Actions for Adapting and Mitigating Climate Change

The most pressing environmental problem facing the world today is climate change.

At COP21, held in Paris in December 2015, signatory nations agreed to limit the increase in the global average temperatures to well below 2°C, and to pursue efforts to limit the temperature increase to 1.5°C; they also agreed to draw up a draft of further international targets. Since developed countries are responsible for 80% of historical carbon dioxide emissions, signatory nations also agreed that developed countries and developing countries had "common but differentiated responsibilities." Countries across the globe have since accelerated moves toward realizing carbon-free societies. Through abnormal weather, rises in sea levels, and other phenomena, climate change is already impacting people's lives, economic activity, and ecosystems in a number of ways. Moreover, the negative impacts of climate change are greatest on developing countries and the vulnerable, and this is creating additional societal issues such as inequality and poverty.

At the same time, measures taken to ease or adapt to climate change are leading to improvements in ecosystem services through the enrichment of natural capital, while the migration of social systems driven by investment promotion and technological innovation is generating economic growth. Global sustainability now hinges on how quickly societies can achieve net zero CO_2 emissions.

Target SDGs for Climate Change Initiatives

Action Guidelines for Mitigating Climate Change

1. Implementation of Measures and Support to Help Mitigate Climate Change
In addition to actively taking measures to reduce greenhouse gas emissions in our own business operations, we are making efforts, as a corporate citizen, to support activities that mitigate and adapt to climate change.

2. Provision of Products and Services
We are working on developing and providing products and services that help mitigate climate change. Our financial functions are being leveraged to promote energy conservation and encourage the use of renewable energy.

3. Collaboration with Stakeholders
We engage in dialogue and cooperation with our stakeholders as we work to mitigate climate change.

4. Education and Training
We will ensure that these guidelines are fully implemented at Group companies, and will actively conduct education and training to mitigate climate change.

5. Information Disclosure
We will actively disclose information related to our efforts to mitigate climate change.

Summary of Activities in 2020/2021

	Targets for 2020/2021	Results
Long-term sustainable finance target*1	• Undertake a total of ¥5 trillion in projects in the 10-year period from FY2021 to FY2030 (including ¥3 trillion in the environmental field)	• ¥328.5 billion, as of September 30, 2021
Climate change mitigation	• Further expand renewable energy finance portfolio • Reduce CO_2 emissions by 50% from FY2019 levels by FY2030*2	• 170 projects generating a total of 16,245 MW • 4.4% less than in FY2020
Disclosure of climate-related information	• Enhance TCFD Report	• Published TCFD Report in January 2022 • Announced Carbon Neutral Commitment

*1 For initiatives carried out by SuMi TRUST Bank
*2 For initiatives carried out by SuMi TRUST Bank; in the Carbon Neutral Commitment announced in October 2021, the bank changed its policy to achieving net-zero greenhouse gas emissions from the SuMi TRUST Group by FY2030

Carbon Neutral Commitment

In October 2021, SuMi TRUST Bank announced the following Carbon Neutral Commitment, with the aim of reducing greenhouse gas emissions worldwide and solving other climate change-related issues in society. In order to steadily promote this commitment, SuMi TRUST Holdings has also joined the Net Zero Banking Alliance (NZBA).

1) Contribute to achieving carbon neutrality in society by leveraging trust banking group's wide-range and flexible functions
2) Target net-zero GHG emissions in investment and loan portfolios by 2050*1
   To achieve net-zero emissions by 2050, a milestone target for 2030 will be formulated in FY2022 in line with the framework of the NZBA
3) Achieve net-zero GHG emissions in the SuMi TRUST Group by 2030*2

*1 Scope 3 Standard (emissions of other companies related to the SuMi TRUST Holdings' activities) of the GHG Protocol, a GHG emissions measurement and reporting standard developed by the global GHG Protocol Initiative
*2 Scope 1 and Scope 2 of the GHG Protocol
Scope 1: A reporting organization's direct GHG emissions
Scope 2: A reporting organization's indirect emissions associated with the generation of electricity, heating/cooling, or steam purchased from other companies for its own consumption

Participation in International Initiatives

In order to more steadily promote its initiatives toward carbon neutrality, the SuMi TRUST Group has become a member of the Net-Zero Banking Alliance (NZBA); NZBA is a financial sub-sector net-zero initiative of the Glasgow Financial Alliance for Net-Zero (GFANZ), a sector-wide coalition of net-zero finance initiatives.

