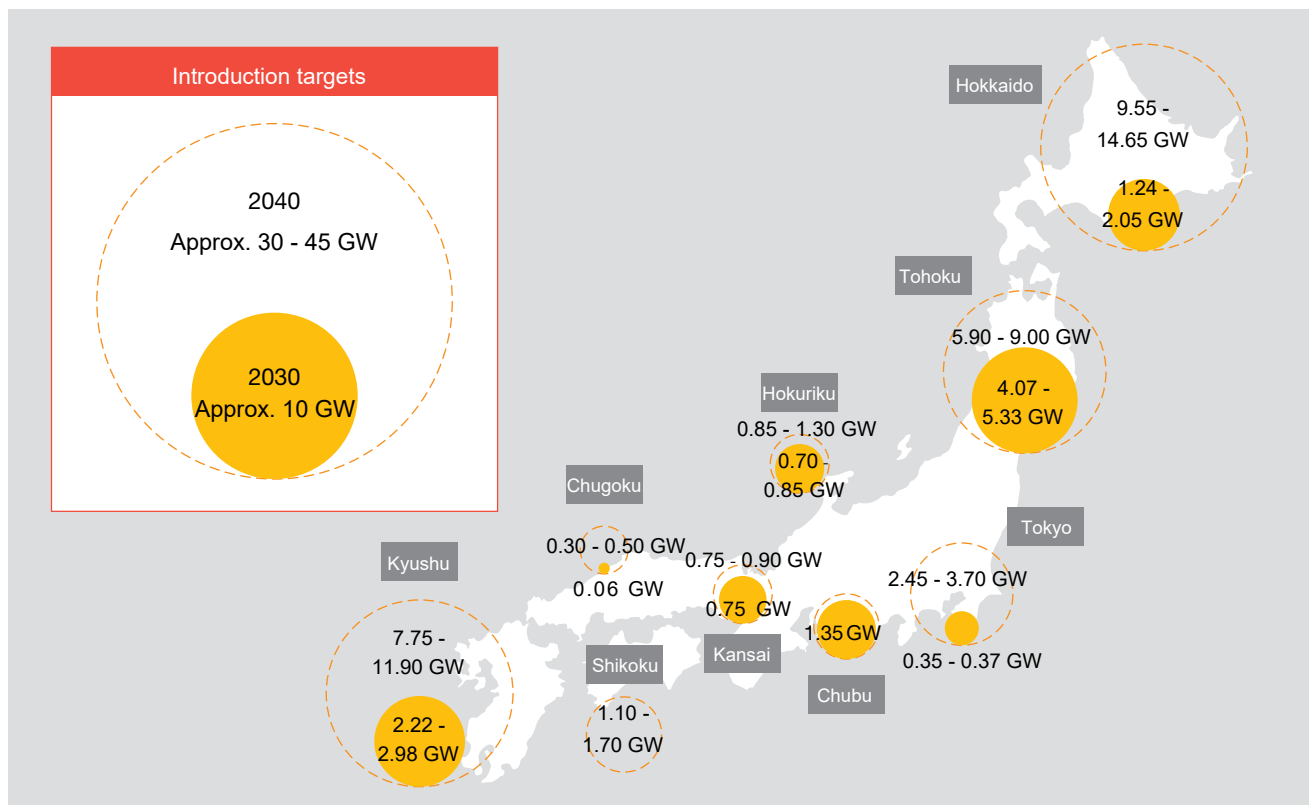
Source: Prepared by PwC based on materials from the Strategic Policy Committee of the Advisory Committee for Natural Resources and Energy, METI.

Concerning Japan's efforts to make renewable energy a major power source, we expect offshore wind power to be a major contributor. In Europe, driven by the creation of investments and supply chains as well as reduced costs associated with technological advances, offshore wind power has been widely used since the 1990s and is now the largest renewable energy source.

Offshore wind power also presents great potential for Japan as a country surrounded by the sea. The lack of

universal rules or frameworks was previously a hurdle to the widespread adoption of offshore wind power. However, the Act on Promoting the Utilization of Sea Areas for the Development of Marine Renewable Energy Power Generation Facilities took force in 2019, and the 'Vision for Offshore Wind Power Industry' was published by METI's Public-Private Council on Enhancement of Industrial Competitiveness for Offshore Wind Power in 2020. The process of expanding the introduction of offshore wind power is now making steady progress. (See Figure 6.)

Figure 6: Offshore wind power introduction targets from METI's 'Vision for Offshore Wind Power Industry' (1st edition)



Source: Adapted by PwC from '[Ref.] Introduction image by area', from page 7 of 'Vision for Offshore Wind Power Industry' (1st edition). https://www.meti.go.jp/shingikai/energy_environment/yojo_furyoku/pdf/002_02_e01_01.pdf

Increase in private investment is necessary to make renewable energy, including offshore wind power, a major power source. However, high-efficiency power generation facilities require a large amount of initial investment; high risk level presents difficulty for developers to raise capital. On the other hand, power generation projects can be expected to generate relatively stable cash flows once construction is complete and operation begins.

In Europe, following the concept of capital recycling, developers generally sell equities to new institutional investors when projects enter a stable phase. This enables developers to earn returns commensurate with risks and recover investment early. In addition, they can even invest those proceeds in other projects, resulting in cyclical business expansion. Institutional investors also gain benefits: more alternative investments that can be expected to generate stable long-term yields.

The accelerated expansion of renewable energy and the establishment of offshore wind market in Japan resemble the European path. Going forward, the Japanese domestic market is expected to continue following the same route as the European market. In Japan, as well as in Europe, widespread use of an M&A-driven capital recycling mechanism will be key when it comes to attracting more private investments in renewable energy deals.

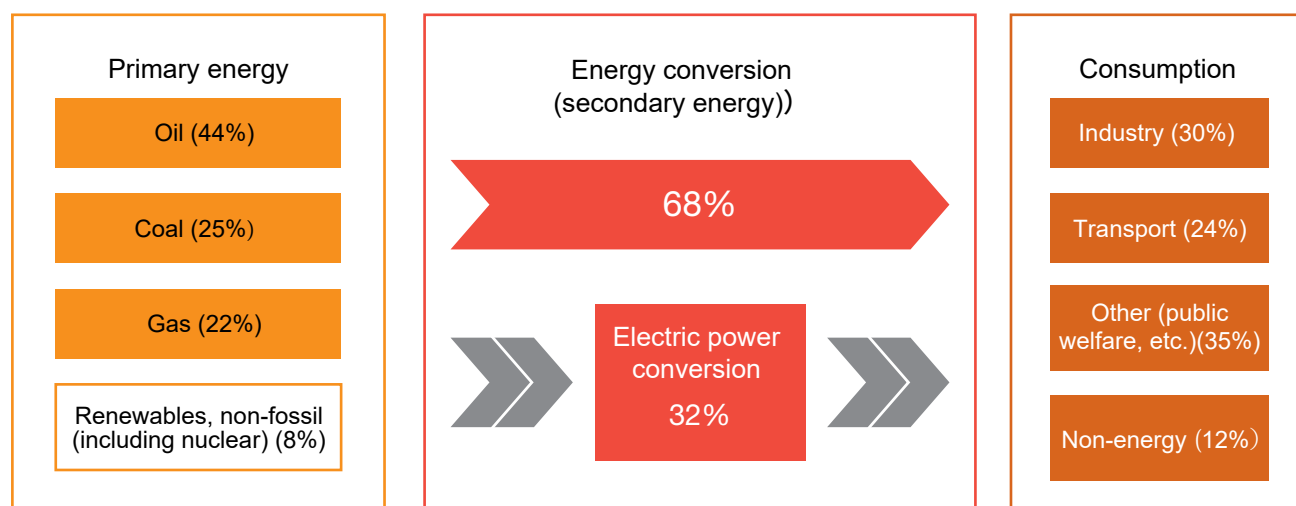
The offshore wind power market is expected to grow not only in Japan, but also in other Asian countries and regions such as China, Taiwan and South Korea. Moreover, in-out deals will likely increase where Japanese companies acquire European companies to incorporate their advanced insight, experience and technology regarding development, construction and O&M (operation and maintenance). Out-in deals will also increase where European companies invest in the Asian market, including Japan.

Innovation in decarbonisation technologies is necessary to achieve net zero

As shown in Figure 7, achieving net zero throughout the Japanese economy will require not only the increased introduction of renewables in the electric power sector, but also technology-based decarbonisation initiatives by energy consumers such as the industry and transport sectors.

Generally speaking, the industry and transport sectors have been using fossil fuel as their main energy source, and have focused on increasing fossil fuel efficiency as their main climate change countermeasure. But increasing efficiency alone is not enough to achieve net zero by 2050. Through technological innovation, these sectors need to implement a drastic transformation to alternative fuel sources.

Figure 7: Overview of Japan's energy balance flow



Source: Analysed by PwC based on 'Comprehensive Energy Statistics,' Agency for Natural Resources and Energy, METI. https://www.enecho.meti.go.jp/statistics/total_energy/

'Green hydrogen' (hydrogen produced by using renewable energy) will be an important key to realising the shift from fossil fuels to green energy sources. The ability to produce this green hydrogen and to build hydrogen value chains is essential. We also need to establish other innovative technologies, including power storage and CCUS (carbon capture, use and storage).

