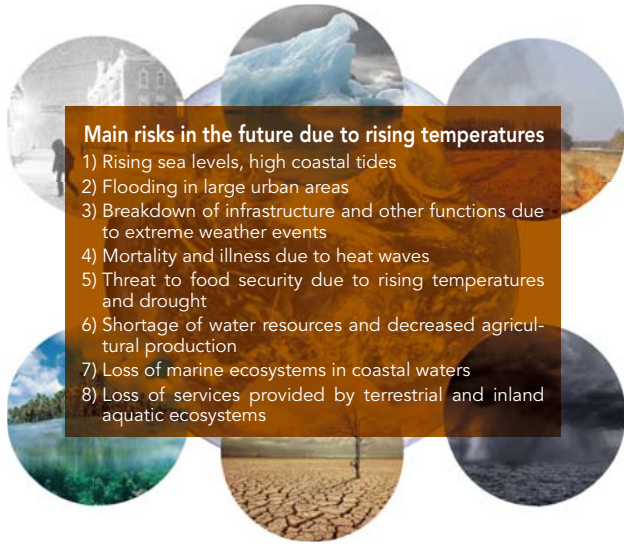
Addressing Climate Change Using Our Financial Capabilities

In recognition that building a sustainable society is necessary to addressing climate change, the Group devised "Action Guidelines for Mitigating Climate Change" and is advancing this theme as the most important of its Eco-Trustution* initiatives.

With the adoption of the Paris Agreement, a new international framework for climate change at COP21 in Paris, the world is nearing a major turning point in the supply-demand structure of energy, from the need to further reduce CO_2 emissions and pressure to exit coal-fired power generation to growing interest in renewable energy deployment. The Group will continue to develop high-value-added financial solutions businesses that leverage its capabilities and skills as a trust bank.



* ECO Trustution: The Group has coined the word "Eco-Trustution" for environmental financial businesses that offer solutions to ecological issues using our trust function. Under this concept, we work to develop and provide solutions-based financial instruments and services.

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.

Finance and Climate Change

Financial institutions are exposed to risks arising from climate change but climate mitigation and adaption measures offer new business opportunities. In their investment and lending decisions, financial institutions will need to be cautious about funding businesses that will be substantially affected by climate change while actively seeking to allocate funding to businesses contributing to climate action.

Climate risks facing financial institutions: Examples

1 Risk of deterioration at companies, projects, and individuals in loan and investment portfolios due to climate change impacts
2 Risk of earnings swings at individual companies and sectors due to legal and/or regulatory changes, a heavier economic burden from climate-related measures, and technological competition
3 Risk of infrastructure ceasing to function due to flood damage, irregular weather, etc. and spill-over effects on business continuity
4 Risk of rising costs for mitigation and adaption measures to address climate change

Climate-related business opportunities for financial institutions: Examples

1 Provide financing to promote broad adoption of renewable energy
2 Provide financing to corporations and individuals to adopt energy-saving solutions
3 Provide financing for social infrastructure responsive to climate change risks
4 Provide financing to develop new technologies for mitigation and adaption

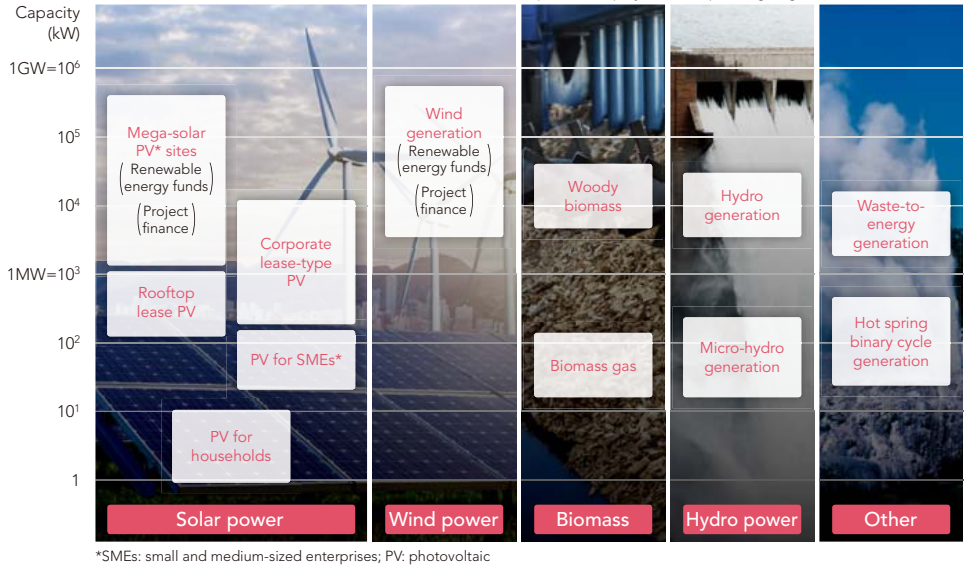
Spread and Growth of Renewable Energy

Our Renewable Energy Initiatives

SuMi TRUST Group is working to develop financial products to facilitate diverse forms of renewable energy. These include schemes for business scales that range from micro-generation to large-scale generation.