NZBA is an international initiative for banks committed to aligning their lending and investment portfolios with net-zero GHG emissions by 2050; it was convened by the UN in April 2021. NZBA members are required to systematically reduce operational and attributable GHG emissions from their lending and investment portfolios, with the goal of achieving net-zero emissions by 2050 or earlier.

The SuMi TRUST Group became a member of NZBA in October 2021. Going forward, in line with NZBA guidelines, the Group will draw up interim reduction targets and concrete reduction schedules for GHG emissions, and promote initiatives aimed at achieving net-zero.

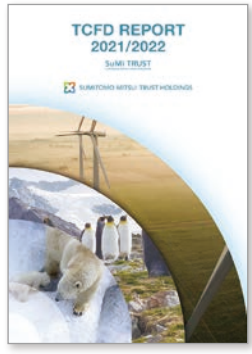
The Net-Zero Asset Managers initiative (NZAMI) is an international group of asset managers committed to achieving net-zero GHG emissions in investee companies by 2050; it was launched in December 2020. NZAMI members are required to systematically reduce GHG emissions in assets under their management, with the goal of achieving net-zero emissions by 2050 or earlier.

Sumitomo Mitsui Trust Asset Management became a signatory of NZAMI in July 2021, with Nikko AM following in November 2021. Going forward, in line with NZAMI guidelines, both companies will formulate interim GHG emissions reduction targets for assets under their management, and promote initiatives aimed at achieving net-zero.

TCFD Report Publication

TCFD stands for "Task Force on Climate-related Financial Disclosures." It was established by the Financial Stability Board (FSB) to develop recommendations for how companies ought to disclose climate-related financial information. SuMi TRUST Holdings declared its support for TCFD and its recommendations in 2018. Since then, Group companies have followed these recommendations in their activities, with a focus on the core recommendations related to information disclosure. The Group has published a TCFD Report covering its Group-wide initiatives every year since fiscal 2020.

URL: https://www.smth.jp/-/media/th/sustainability/report/2021/tcfd_all.pdf



Initiatives Led by the Technology Based Finance Team

Partnership Agreement with Hokkaido Regional Environment Office, Ministry of the Environment

In September 2021, SuMi TRUST Bank signed a partnership agreement with the Hokkaido Regional Environment Office, Ministry of the Environment, with the twin aims of popularizing ESG regional finance and of promoting the resolution of regional issues in Hokkaido. This forms part of the Group's wider goals of realizing its Carbon Neutral Commitment by 2050, and of creating a Regional Circular and Ecological Sphere, which seeks to construct a recycling-based, carbon-free society that exists in harmony with nature.

Both parties will leverage their respective functions, knowledge, and networks to popularize ESG regional finance, and to promote the resolution of regional issues by creating model businesses focused on regional benefits and providing support for the implementation of impact evaluations. In this way, they will undertake new initiatives aimed at realizing regional sustainability.

The partnership agreement signing ceremony, September 16, 2021

<Agreement Overview>

1. Promote the popularization of ESG regional finance at regional financial institutions
2. Promote the simultaneous resolution of regional problems and of global warming, by focusing on decarbonization
3. Promote the introduction of renewable energies, etc., with a focus both on environmental friendliness and regional benefits
4. Support the implementation of impact evaluations for ESG regional finance projects
5. Promote innovation and implement outstanding technologies across society
6. Create regional financial opportunities such as co-financing

Partnership Agreement for Impact Evaluations on Local Production for Local Consumption of Energy

SuMi TRUST Bank has signed a partnership agreement with The Bank of Yokohama, Ltd., Hamagin Research Institute, Ltd., and Odawara City, Kanagawa Prefecture, to carry out impact evaluations on local production for local consumption of energy in Odawara City. This is the first time in Japan that a regional public entity and regional financial institutions have signed a partnership agreement to carry out in-depth impact evaluations.