To bring about these innovative technologies by 2050, it will not be enough to simply continue following existing roadmaps; non-linear progress is essential. Collaborative efforts among the public, private and academic sectors, as well as the creation and growth of start-up companies will be more crucial than ever. This will lead to an increase in related M&A deals.

There have not been many M&A deals focusing on decarbonisation technology, but some Japanese companies like Mitsubishi Heavy Industries (MHI) have begun to use M&A to speed up their efforts related to green hydrogen.

To continue to play an essential role in society and to realise sustainable growth, MHI recognises that helping to solve energy supply and climate change issues is especially important. With this in mind, they have incorporated the 'balancing [of] economic development and [reduction of] environmental impact of economic activity' into their core policy, and are developing their business with the goal of realising a decarbonised society. Beginning in 2020, MHI has announced a series of M&A deals focusing on green hydrogen technology, which is in line with its efforts to enhance business toward decarbonisation.

- In October 2020, MHI announced its investment in HydrogenPro of Norway, a manufacturer of electrolysers—devices that produce hydrogen through water electrolysis. By building a strategic partnership with a company that holds the rights to electrolyser technology, which is critical for achieving a decarbonised society, MHI intends to explore technological innovation, manufacture and supply green hydrogen, thereby spreading the use of power generation systems that use green hydrogen.
- In November 2020, MHI announced its investment in H2U Investments of Australia, a holding company of Hydrogen Utility (H2U) which produces green hydrogen and ammonia. Through this investment, MHI aims to participate in H2U projects for constructing green hydrogen and ammonia plants and demonstrating hydrogen gas turbine technology in the Eyre Peninsula in South Australia.
- In February 2021, MHI announced its investment in C-Zero, a venture from UC Santa Barbara that is known for its advanced methane pyrolysis technology. C-Zero uses innovative thermal catalyst methods to produce hydrogen (H₂) and solid carbon (C) from the methane (CH₄) contained in natural gas. This makes it possible to produce turquoise hydrogen, which does not emit CO₂ in its production process.





3. Circular economy and M&A

Circular economy as a key to solving sustainability challenges

Next, let us look at Japan’s M&A market from the perspective of the circular economy, a concept which has recently attracted attention as one of the keys to solving sustainability challenges, including climate change.

In Japan, the concept of ‘reuse economy’ has traditionally found widespread support. This concept emphasises the three Rs: reduce, reuse, and recycle.

Circular economy is an evolution of that concept—a sustainable resource-circulation model with no waste or associated environmental burden. Under the circular economy model, manufacturers

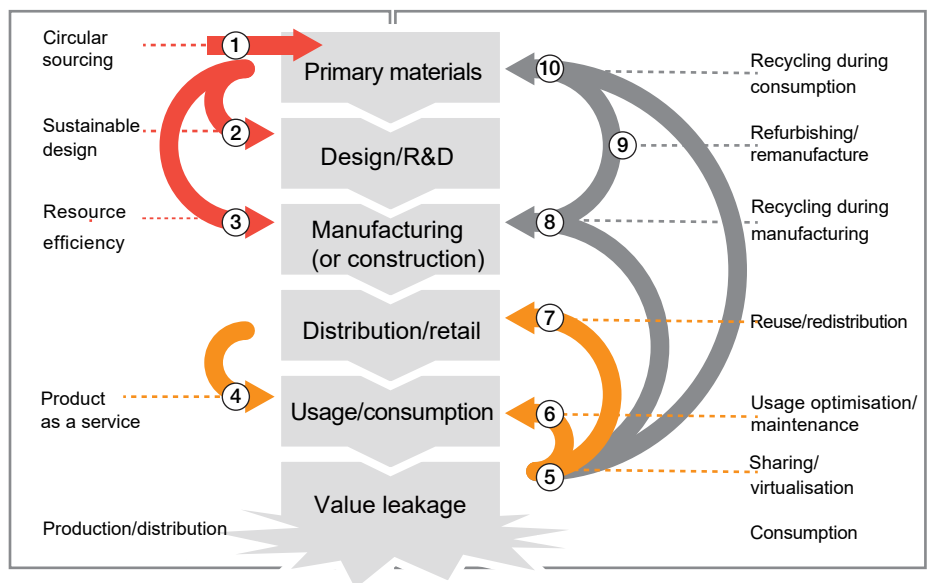
assume from the early stages of the manufacturing process, such as resource procurement or product design, that resources will be reused or recovered. During the use of the product, companies and individuals are encouraged to make full use of the resources throughout the product’s entire life cycle by considering, for example, whether a product can be used more efficiently through a sharing model, or whether the product or any of its parts might be usable for other purposes after the original use is complete. In this way, the circular economy model leads to the creation of new business models.

Figure 8: The concept of a circular economy

Three basic principles



Ten circular strategies



Source: “The road to circularity: Why a circular economy is becoming the new normal,” PwC, 2020.

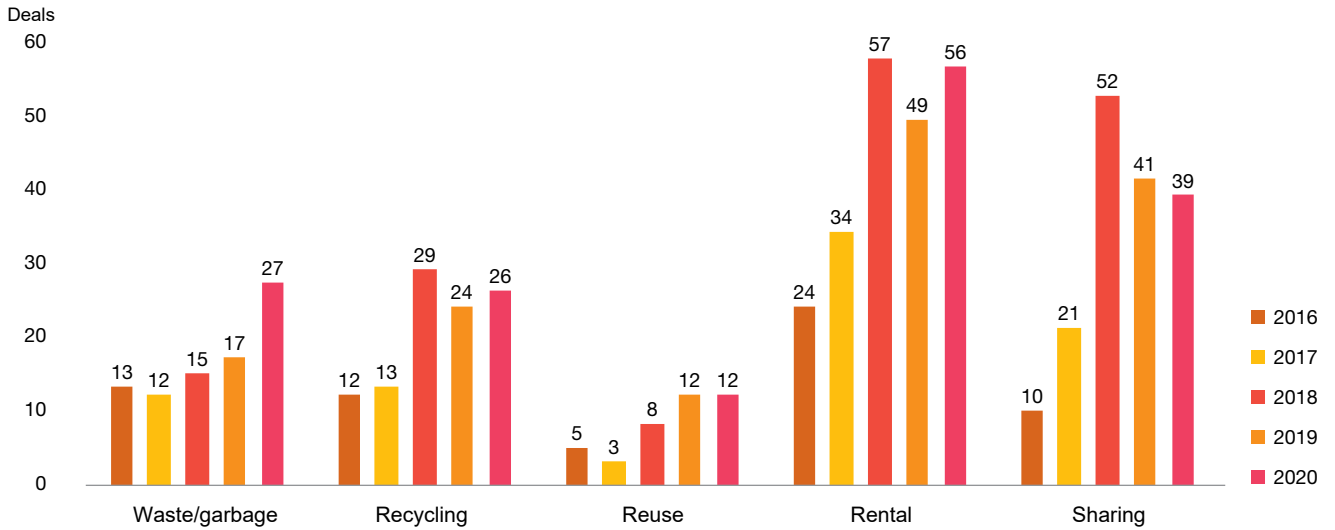
Promoting a circular economy will lead to a reduction in GHG emissions related to the manufacturing of products and the burning of waste. This makes realising circular economy an important key to solving climate change issues. Especially in hard-to-abate sectors (sectors reduction of emissions from production process is difficult) such as steel, aluminium, cement and plastics, pursuing

resource circulation in the overall value chain is necessary to achieve the goal of net zero emissions. Promoting a circular economy can also help companies grow their business sustainability in the medium to long term and enhance their competitiveness. Seeing this as a new business opportunity, some companies are strengthening their initiatives through M&A.

In this research, based on the assumption that the number of M&A deals related to the circular economy has increased in recent years, we used the RECOF M&A database to examine M&A deals that took place during the five year period from 2016 to 2020. Out of all those deals, we identified the ones that contained the keywords 'waste' (or 'garbage'),

'recycling', 'reuse', 'rental', or 'sharing'. As shown in Figure 9, our results showed that these deals have shown a tendency to increase in recent years. (Note, however, that a single M&A deal may have been counted more than once if it contained multiple keywords.)