Specifically, the Group provides finance in various forms, ranging from renewable energy funds that invest in electricity generation to project finance and leases.

Graph (include projects in the planning stage and under construction)



*SMEs: small and medium-sized enterprises; PV: photovoltaic

Renewable Energy Funds

Renewable energy funds have been set up to invest in large-scale generation projects using renewable energy sources like solar power.

- We contribute by providing equity-like funding for the spread of renewable energy projects.
- We are expanding assets under management in our funds and building up an investment track record in solar power. We plan to broaden the scope of our renewable energy investments to include biomass, wind, and other sources.
- We are working to develop investment products for individuals and institutional investors and pension funds that seek stable income gains.

Overview of Funds

Item	Comment
Name	N-REIF No. 1 Investment Limited Partnership (LP)
Establishment	March 30, 2015
General partnership	Sumitomo Mitsui Trust Investment Co., Ltd., ITOCHU ENEX Co., Ltd.
Limited partnership	Sumitomo Mitsui Trust Bank, Limited
Fund size	5.025 billion yen
Investment scope	Renewable energy projects backed by renewable energy sources law*

Note: Investment scope includes greenfield projects (developments where facilities have been certified) and brownfield projects (sale of facilities in operation).

* Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities

Mega-solar PV Sites: Metrics on Operational Status*

Number of sites	Sites	160
	Licenses & permits	1,554
	Ratio of operating PV sites*	10.3%
Capacity [MW]	MWs	1,753
	Licenses & permits	30,573
	Ratio of operating PV capacity*	5.7%

* For mega-solar PV sites of over 2MWs (as of June 2015), about 90% of them are not in operation (i.e., sites still at the planning stage). In terms of aggregate mega-solar PV capacity, about 94% is still not in operation.

** Calculated based on materials released by the Agency for Natural Resources and Energy.

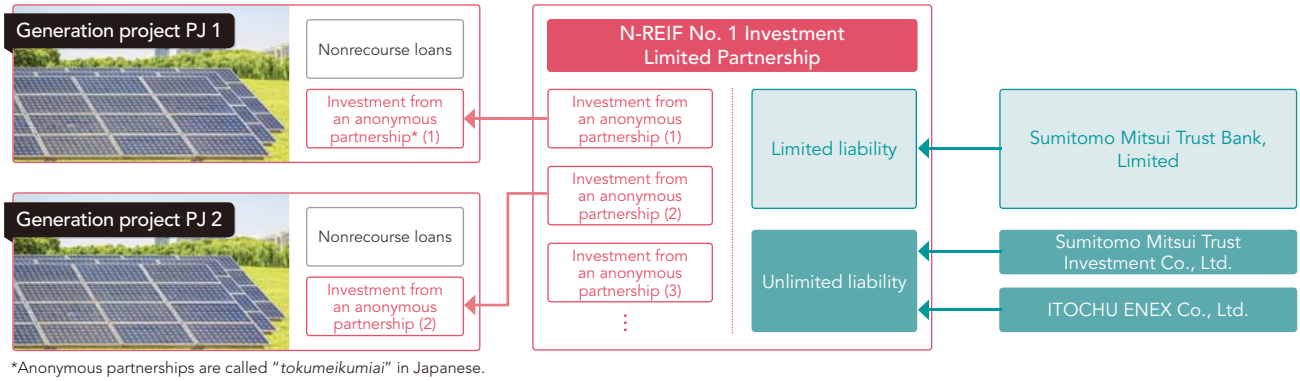
Investigating Multiple Projects as Prospective Investments (as of November 2015)

- Mega-solar PV sites extend from the Kanto region to the Kyushu region
- Generation capacity ranges from 10MW to 60MW
- Total project expenses range from 3 billion yen to 25 billion yen
- Capital required from funds range from 500 million yen to 2 billion yen

We look to respond to the following needs of renewable energy generators.

- They seek to lock in equity-like finance for projects.
- They seek to raise funds smoothly.
- They aim for further expansion of mega-solar PV sites, while the investment funds we manage seek to keep their equity exposure per site at a safe level.
- They seek to move generation assets off their balance sheets.
- They seek to unwind existing generation assets into non-core businesses.
- They seek to sell off a portion of project equity to confirm the viability of a future exit.