Odawara City is working with private enterprises on projects to promote the construction of local microgrids for the local production for local consumption of energy. Together with The Bank of Yokohama, the leading financial institution in the region, and Hamagin Research Institute, The Bank of Yokohama's thinktank, SuMi TRUST Bank will identify and assess the impact of these projects on regional finance, local communities, and the environment; their goal is to realize a model for local production for local consumption of energy in Odawara City.

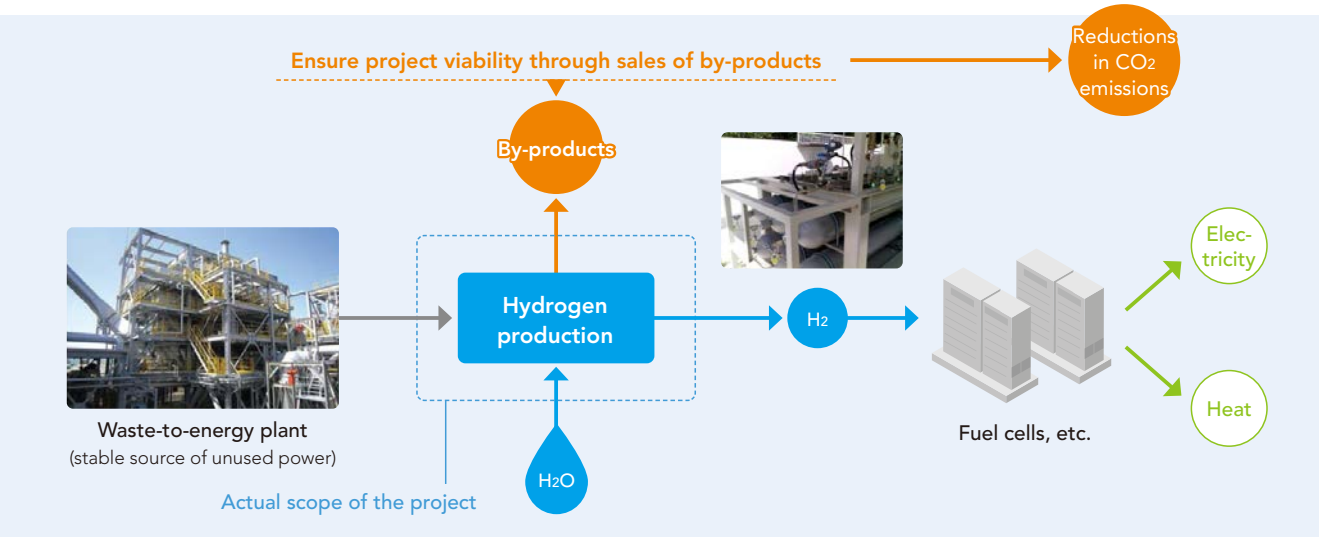
Title	Partnership Agreement to Assess the Impact of the Local Production for Local Consumption of Energy Project in Odawara City
Target	• Establish a platform for cooperating with The Bank of Yokohama, Ltd., Hamagin Research Institute, Ltd., and Odawara City, with the goal of carrying out impact evaluations and formulating impact finance methods for the Local Production for Local Consumption of Energy Project • Carry out impact evaluations on renewable energy management, including the use of primarily solar-based distributed power supplies, and the multi-purpose use of electric vehicles (for transport, BCP, and adjusting supply and demand) • Select groups of companies to promote the project, and carry out impact evaluations on them; construct a logic model for understanding the collective impact of the initiatives of each company group
The role of SuMi TRUST Bank	• Identify businesses and projects to undergo impact evaluations • Carry out practical affairs related to impact evaluations • Provide know-how and support for the execution of practical affairs related to impact evaluations, including conducting interviews with Odawara City and companies involved in the project; managing changes in external environments; and tracking both the quantitative and qualitative effects of the project on regional finance • Provide support for understanding the technologies required for Odawara City's local production for local consumption of energy model • Provide support for minimizing negative impacts and for creating and enhancing positive impacts

Establishing a Green Hydrogen Supply Chain

Asahi Pretec Corp., FC Development Co., Ltd., X-Scientia Co., Ltd., and SuMi TRUST Bank have started developing systems and carrying out verification tests on building a green hydrogen supply chain through the effective use of by-products. The parties proposed the "Development of a system for building a green hydrogen supply chain through the effective use of by-products" project for consideration as part of the "2021 Low Carbon Technology Research, Development and Demonstration Project," promoted by the Ministry of the Environment's Global Environment Bureau, and have been awarded a partial subsidy.