Figure 9: Circular economy-related M&A deals from 2016 to 2020

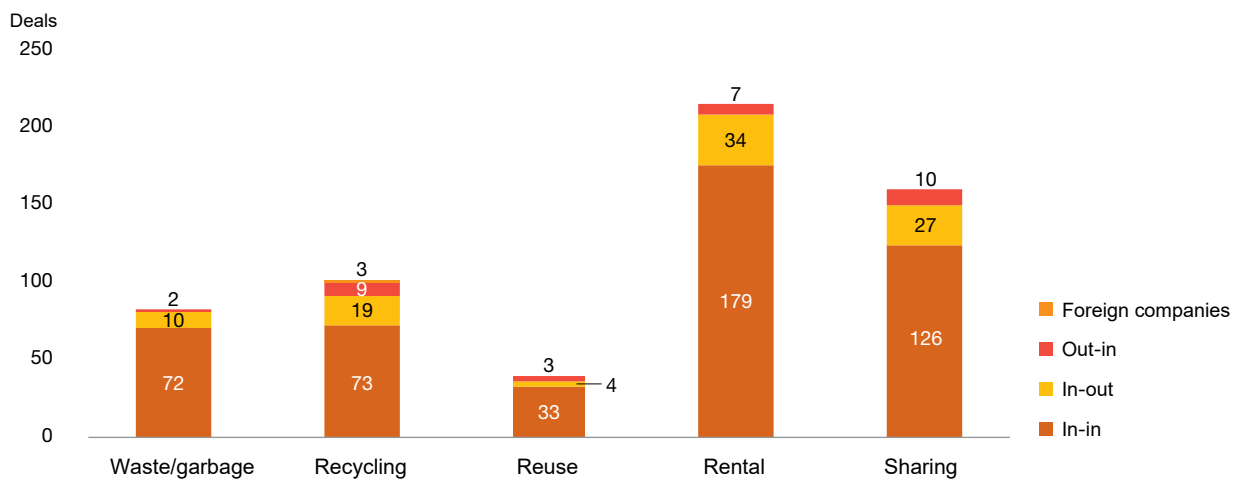


Source: RECOF M&A database, PwC

Most circular economy-related M&A deals were in-in deals (M&As between Japanese companies). This seems like a logical result, because circular economies typically encourage the circulation of local resources. Of the in-out deals (M&A of foreign companies by domestic companies)

containing they key words 'waste', 'garbage' and 'recycling', many were investments by Japanese companies in foreign companies with local operating base or unique technology Many in-out deals containing the keywords 'rental' and 'sharing' were investments in foreign start-up companies. (See Figure 10.)

Figure 10: Circular economy-related M&A deals from 2016 to 2020 (Cross-border structure)



Source: RECOF M&A database, PwC

Waste and garbage

The reduction of waste, garbage and the appropriate treatment of waste, including recycling, are important challenges for all resource-using companies that hope to help achieve a circular economy.

M&A deals related to waste and garbage have shown a tendency to increase over the past five years. Analysis by business type shows that in a majority of M&A deals in 2016, both the target company and buyer alike were service businesses, and most deals were between companies that provide waste disposal services. In recent years, however, while many deals still involve both target companies and buyers that are service businesses, various other business types have been increasingly involved in these M&A deals, including target companies in the software, information and electronics industries, and general trading firms and other financial businesses as buyers.

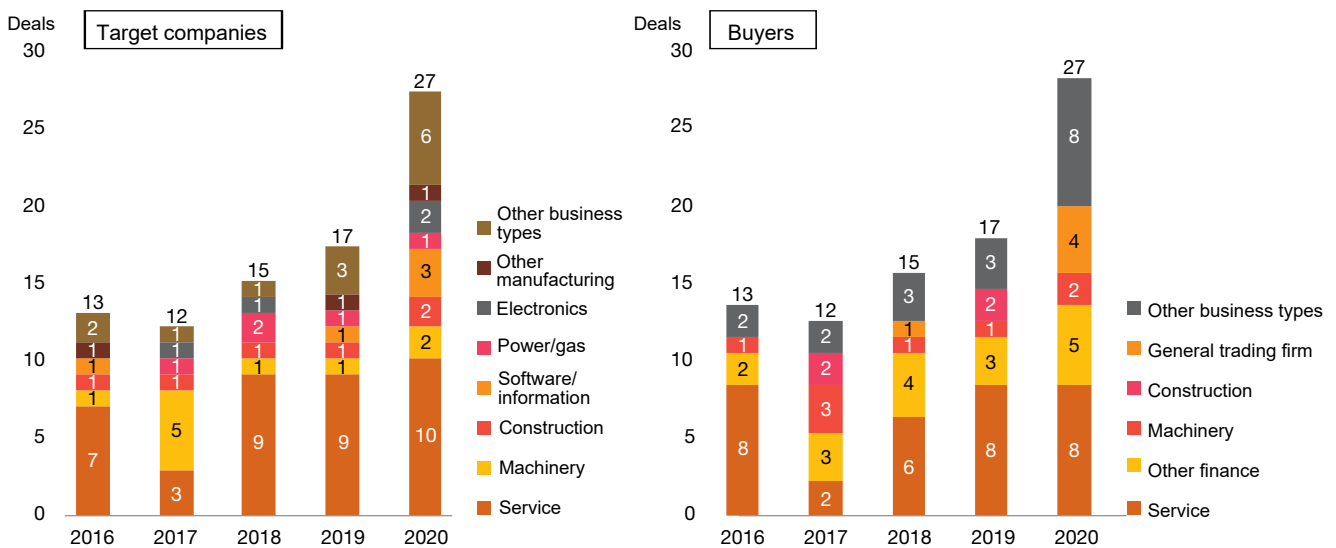
Industries that use resources to produce products are called arterial industries, while industries that recover, reuse and dispose of waste are called venous industries. Japan's venous industries are largely made up of small and medium-sized enterprises (SMEs), which are facing serious labour shortages as well as issues related to recycling technology, traceability, sophisticated logistics, etc., which need to be addressed. For this reason, we believe that M&A deals between companies of the same business type with a view to subsequent integration and restructuring will continue to increase. (See Figure 11.)

As the circular economy develops, companies will need to shift from a model of selling products to a resource circulation-oriented business model. Arterial and venous industries will need to cooperate to achieve this. Cooperation with venous industries is a missing part for arterial industry to complete a resource circulation loop. This means that M&A between companies in arterial industries and venous industries will become even more crucial in the future. In this regard, building data platforms and traceability systems using IoT are also important for linking the two industries.

One example of an M&A deal between an arterial industry and a venous industry is the capital and business alliance announced in 2020 between Mitsubishi Chemical and Refinverse, a company engaged in the recovery, treatment, and recycling of industrial waste. Through this alliance, Mitsubishi Chemical aims to promote the effective recycling and use of waste, deepen their understanding of how their products are ultimately disposed, and apply that understanding to environmentally-friendly material design.

M&A deals related to waste or garbage also frequently included the keywords 'iron', 'aluminium', 'plastics' and 'construction'. These correspond with the emission sources that are emphasised with regard to circular economy promotion.

Figure 11: Target companies (left) and buyers (right) in M&A deals related to waste and garbage



Source: RECOF M&A database, PwC

Recycling

Although the concept of recycling is widely known, it is not easy to regenerate a used product and transform it into another valuable product. In addition to accelerating the progress of recycling technology, it is also necessary to design recyclable products in the first place, taking into account their overall life cycle.

The number of M&A deals related to recycling has increased greatly since 2016. (See Figure 12.) Analysis by business type shows that in 2016, the largest number of both target companies and buyers were in the service

industry. Most of these deals were between waste disposal or recycling companies. In recent years, however, while many deals still involve service businesses as target companies and/or buyers, various other types of businesses have been increasingly involved in these M&A deals, including target companies in the chemical industry and buyers in the finance ('other finance') industry. These deals include investment of venture capital in start-ups that boast unique recycling technology.

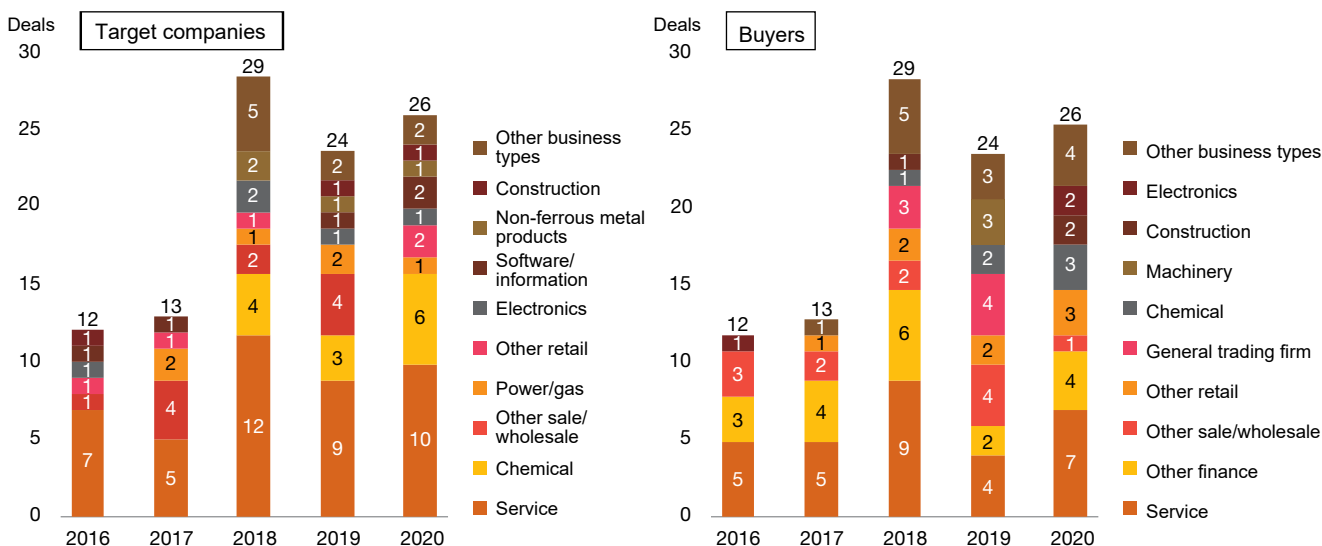
Like M&A deals related to waste and garbage, we should continue to see SMEs in venous industries engage in recycling-related M&A deals for integration and restructuring. We also believe that both cooperation between arterial industries and venous industries and investment in venous industries with technological strengths will increase as circular economy develops.