Fund Schemes



*Anonymous partnerships are called "*tokumeikumiai*" in Japanese.

Project Finance for Renewable Energy

We are promoting the adoption of renewable energy such as wind and solar power through project finance.

We are also participating in new kinds of large-scale projects such as offshore wind turbines and biomass.

Since the introduction of Japan's feed-in tariff (FIT*) system, mega-solar PV sites have been built across the nation. The process of negotiating an international agreement to combat climate change from 2020 onwards is highlighting the necessity of further CO_2 emission reductions globally.

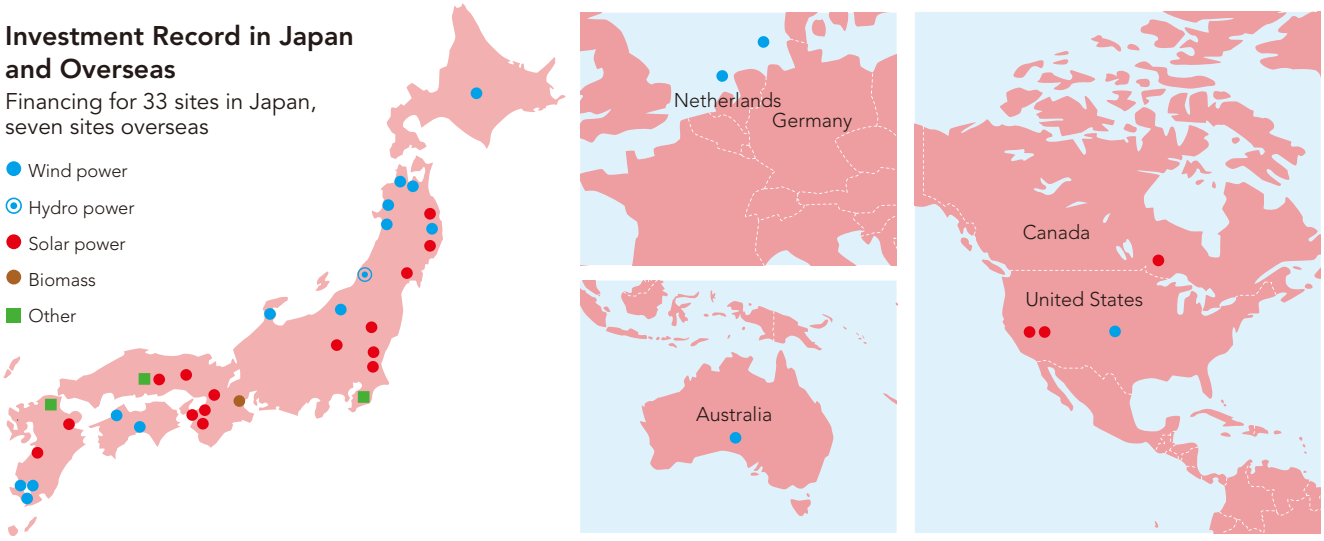
To accompany our investments in wind and solar generation, Sumitomo Mitsui Trust Bank ("SuMi TRUST Bank") is executing financing arrangements in new fields such as large-scale biomass generation in Japan and two overseas offshore wind generation projects. Expectations for financing to support broader adoption of renewable energy continue to grow.

* Japan's FIT system requires utilities to purchase electricity generated by renewable sources at fixed prices.

Investment Record in Japan and Overseas

Financing for 33 sites in Japan, seven sites overseas

- Wind power
- Hydro power
- Solar power
- Biomass
- Other



Large Projects Come On-stream in Japan and Overseas

Wind Farm in Japan

In Akita Prefecture, where wind conditions on the coastline are favorable, a large-scale wind turbine park has been installed. Each turbine can generate 3MW, the greatest capacity among domestic wind farms. The total generation capacity of the six wind turbines combined comes to 18MW. Using the FIT system, electricity generated by the wind turbines is sold on to affiliated electric power utilities.