The project seeks to develop hydrogen co-production systems capable of utilizing unused electricity from waste-to-energy plants to jointly produce both hydrogen and by-products, with the goal of significantly reducing hydrogen production costs. After the completion of the project, the parties will discuss utilizing renewable energy and unused regional energy; their goal is to contribute to regional decarbonization by producing affordable hydrogen, and creating a green hydrogen supply chain that uses both hydrogen and any valuable by-products locally.

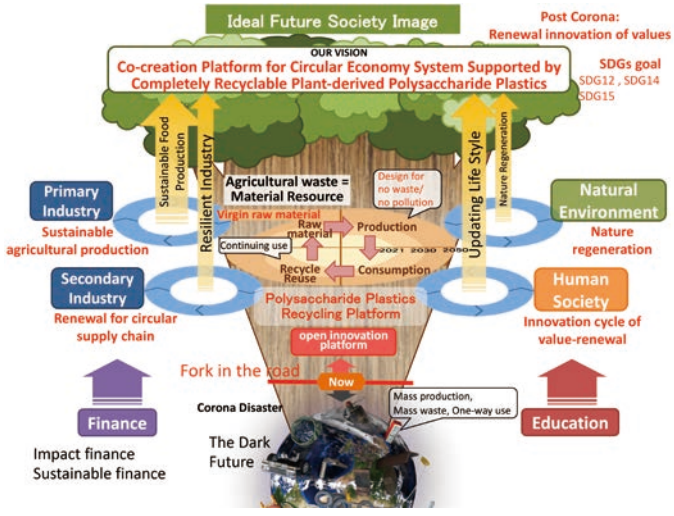
In April 2021, SuMi TRUST Bank established a technology-based finance (TBF) team—a group of experts in the fields of environment and energy—with the aim of financing the social implementation of decarbonization technologies. The TBF team's first proposal was to collaborate with X-Scientia to actualize the design of the green hydrogen supply chain project; the team's role is to stimulate demand with a view to future commercialization, and to establish business schemes.



Participation in "Renewable plant polysaccharide-based plastic resource-oriented society co-creation hub"

Recycling-oriented societies contribute significantly to climate change mitigation by reducing the amount of energy required for producing products. It was for this reason that, in December 2021, SuMi TRUST Bank chose to participate in the Kanazawa University-led "Renewable plant polysaccharide-based plastic resource-oriented society co-creation hub" project, which was selected by the Japan Science and Technology Agency as a full-scale (10-year project) program for open innovation platforms for industry-academia co-creation (COI-NEXT) for fiscal 2021.

This project views polysaccharide agricultural waste as a resource, and seeks to establish a bioplastic recycling platform that incorporates the following steps: tailoring the design of bioplastic products—which do not generate plastic waste—to their usage scenarios; producing only the necessary quantities of plastic; and collecting and recycling used plastic so that it can continue to be reused.