With regard to cooperation between arterial and venous industries, public attention is focused on the recycling of plastic waste, which is a particularly significant contributor to environmental pollution. There are roughly three ways to recycle plastics: material recycling whereby plastic waste is reused as raw materials for plastic products; chemical recycling whereby plastic waste is chemically broken down and reused as raw materials for chemical products; and thermal recycling whereby plastic waste burned to produce thermal energy. In Japan, while the recycling rate of plastic waste is said to be over 80%, thermal recycling, which is not considered recycling in many Western countries, accounts for the majority. Further progress is needed for material recycling and chemical recycling.

For these reasons, more and more Japanese companies have been acquiring chemical companies in order to incorporate their chemical recycling technologies and business infrastructures. In 2019, through its subsidiary in the UK, Sumitomo Chemical acquired the Emas Group of Turkey, which is engaged in the manufacturing and sales of products recycled from procured plastic waste. In 2020, through its subsidiary in Switzerland, Mitsubishi Chemical acquired the Minger Group of Switzerland, a recycler of engineering plastics, as well as CFK Valley State Recycling and carboNXT of Germany, which are engaged in carbon fibre recycling.

One typical example of the M&A of a start-up that holds unique recycling technology is a series of investments in JEPLAN (Japan Environment PLANning) by ITOCHU in 2018, by Takashimaya and Yokogawa Electric in 2020, and by Sojitz in 2021. Founded in 2007, JEPLAN is currently expanding its business by utilizing its unique polyester resin recycling technology that can remove impurities which cannot be easily removed in typical recycling processes, thereby regenerating polyester resin without reducing quality.

Figure 12: Target companies (left) and buyers (right) in M&A deals related to recycling



Source: RECOF M&A database, PwC

Reuse

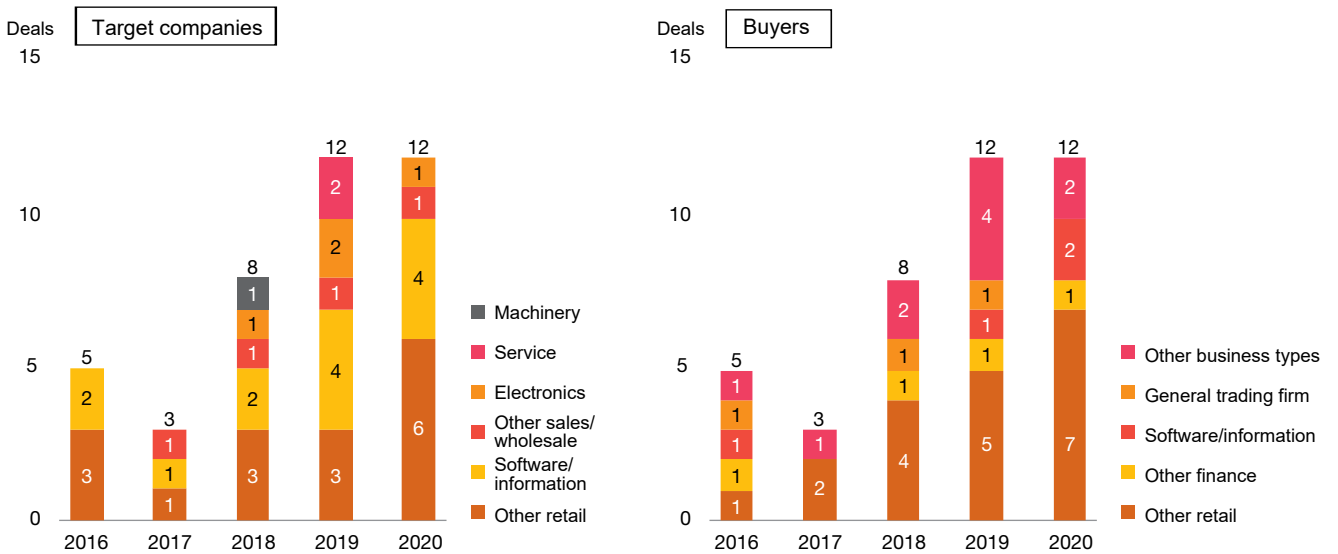
While recycling reshapes used products so that the materials can be used again, reuse means the reuse of products without reshaping their materials. In addition to traditional business models such as those used by antique dealers, a recent rapid increase in interpersonal transactions through online flea market applications and online auction opportunities has helped form a large market.

Although the number of reuse-related M&A deals is relatively low compared to those related to recycling, this number has also increased over the past five years. (See Figure 13.) In 2020, the largest number of target companies in reuse-related M&A, were in the 'other retail' category, followed by 'software/information'. The 'other retail' category, also represented the largest number of buyers, which shows that M&A deals between these 'other retail' companies,

which include antique dealers, are an ongoing occurrence. Another recent trend is M&A deals related to the reuse of batteries for electric and hybrid vehicles.

The major players in the reuse field are antique dealers, including recycling shops, vintage clothing shops, second-hand bookstores, purchase traders and pawn shops, many of which are SMEs. Major publicly-traded companies have been acquiring these antique dealers over the past five years, and we believe that this will continue to some degree in the future. As we mentioned above, however, online interpersonal transactions have increased at an accelerated pace during the period covered by our research. We therefore expect to see more M&A deals related to the rise of start-ups and the fusion between traditional brick-and-mortar businesses and online businesses.

Figure 13: Target companies (left) and buyers (right) in M&A deals related to reuse



Source: RECOF M&A database, PwC

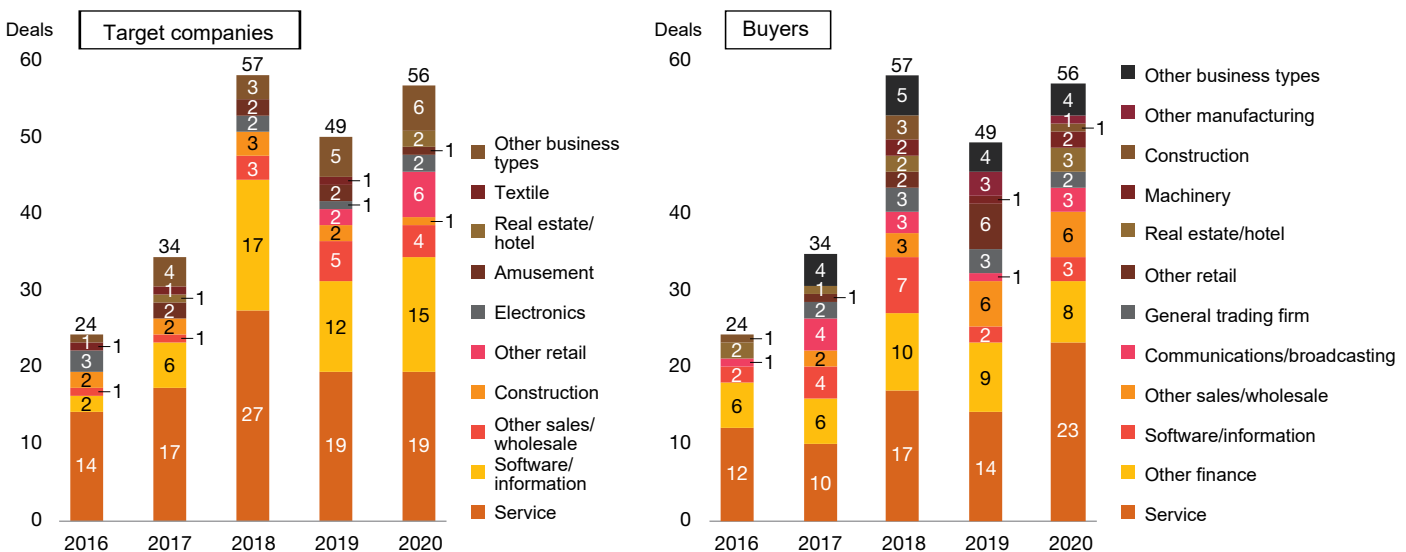
Rental and sharing

The concept, or business model, of rental is hardly new. However, new versions of this model have been appearing in parallel to the development of circular economy. These include subscription services for furniture, clothing, and cars—the product-as-a-service (PaaS) model. The sharing business model has also gained popularity due to technological advances, which encourage people to make effective use of their assets and capabilities by sharing them via online matching platforms.