Overseas Mega-solar

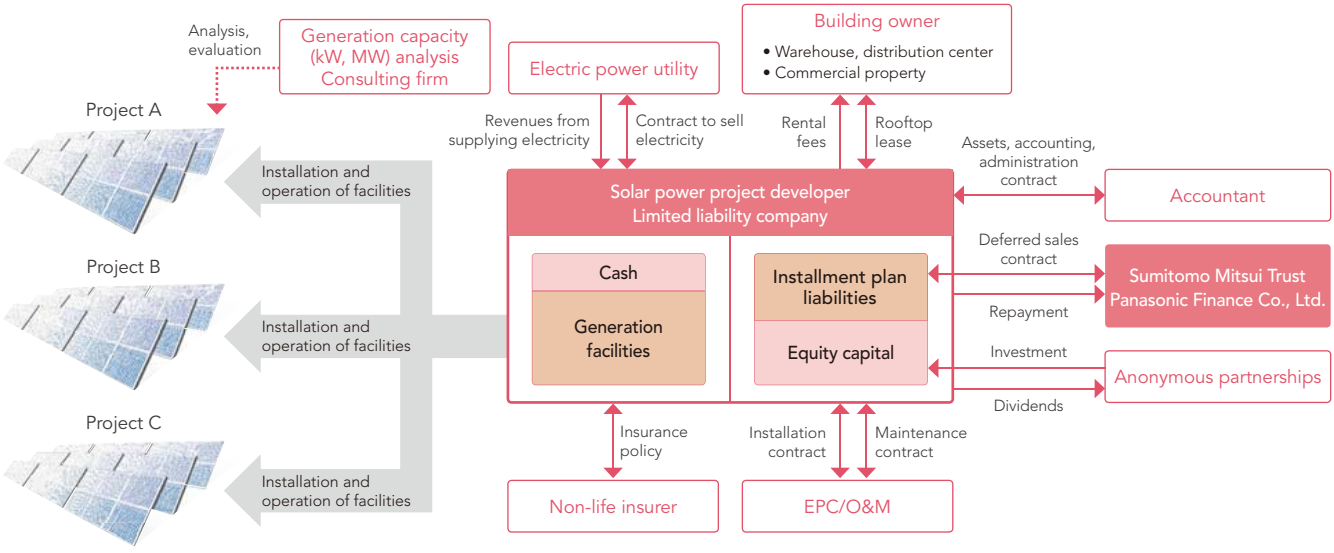
A mega-solar PV site with 250MW capacity has been built in a hilly desert region of Nevada, United States. There are no mega-solar PV sites of this size in Japan, but overseas more mega-solar sites of a similarly massive scale will come on-stream or are at the planning stage.

Solar PV Panels for Leased Rooftops

Sumitomo Mitsui Trust Panasonic Finance Co., Ltd. supports financing for the facilities necessary for solar PV panels to be installed on leased rooftops.

There is still a lot of untapped space to install PV panels on buildings in Japan. Solar power developers lease the rooftops of various businesses such as warehouses, distribution centers, and commercial properties for PV panel installations. Using the FIT system, solar power developers wholesale the electricity generated, and property owners receive a stable rental fee for leasing their rooftops.

Through September 2015, PV panels have been installed on the rooftops of seven properties using this approach. The smallest installation is 120kW and the largest is 1,050kW, with total installed capacity exceeding 4,300kW.



Biomass Generation

We support adoption of biomass facilities that convert food waste and other organic waste into biogas.

At a biomass power generator, organic waste—such as food waste, livestock urine and manure, and organic sludge from sewage and waste-water—is fermented and combustible gases, mainly methane, are extracted and used as fuel to generate electricity. Under the Food Recycling Law, the recovery of heat from food wastes is recognized as a form of recycling provided certain conditions are met, and so the electricity generated can be resold using the FIT system.

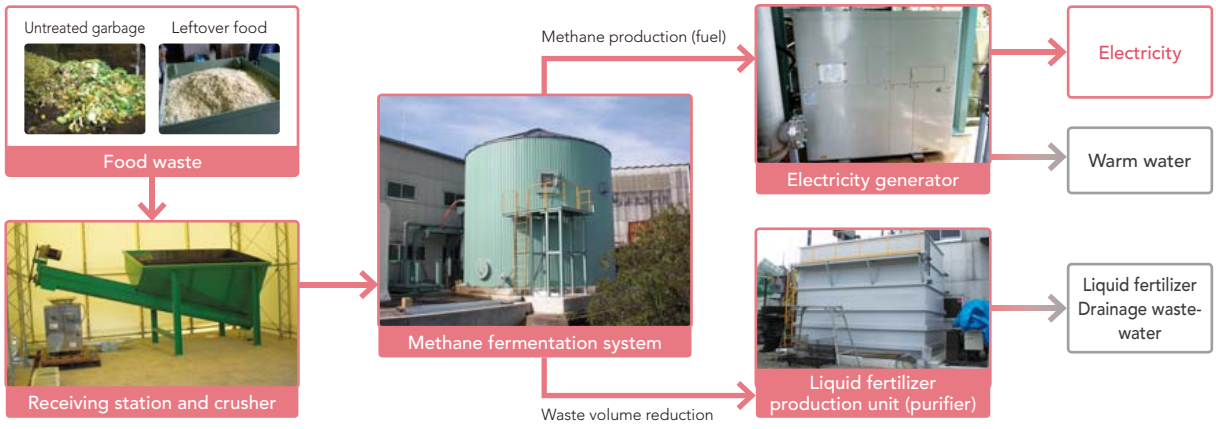
Merits

- Curtails volume of waste produced, reduces waste disposal costs
- Earns income from reselling electricity via the FIT system
- Curtails putrid odors due to fermentation, reduces release of bad smells to nearby areas
- Byproducts like post-fermentation, digested slurry can be recycled as a liquid fertilizer