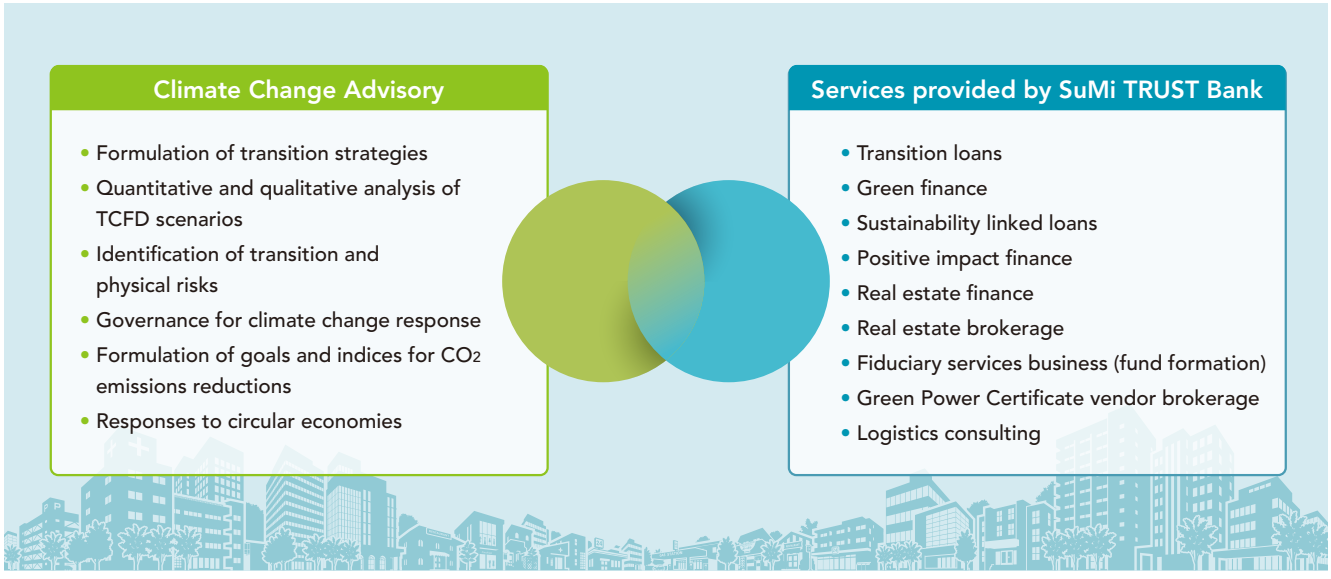


SuMi TRUST Bank Initiatives

Solutions to Climate Change

SuMi TRUST Bank established the Sustainable Business Promotion Office in April 2020. The organization was dedicated to developing and promoting ways to accelerate the growth of the Bank's solutions business for corporate enterprises, and to increase the corporate value (solutions business for social issues) of its clients through the provision of new ESG products and services.

In light of the increasing ESG needs of its clients, in April 2021 SuMi TRUST Bank reorganized the office as the Sustainable Business Promotion Department with the aim of strengthening its functions in various areas: the cross-business development of ESG solutions; human resources; product development; business infrastructure establishment; and branding. The Sustainable Business Promotion Department will provide a comprehensive climate change response consultation service and a diverse array of solutions.



Financing Renewable Energy Projects

Through project finance, SuMi TRUST Bank promotes the implementation of large-scale wind power generation, solar power generation, and other renewable energy projects; in addition, it has established and manages a renewable energy fund that specializes in large-scale renewable energy power generation projects.

The Bank is expanding its project finance for both onshore and offshore wind power generation overseas, and further increasing its financing activities for solar power generation in Japan. The SuMi TRUST Bank is involved in projects with a total power generation capacity of 16,245 MW, and a total annual output of 43,674 GWh; this equates to an annual CO_2 reduction effect of 18.976 million tons, of which SuMi TRUST Bank's contribution accounts for 2.961 million tons.

Reducing CO_2 Emissions through Project Finance

	Number of projects	Potential capacity (MW)	Annual output (GWh/year)	CO_2 reduction (PJ-based) (1,000t)	CO_2 reduction (contribution by the company) (1,000t)
Solar	118	5,896	8,804	4,625	1,313
Wind	26	3,577	9,598	3,450	574
Offshore wind	12	5,874	19,464	8,114	507
Biomass	13	779	5,764	2,767	565
Power generation from waste	1	120	44	21	2
Total	170	16,245	43,674	18,976	2,961

Eligibility inclusion: Project financing involving SuMi TRUST Bank (inside and outside Japan)
Capacity calculations: Numerical values of potential generation capacity, gigawatt hours of output per year, and CO_2 reduction effect cover all projects in each category.

Solar Power Generation Project Loans for Infrastructure Investment Corporations

In November 2020, SuMi TRUST Bank originated a loan of approximately ¥27.9 billion to an infrastructure fund that primarily invests in renewable energy power generation facilities; the loan will be used to finance the acquisition of a large-scale solar power generation plant. Following the acquisition, the infrastructure fund is expected to become one of the largest listed infrastructure funds in Japan, with total assets of approximately ¥58.8 billion.