Under these circumstances, rental- and sharing-related M&A deals have both increased significantly compared with 2016 levels.

Analysis of rental-related M&A by business type shows that many target companies are service businesses and that the number of software and information businesses acquired via M&A has also increased during the years covered by our research. (See Figure 14.) Many buyers were either service business or finance businesses (in the ‘other finance’ category). While conventional rental businesses dealing with construction machinery, apparel, event items etc. have continued to be acquired by other companies in the same industry or by leasing companies, capital investments by venture capital firms in software and information start-ups have also increased. Subscription business-related M&A deals, including acquisitions by apparel manufacturers of start-ups that provide subscription-based rental services, also increased during this period.

Figure 14: Target companies (left) and buyers (right) in M&A deals related to rental



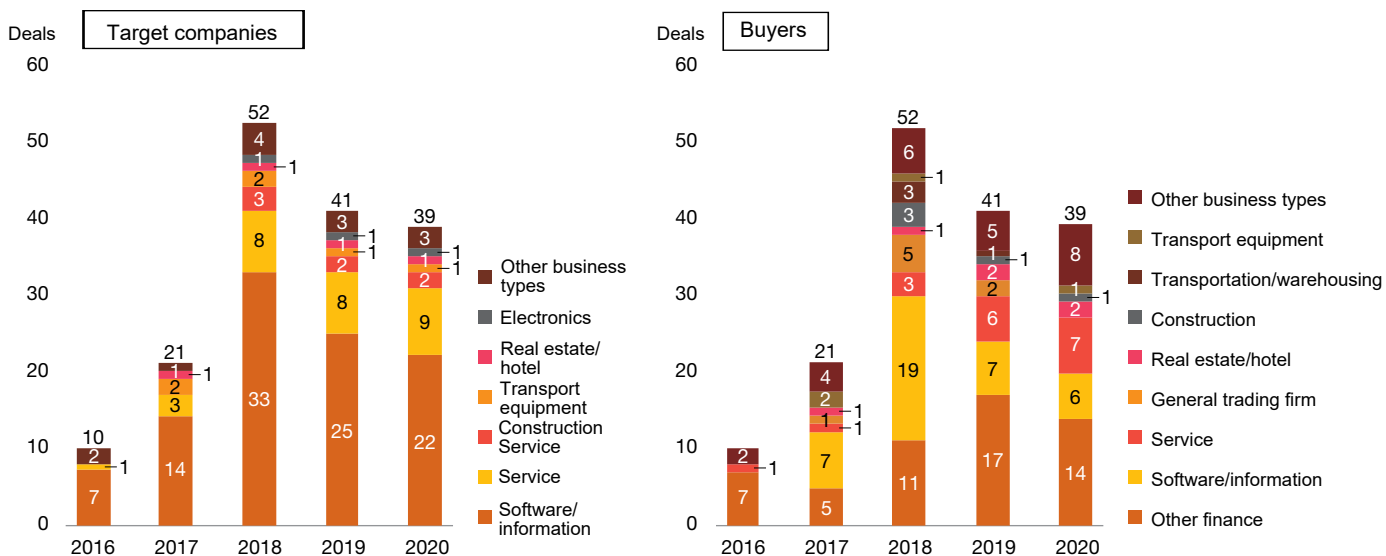
Source: RECOF M&A database, PwC

Our analysis of sharing-related M&A deals by business type shows that the majority of target companies are software and information companies, with service companies occupying the second largest share. Many of these companies are start-ups. A large number of buyers remain venture capital firms, which are categorised here as 'other finance'. This also includes some major corporate venture capital firms. Software and information companies make up the second largest group of buyers, and the number of buyers in the service industry has also increased. (See Figure 15.)

Singapore-based company that is currently the largest mobility sharing company in Southeast Asia, illustrates the trend that cars are shifting from a commodity to be owned to a tool to be shared. Car manufacturers need to address this shift. Start-ups are launching sharing business not only for cars, but also for umbrellas and smartphone chargers, and these start-ups have been on the receiving end of more and more investments. Faced with the need to address environmental challenges, technological advances and changes in consumer preferences, many industries will encounter opportunities to transform their existing business models from the perspective of sharing.

Honda's capital investment in Grab (December 2016), a

Figure 15: Target companies (left) and buyers (right) in M&A deals related to sharing



Source: RECOF M&A database, PwC





4. Conclusion: Building sustainability factors into strategy

Are companies becoming more active in using M&A to ensure a balance of sustainability and strategy?

As we mentioned in the introduction on page 3, the purpose of this report is to explain how some sustainability-sensitive companies have already set goals or formulated strategies based on ESG and the SDGs, and how they have begun implementing M&A deals to meet those goals.

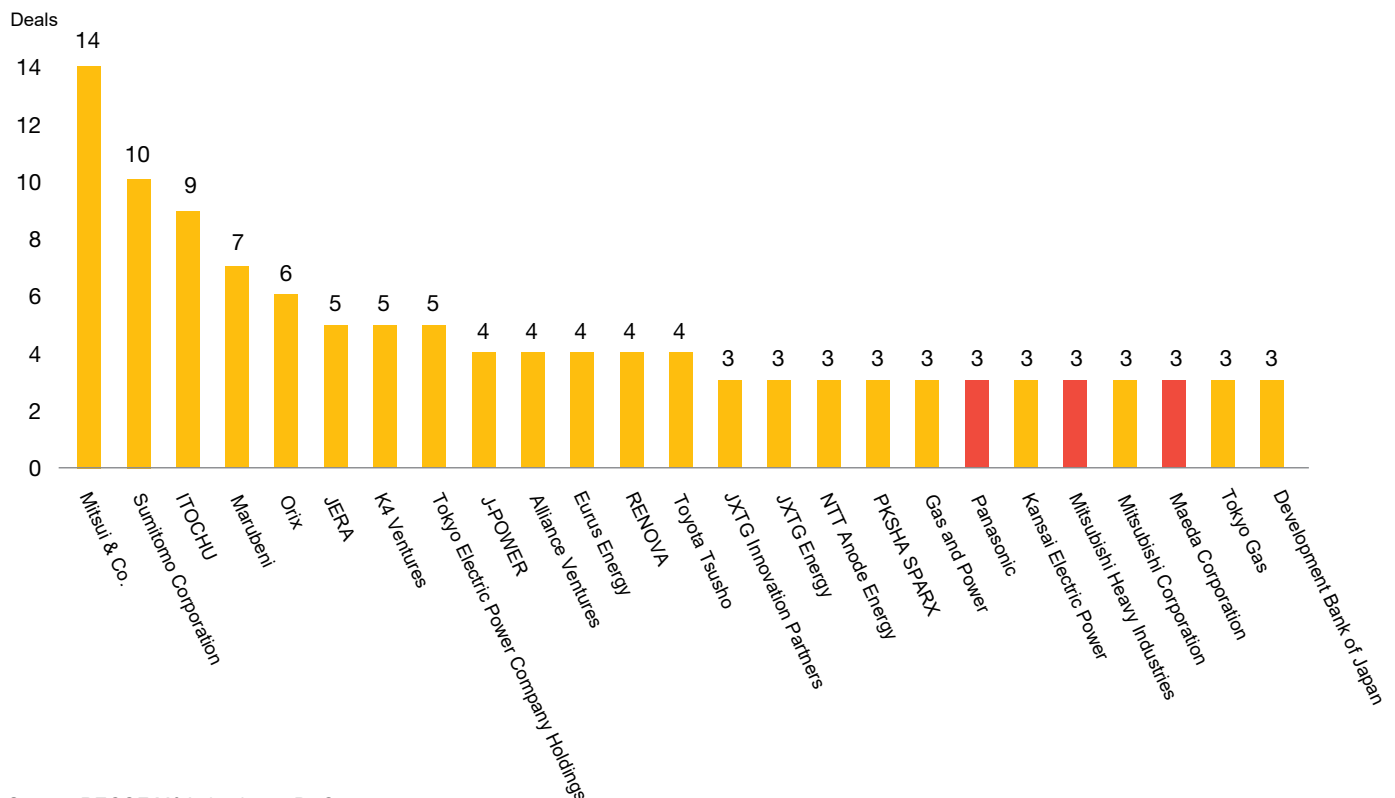
Earlier in this report, we explained that M&A deals related to climate change countermeasures and the circular economy are on the rise. We also explained that in certain fields, such as waste and recycling, we are beginning to see more diversity in both target companies and buyers.

Key point 1:

Which companies are proactively engaging in M&A related to climate change countermeasures and the circular economy?

The following graph shows the number of M&A deals made by each buyer in relation to climate change countermeasures and circular economy.

Figure 16: Climate change-related M&A deals by buyer



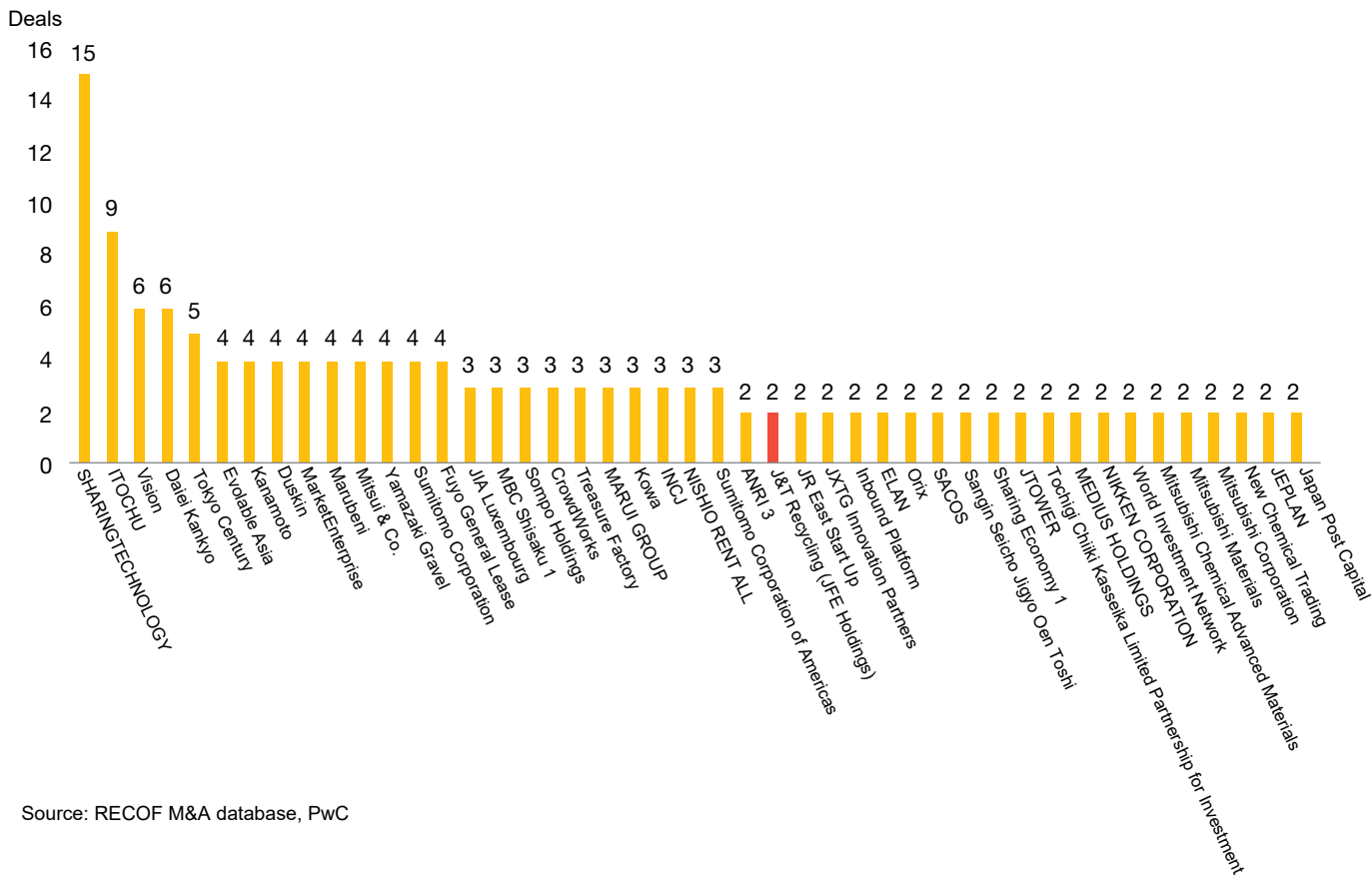
Source: RECOF M&A database, PwC

In this chapter, we will analyse other aspects of the situation, with a focus on the following questions:

- (1) Which companies are more interested in M&A related to climate change countermeasures and the circular economy?
- (2) How do these companies explain the balance between sustainability and strategy?

We believe that answering these questions will meet the purpose of this report.

Figure 17: Circular economy-related M&A deals by buyer



Source: RECOF M&A database, PwC

General trading firms, financial institutions, and energy companies are prominent participants in M&A related to climate change countermeasures. However, companies like Panasonic, Mitsubishi Heavy Industries (MHI), and Maeda Corporation caught our attention (See Figure 16). According to the information in the RECOF M&A database, Panasonic has been involved in M&A deals and investments related to energy saving in housing, air conditioning and those related to automotive electrification. MHI made investments related to decarbonisation and green hydrogen, which we mentioned in Chapter 2. Maeda made investments related to power generation and storage systems.

Buyers in circular economy-related M&A deals represent a diverse range of companies, including service providers, financial institutions and general trading firms. In the recycling field, JFE Holdings has been carrying out M&A deals and investments in which the target companies are disposers of industrial waste and infectious medical waste, and recyclers of food waste and packaging materials (See Figure 17).



Key point 2:

How do these companies explain the balance between sustainability and strategy?

We used several companies' integrated reports as an objective source to examine how each company explains the connection between strategy and sustainability measures.

In their integrated report, Panasonic provides a list of 10 major ESG components and defines each as either an opportunity (contributes to the enhancement of corporate value) or a social responsibility (minimises the risk of damage to corporate value), or both. The 'energy' item under the 'E (environment)' category is described as an opportunity to 'contribute to growth in businesses related to the environment and energy with the use of clean technology, such as energy-saving, battery, and hydrogen technologies.' This is supported by the aforementioned M&A deal in the housing and air conditioning field. Furthermore, in their environmental action plan 'Green Plan 2021', Panasonic mentions various issues, initiatives, and both qualitative and quantitative targets, including the expansion of energy-saving businesses.

Figure 18: Excerpt from Panasonic's integrated report

37 Panasonic Annual Report 2020
ESG as Our Management Foundation

ESG Initiatives (Opportunities and Social Responsibilities)

Since its foundation, Panasonic has endeavored to contribute to the progress and development of society and the well-being of people through its business activities based on the thinking that as a public entity of society the Company must grow together with society and its stakeholders. Konosaka Manufacturing, the founder of Panasonic, listed the following three principles when talking about corporate social responsibility: (1) to contribute to the development of society and people's happiness through our core business activities; (2) to generate fair profits from our business activities and return those profits to the society; and (3) to contribute to the improvement of the living standards of the people.

	Main opportunities and social responsibilities	Opportunities	Social responsibilities
Environment	Energy	Contribute to growth in businesses related to the environment and energy with the use of clean technology, such as energy-saving, battery, and hydrogen technologies.	Control climate change, including more stringent regulations mainly on energy efficiency.
	Resources	Promote manufacturing to achieve a recycling-oriented society, including the recycling of factory waste.	
Society	Human resources	Contribute to business innovation and the creation of new businesses mainly through the development of management resources, the development and the utilization of a diverse pool of human resources, and the creation of organizations.	
	Corporate citizenship activities	Work on solving social issues in a way that supports Panasonic's main business, and contribute to business growth as well as enhancing brand value and tapping new markets.	
	Human rights and occupational health and safety	Abide by all labor laws and regulations, respect basic human rights, including the protection of human capital, and adhere to the terms of labor contracts, and working laws and comfortable workplace environments.	
	CSR processes	Engage customers across chains by working together with suppliers to promote product quality, fair trade, social responsibility, protecting privacy, high compliance, human rights and labor issues, health and safety, and global environmental conservation.	
	Product quality	Improve product quality and ensure product safety, obtain product quality certifications, and engage in optimal manufacturing for every product.	
Governance	Compliance	Establish a global infrastructure and foster a compliance culture, aimed mainly at preventing the violation of applicable laws and respecting the autonomy and self-determination, and promote the use of a global network.	
	Risk management	Identify the risks of the entire Group from among those that may affect business performance, and strengthen corporate-wide risk management through a process of their identification and regular monitoring of the occurrence/absence of the risks of the Group, and taking improvement based on that.	
	Corporate governance	Support ethics and business decisions based on the decision-making functions of the Board of Directors, and accelerate the development of minority business and portfolio returns through flexible investments and appropriate risk taking.	

Source: Panasonic Corporation Annual Report 2020

MHI's integrated report features a section title 'Helping fight climate change by accelerating decarbonization'. As a provider of mechanical systems that make up social infrastructure, MHI explains its initiatives, products and solutions, focusing on renewable energy, next-generation light water reactors and small-modular light water reactors, CO₂ capture, utilisation and storage (CCUS), and hydrogen. Their investments in decarbonisation and green hydrogen, which we described previously, serve to enhance these efforts.

Figure 19: Excerpt from MHI's integrated report

Special Feature

Helping Fight Climate Change by Accelerating Decarbonization

Balancing Economic Development and Reducing Environmental Impact of Economic Activity as We Shift to a Decarbonized World

Fulfilling Our Role as a Company Supporting Fundamental Infrastructure and Aiming for Sustained Growth

MHI Group has contributed to the development of our world by supplying the machinery systems that build fundamental infrastructure. However, as exemplified by SDGs, the issues the world faces in recent years have grown more complex, people's values have become more diversified, and technological innovation has accelerated. Against this backdrop, for MHI Group to continue to answer the needs of all our stakeholders, we will need to go deep into these issues, explore changes in values and technologies, and respond flexibly as a corporation.