The loan is a syndicated loan involving a total of 13 regional and national financial institutions, and is the largest loan that a listed infrastructure fund has ever received in Japan. The land (superficies) and power generation equipment included in the large-scale solar power plant acquisition funded by this loan is under a trust beneficiary right scheme, with SuMi TRUST Bank as the trustee. This marks the first time that SuMi TRUST Bank has been the trustee of a property with superficies.

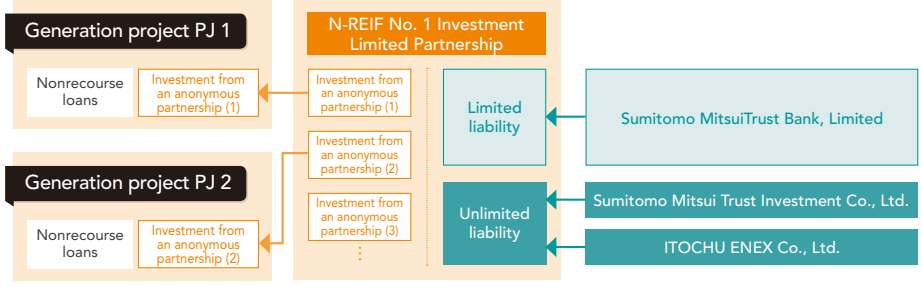
Renewable Energy Funds and Investment Products for Investors

SuMi TRUST Bank established and operates funds that invest in renewable energy power generation projects. In addition, SuMi TRUST Bank launched a domestic renewable energy business investment fund for institutional investors.

As of March 2021, these funds have supplied equity funding for 27 mega-solar power generation projects and 1 wind power generation projects with total potential generation capacity of 365 MW. Of the ¥142.0 billion in aggregate equity investment directed into these projects, our funds supplied total equity investment of ¥25.5 billion. These projects generate annual power output of 412 GWh, commensurate to CO_2 emission reduction of over 220,000 metric tons.

* For CO_2 emission reduction calculations, we use the emission coefficient of each electricity supplier in the electricity supply system of the region where each project is located.

Renewable Energy Fund Scheme



- We contribute by providing equity-like funding for the spread of renewable energy projects.
- We are building up an investment track record in solar and wind power generation, and plan to broaden the scope of our renewable energy investments.

The first fund of the Domestic Renewable Energy Business Investment Fund for Institutional Investors was established as a trust in April 2018 with an AUM of ¥12.7 billion (¥11.5 billion from external investors). The fund completed its investment phase in April 2020 following investment in seven projects and has moved into the management phase. The total power generation capacity of all the projects included in the first fund is 119 MW, with annual power output reaching 138 GW, commensurate to CO_2 emission reduction of over 820,000 metric tons. We are currently considering the establishment of a second fund.

Establishing an Investment Fund for Renewable Energy Projects

There is a growing need for renewable energy in Japan. For this reason, in December 2021, NTT Anode Energy Corporation, Tokyo Century Corporation, SuMi TRUST Bank, and Sumitomo Mitsui Trust Investment established an investment fund with the goal of promoting the expansion of solar power generation and other renewable energy projects. The four companies will combine their financial power and expertise in developing and operating renewable energy and, through this fund, seek to acquire renewable energy projects worth a total of around ¥100 billion.

Sumitomo Mitsui Trust Panasonic Finance Initiatives

Solar Power Generation for Self-Consumption

Sumitomo Mitsui Trust Panasonic Finance formed a partnership with an experienced solar power equipment manufacturer to help companies develop optimal investment plans for solar power generation for self-consumption based on their power utilization records, and reduce their initial costs through subsidies.

This venture helps companies reduce their CO_2 emissions, reduce their Scope 3 emissions, and participate in SBT and RE100 initiatives; it also contributes to the Japanese government's Low Carbon and Decarbonization initiatives.