To ensure MHI Group remains relevant in the future amid these drastic and uncertain changes, in 2018 we launched MHI FUTURE STREAM (MFS) as an initiative to drive ongoing innovation. As a result of trend analysis in society, economy, and technology, we determined that one area our Group should focus on is to meet the needs of a decarbonized society as a means of solving the challenge of assuring both economic development and reducing our environmental impact. Electricity and other power sources are indispensable for the development of human livelihoods and industries, and as developing countries continue to raise their living standards, global demand will continue to increase. At the same time, when it comes to the problem of climate change, it is important to provide a stable and economically viable electricity supply, while also lessening environmental impact of economic activity. MHI Group has made both economic development and reduction of environmental impact the core of its business strategy, and we will work to develop our business so as to progress toward the achievement of a carbon-free society.

Leveraging Combined Group Strength to Meet the Needs of the Energy Transition Age

Amid growing awareness of climate change issues and the increasing urgency of reducing CO₂ emissions, MHI Group aims to provide a variety of products and solutions that contribute to decarbonization in power generation and other fields.

For example, our existing products and solutions include nuclear power systems that emit no CO₂ and provide large-scale stable power sources, CO₂ capture and utilization technologies (CCU*) and CCUS** and renewable energies such as offshore wind power and hydrogen mixed combustion turbines.

In the field of nuclear power, we will continue to support the safer restarting of existing nuclear power plants (light water reactors) and help develop the nuclear fuel cycle. We are also developing a next-generation light-water reactor that achieves the world's highest levels in both safety and economics. Looking further into the future, we will also work to develop power reactors for small-scale grids and on-board reactors for marine vessels.

We are also developing solutions in anticipation of a coming proliferation of hydrogen power. Our solutions include 100% hydrogen combustion turbines using hydrogen derived from renewable energy, and hydrogen production using high-temperature gas-cooled reactors (HTGRs).

MHI Group will leverage our combined abilities to provide solutions for the energy transition through product and technology integration, and contribute to solutions to climate change and other issues facing our world.

* CO₂ capture, utilization and storage
** CO₂ capture, utilization and storage

MHI Products and Solutions to Accelerate Decarbonization

Renewable Energy


MHI offers a variety of solutions to meet the ever-increasing demand for renewable energy.

In offshore wind power generation, we are rolling out business through MHI VESTAS OFFSHORE WIND A/S, a joint venture with Vesta of Denmark, specializing in offshore wind power generation equipment, to meet growing demand for offshore wind in Europe, the United States and Asia Pacific. In addition to the supply of offshore wind power systems, in July 2020 we signed a collaboration agreement with Denmark's Copenhagen Infrastructure Partners (CIP) for the development of an offshore wind power project in Høvsø, acting on the opportunity presented by this collaboration with CIP, we will expand into the offshore wind power generation business.

Furthermore, to better regulate fluctuating power generation, a characteristic of renewable energy, and to maintain a balance between supply and demand, we have commenced initiatives to provide power generation systems that combine storage, batteries and Power to Fuel**.

In addition, MHI Group provides Organic-Rankine Cycle (ORC) generation systems, which use geothermal heat, waste heat recovery, biomass, and solar heat to efficiently generate zero carbon electricity from medium- and low-temperature heat sources. ORC systems use medium- to high-temperature heat-transfer oil to heat and evaporate an organic working medium in an apparatus unit. The steam produced then rotates the turbine to achieve clean and stable power generation.

** Power to Fuel refers to technologies that use the excess power generated from renewable energy to produce hydrogen and other carbon-free fuels.

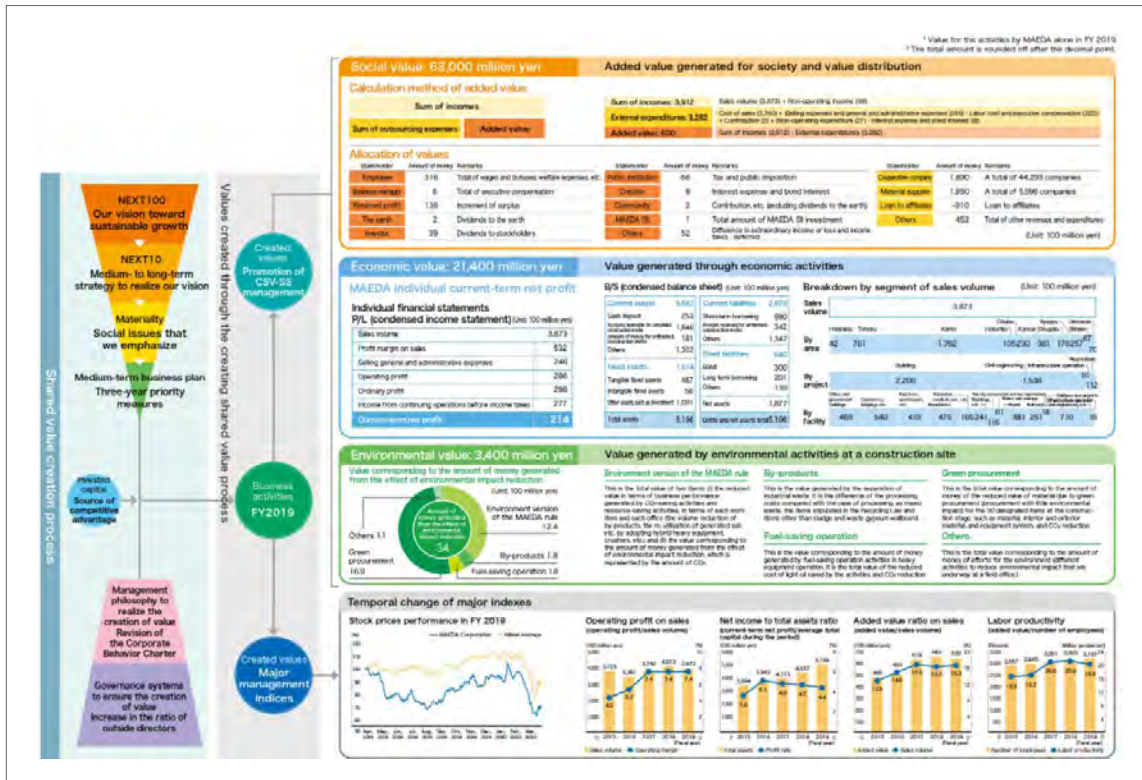


Source: MHI Report 2020

Maeda Corporation's integrated report shows their 'shared value creation process' by visually depicting the social value, economic value, and environmental value (the triple bottom line) created by the company during the year, including quantitative data. The report also recognises social challenges faced by the construction industry at the global, national and regional level, such as aging social infrastructure and labour shortages.

Maeda's report highlights the importance of generating innovation and putting that innovation to practical use in society in order to find solutions to these challenges. Maeda's investment related to power generation and storage systems, which we described previously, seems to be a result of this awareness and action.

Figure 20: Excerpt from Maeda Corporation's integrated report



Source: Maeda Sustainability Report 2020

JFE Holdings' integrated report states early into the report that steel has a low impact on the environment at the manufacturing stage and has a high recycling rate. It emphasises the importance to evaluate environmental impact of steel throughout its entire life cycle, including recycling. Their list of KPIs for material CSR (corporate social responsibility) issues includes issues like 'Develop and provide environmentally friendly products' and 'Pursue resource recycling'. JFE explains the targets and KPIs as well as the results and initiatives of their recycling businesses.



Figure 21: Excerpt from JFE Holdings' integrated report

ESG Activities
KPIs for Material ESG Issues

Area of Focus	Material ESG Issue	Company Strategy	Objectives	Results and/or Initiatives (FY2020)	Targets	Responsibility (FY2020)	
Protect the global environment	Mitigate climate change	<ul style="list-style-type: none"> 1. Continue to reduce environmental footprint through our production activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Reduce CO₂ emissions from energy-related activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Promoted the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promoted the use of green buildings (LEED, etc.) 3. Promoted the use of green vehicles (EV, etc.) 4. Promoted the use of green products (eco-friendly products, etc.) 5. Promoted the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Reduce CO₂ emissions from energy-related activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.) 	
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	Protect the global atmosphere	<ul style="list-style-type: none"> 1. Reduce CO₂ emissions from energy-related activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Reduce CO₂ emissions from energy-related activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Promoted the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promoted the use of green buildings (LEED, etc.) 3. Promoted the use of green vehicles (EV, etc.) 4. Promoted the use of green products (eco-friendly products, etc.) 5. Promoted the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Reduce CO₂ emissions from energy-related activities 2. Reduce CO₂ emissions from energy-related activities 3. Increase the amount of waste that is recycled 4. Promote the use of renewable energy 5. Promote the use of green buildings 6. Promote the use of green vehicles 7. Promote the use of green products 8. Promote the use of green services 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.)
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	Pursue resource recycling	<ul style="list-style-type: none"> 1. Increase the amount of waste that is recycled 2. Increase the amount of waste that is recycled 3. Increase the amount of waste that is recycled 4. Increase the amount of waste that is recycled 5. Increase the amount of waste that is recycled 6. Increase the amount of waste that is recycled 7. Increase the amount of waste that is recycled 8. Increase the amount of waste that is recycled 	<ul style="list-style-type: none"> 1. Increase the amount of waste that is recycled 2. Increase the amount of waste that is recycled 3. Increase the amount of waste that is recycled 4. Increase the amount of waste that is recycled 5. Increase the amount of waste that is recycled 6. Increase the amount of waste that is recycled 7. Increase the amount of waste that is recycled 8. Increase the amount of waste that is recycled 	<ul style="list-style-type: none"> 1. Promoted the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promoted the use of green buildings (LEED, etc.) 3. Promoted the use of green vehicles (EV, etc.) 4. Promoted the use of green products (eco-friendly products, etc.) 5. Promoted the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Increase the amount of waste that is recycled 2. Increase the amount of waste that is recycled 3. Increase the amount of waste that is recycled 4. Increase the amount of waste that is recycled 5. Increase the amount of waste that is recycled 6. Increase the amount of waste that is recycled 7. Increase the amount of waste that is recycled 8. Increase the amount of waste that is recycled 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.)
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Ensure occupational safety and health	Prevent workplace accidents	<ul style="list-style-type: none"> 1. Reduce the number of workplace accidents 2. Reduce the number of workplace accidents 3. Reduce the number of workplace accidents 4. Reduce the number of workplace accidents 5. Reduce the number of workplace accidents 6. Reduce the number of workplace accidents 7. Reduce the number of workplace accidents 8. Reduce the number of workplace accidents 	<ul style="list-style-type: none"> 1. Reduce the number of workplace accidents 2. Reduce the number of workplace accidents 3. Reduce the number of workplace accidents 4. Reduce the number of workplace accidents 5. Reduce the number of workplace accidents 6. Reduce the number of workplace accidents 7. Reduce the number of workplace accidents 8. Reduce the number of workplace accidents 	<ul style="list-style-type: none"> 1. Promoted the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promoted the use of green buildings (LEED, etc.) 3. Promoted the use of green vehicles (EV, etc.) 4. Promoted the use of green products (eco-friendly products, etc.) 5. Promoted the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Reduce the number of workplace accidents 2. Reduce the number of workplace accidents 3. Reduce the number of workplace accidents 4. Reduce the number of workplace accidents 5. Reduce the number of workplace accidents 6. Reduce the number of workplace accidents 7. Reduce the number of workplace accidents 8. Reduce the number of workplace accidents 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.) 	<ul style="list-style-type: none"> 1. Promote the use of renewable energy (solar, wind, biomass, geothermal, etc.) 2. Promote the use of green buildings (LEED, etc.) 3. Promote the use of green vehicles (EV, etc.) 4. Promote the use of green products (eco-friendly products, etc.) 5. Promote the use of green services (eco-friendly services, etc.)
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Source: JFE Group Report 2020

The research we previously described covers some of the distinctive companies that have been engaged in more than one M&A transaction or investment in fields related to sustainability. These companies can be said to have identified material social and environmental issues that may influence the sources of their long-term value creation, and are therefore using M&A as a way to execute their sustainability strategy to strengthening their handling of these issues. These companies are just the tip of the iceberg; similar deals are sure to follow.

Is it possible to quantify the positive impact of the balance between sustainability and strategy on corporate value?

Although this deviates from the main theme of this report, you may be wondering whether the efforts of companies to be aware of the need to integrate sustainability and strategy and to enter into conversations and engagements with internal and external stakeholders are worthwhile, or whether the resulting positive impact on corporate value can be quantified. These questions have attracted a great deal of attention lately, and are also of great interest to us. Therefore, we would like to offer our thoughts and perspectives.

ESG evaluation

How are the efforts of the companies in this report evaluated in the context of ESG?

The average Bloomberg ESG disclosure score (a measure of the amount of ESG information disclosed, on a scale of 0–100) for 2,183 TOPIX (Tokyo Stock Price Index) companies was 24.6 in FY2019, up from 20.9 in FY2014. This suggests that Japanese companies are making slow but steady progress in the disclosure of ESG information. (See Figure 22)

Looking at specific companies, Panasonic (which scored 55.0 in FY2014 and 53.3 in FY2019) and Maeda Corporation (which scored 40.1 in FY2014 and 38.7 in FY2019) have consistently received above-average scores, while MHI (which scored 31.0 in FY2014 and 47.9

in FY2019) and JFE Holdings (which scored 44.2 in FY2014 and 57.4 in FY2019) have widened the gap between their own high scores and the average. Although we cannot draw definitive conclusions based on only a few companies, it appears that companies that are conscious of the need to integrate sustainability and strategy, that make use of M&A as one means to do so, and that strive to initiate conversations and engagements with internal and external stakeholders could tend to be positively evaluated in terms of ESG ratings.

Figure 22: ESG score analysis for 2,183 TOPIX companies

	ESG disclosure score		Difference between score and TOPIX average	
	FY2014	FY2019	FY2014	FY2019
TOPIX average	20.9	24.6		
Panasonic	55.0	53.3	34.1	32.4
MHI	31.0	47.9	10.1	27.0
Maeda Corporation	40.1	38.7	19.2	17.8
JFE Holdings	44.2	57.4	23.3	36.5

Source: Analysed by PwC Advisory LLC based on data provided by Bloomberg.

Note: There are 2,183 TOPIX companies, but not all of these companies were given an ESG score.

The relationship between ESG scores and corporate value

PwC Advisory LLC is conducting empirical research on the relationship between ESG evaluation scores and corporate value for the companies that make up the S&P Global LargeMidCap Index. This research was conducted for nine of the ten industry sectors identified by the Global Industry Classification Standard

(GICS). (The 'Financials' sector was excluded from this research.) Although both company responses to ESG/ sustainability and the corresponding evaluations are still being developed, we hypothesise that a positive correlation can be found between changes in ESG scores and changes in financial and value performance during the five years covered by our research.

Figure 23: Global analysis of 3,225 S&P Global LargeMidCap Index companies

	Performance		Performance by GICS sector		
	Superior group	Inferior group	More companies in the superior group	Equal number of high and low scores	More companies in the inferior group
Increase in the EV/IC multiple	Mixed		3	3	4
Reduced or constrained capital costs	○	×	6	3	0
Changes in ROIC	Neutral		0	9	1
Annual sales growth over the past five years	○	×	8	1	1
Changes in profit margin	○	×	7	1	2
Changes in capital turnover	×	○	3	2	5

Source: Analysed by PwC Advisory based on data provided by Bloomberg.

Note: The S&P Global LargeMidCap Index consists of 3,225 companies, but not all of these companies received an ESG score.

Our conclusion to date is that a comparison between the superior group (the first quartile among companies whose ESG scores improved) and the inferior group (the fourth quartile among companies whose ESG scores declined) shows mixed results among the 10 GICS sectors in terms of changes in a given corporate value multiple (enterprise value/invested capital, or EV/IC).

To shed light on the background behind these results, we examined changes in two indicators that are closely related to this multiple: ROIC (return on invested capital) and capital costs. Interestingly, while there was no significant difference in changes in ROIC among the 10 sectors, we discovered a clear difference when it came to changes in capital costs. (Namely, that the superior group performed better in terms of reducing or constraining capital costs.) This may indicate that investors see companies that have gained recognition and trust in their ESG and sustainability responses as reliable investment destinations.

Although we found no significant difference in ROIC between the superior and inferior group, one possible explanation for this can be found on the companies' income statements and balance sheets. The superior group outperformed the inferior group in both annual sales growth and profit margin improvement during the five years we studied (as seen on their income statements). On the other hand, the superior group performed more poorly in capital turnover (as shown on their balance sheets).

Because the income statements and balance sheets offset each other, overall changes in ROIC were neutral. This suggests an important hypothesis: Companies in the superior group may be initiating a cycle where they promote initial investment and M&A to survive and grow in a sustainable way, causing an increased burden on their balance sheet (a decrease in capital turnover), and then gradually reaping the returns (outperforming the inferior group in annual sales growth and profit margin). On the other hand, companies in the inferior group may be initiating a cycle where they gradually lose their ability to earn money (under-performing the superior group in annual sales growth and profit margin), conduct structural reforms in order to survive, and end up with lighter balance sheets due to balanced contraction (improved capital turnover).

Final remarks

Although this new hypothesis will need to be verified on another occasion, it is clear that companies need to adapt to environmental changes to become sustainable. The SDGs and ESG are undoubtedly becoming crucial pillars of current management strategy, and the integration of sustainability with strategic planning, business portfolios and business models is indispensable for survival. M&A, therefore, needs to play a role beyond that of a tool for implementing strategy. Japanese companies must therefore consider how M&A can not only economic value but also social value.



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