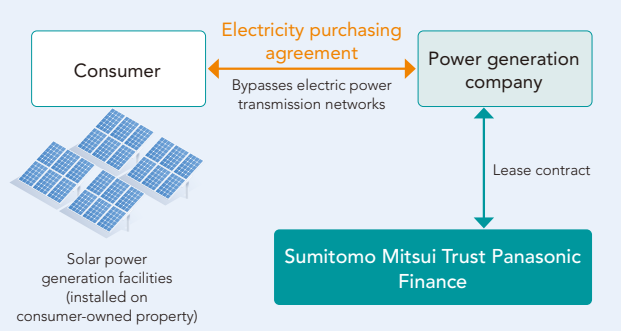
Contributing to Decarbonization through Corporate PPAs

Sumitomo Mitsui Trust Panasonic Finance is collaborating with power generation companies to promote the procurement of electricity through corporate power purchase agreements* (PPAs). Corporate PPAs offer three merits to clients: 1) the removal of solar power generation facilities from their balance sheets; 2) the procurement of renewable energy with no initial investment; and 3) the effectively use of non-operational or idle land.

*Corporate PPAs are long-term agreements for consumers to purchase renewable electricity from power generation companies; they are available in various forms. Sumitomo Mitsui Trust Panasonic Finance has practical experience in the provision of subsidized on-site and off-site PPAs.

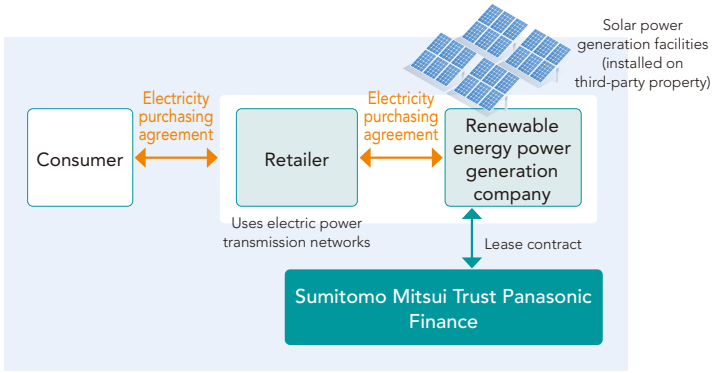
On-site PPAs

An on-site PPA is an electricity purchasing agreement in which a consumer purchases electricity that has been generated on its own property: the consumer provides a power generation company with use of privately owned property (rooftops, idle land, etc.); the power generation company uses this space to establish, operate, and maintain power generation facilities; the consumer purchases and consumes the electricity generated. Since on-site PPAs are exempt from renewable energy levies, consumers are not affected by rises in the unit price of electricity, so facilitating the stable procurement of electrical power.



Off-site PPAs

An off-site PPA is an electricity purchasing agreement in which a consumer purchases electricity that has been generated on third-party property: power generation facilities are installed on third-party property; electricity is sent from these facilities to the consumer via transmission networks. Off-site PPAs are targeted at consumers who face difficulties installing facilities on their own property, or whose demand exceeds their on-site generation capacity. Off-site PPAs incur consignment fees and costs related to supply and demand adjustments.



Mega-Solar Installations Using Leases

Leasing power generation facilities helps lower the initial investment cost for construction; projects can also earn stable income by using the feed-in tariff (FIT) system. Leases are therefore an effective method of financing that enhances business planning stability.

In addition to new projects, Sumitomo Mitsui Trust Panasonic Finance also provides lease-based financing options for fully operational projects that have been put up for sale to investors (secondary transactions). And it also started a leasing and installment plan support service for offshore floating mega-solar power plants. The Group will continue to fuse its extensive know-how honed thus far with financial services to offer schemes that best meet the needs of increasingly sophisticated renewable energy projects.

Micro-Power Generation in Water Supply Systems

Sumitomo Mitsui Trust Panasonic Finance proposes ideas for adopting micro-power generation systems in water supply systems across Japan, and promotes global warming mitigation measures and the use of natural energy in the regions.

Japan's water supply systems possess an enormous amount of untapped energy in the form of unutilized vertical drops in non-pressure flow pipes, surplus pressure in pumped supply pipes, and reduced pressure from pressure-reducing valves—all of which can be used for power generation. To utilize this untapped energy, Sumitomo Mitsui Trust Panasonic Finance operates a leasing system in which it installs and operates highly efficient power generation systems in local government water facilities; this helps minimize initial investment costs and reduce the burden of operation for local governments.

As of November 2021, highly efficient power generation systems have been installed—or are scheduled to be installed—at approximately 46 water facilities across Japan, with a total power generation capacity of 1,589 kW. The company expects these facilities to generate 12,370 MWh of power per year, equating to annual CO_2 emissions reductions of 6,803 tons.

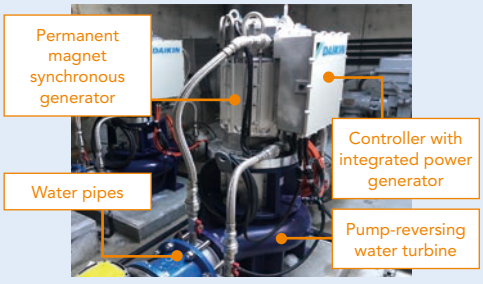
Characteristics of micro-power generation systems

High efficiency: Efficient power generation system developed with inverter controls
Low cost: System configuration uses general-purpose pumps, low-cost magnets, and standardized parts
Compactness: Power generator and control device are stacked on top of each other to minimize installation space

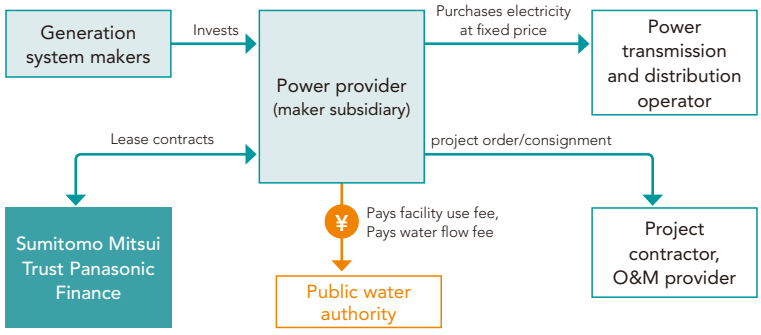
Characteristics of leasing system (advantages for local governments)

- No upfront investment costs on project launch
- Power provider manages and maintains the system
- Stable lease revenue and receipt of property tax

Newly developed micro-power generation system for water supply systems



Schematic Diagram



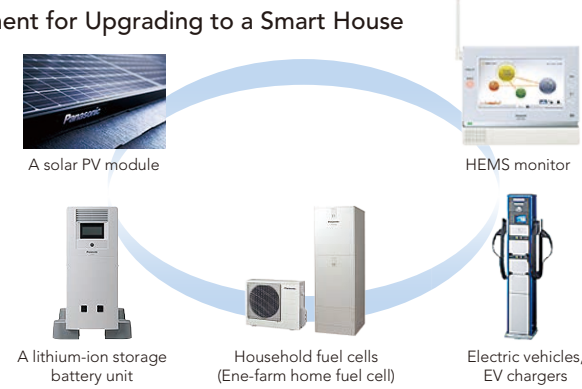
Home Renovation Loans for Smart Houses

Homes continue to evolve, and are now able to generate electricity on-site, and use this electricity in a smart manner. Through its home renovation loans, Sumitomo Mitsui Trust Panasonic Finance is supporting the conversion of homes into "smart houses." Today, smart houses are capable of efficiently generating and storing power through a combination of solar panels, storage batteries, and household fuel cells. Improved energy-saving functions also enable homeowners to tailor their electricity consumption to their lifestyles and the prevailing weather conditions. The ten-year Excess Electricity Purchasing Scheme for Photovoltaic Power commenced in 2009; as such, since 2019 there has been significant growth in household solar power generation equipment whose feed-in tariff contracts have expired. Going forward, the conversion of existing homes into "smart houses" will be a key topic in the fight against global warming.

Following the liberalization of retail sales of electricity and gas to households in Japan, energy and telecommunication sector services are increasingly being integrated; examples include sales of packages that combine telecommunications or broadcasting services with various forms of electricity. The development of houses, home appliances, and vehicles with multiple functions is also advancing. Through its solar loans, Sumitomo Mitsui Trust Panasonic Finance has contributed to the popularization of household solar panels since the Excess Electricity Purchasing Scheme for Photovoltaic Power was established.

Going forward, by partnering with equipment vendors and installers, Sumitomo Mitsui Trust Panasonic Finance will continue to support the conversion of homes into "smart houses" via its renovation loans.

Equipment for Upgrading to a Smart House



A smart house