Wastes eligible for recycling

- Food waste, food residues
- Livestock urine and manure
- Organic sludge, etc. from sewage and waste-water

Adopting a Food Waste Processing System: An Example



Support for Energy Efficiency

Energy Management Systems Using Leases: Examples

We offer comprehensive support from the planning and adoption stages through to energy management services.

Specific investment ideas

1 Installation of high-efficiency refrigerators and refrigerator showcases
2 Conversion to LED lighting
3 Adoption of integrated control systems

Post-adoption savings

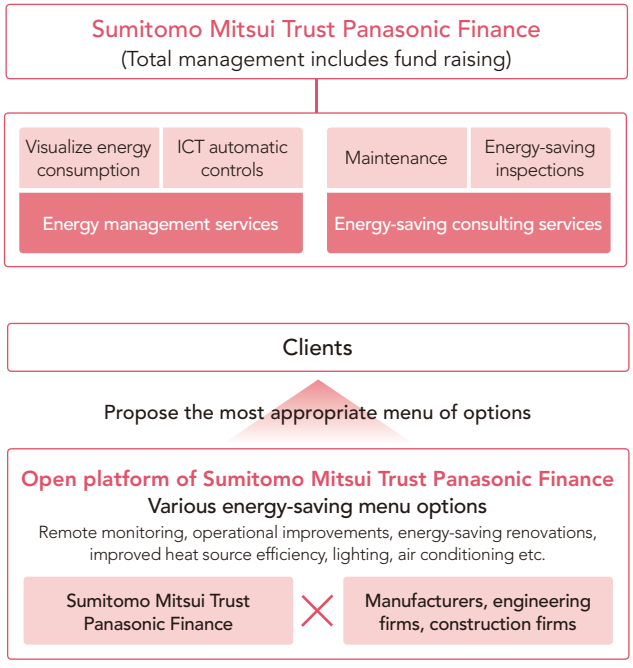
1 Electricity consumption lowered by about 500,000 kWh per year (25% cut)
2 Electricity bill lowered by about 13 million yen per year
(These examples are for a supermarket with 7,300 m^2 total floor area)

A store that remodeled by installing high-efficiency refrigerators, refrigerator showcases, and LED lighting.

Key points in our proposals

1 A one-stop service menu from energy-saving consulting, equipment investment planning, and financing to post-installation energy management services
2 Harnessing subsidies lightens upfront investment sum (subsidy rate of 33%)
3 Use of leases reshapes payment stream: Zero upfront investment to purchase equipment with costs paid over time in the form of leveled out payments

Energy-Saving Consulting: Energy Management Services

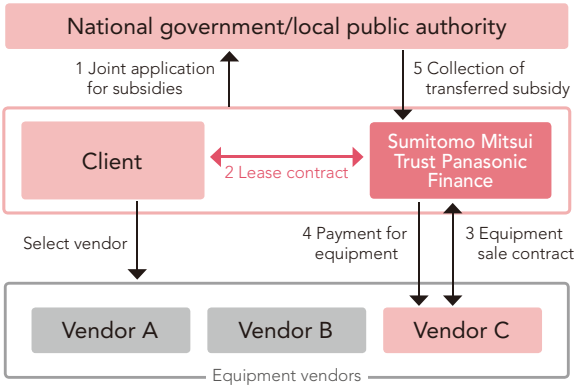


One-Stop Services for Energy-Saving Investment: Subsidy-Eligible Leases

We offer one-stop services that support all proposals from planning for energy-saving investments to asset operation.

- Our one-stop service menu ranges from energy-saving assessments, examinations to identify energy-saving measures, equipment selection, subsidy applications, and securing financing to maintenance services.
- Using leases enables installation of energy-saving equipment without upfront investment cost.
- Securing subsidies lowers upfront investment costs, enabling recipients to benefit even more from energy savings and cost reductions.
- We offer tailored proposals through partnerships with manufacturers and installers.

A Flow Chart Mapping Out the Use of Subsidies

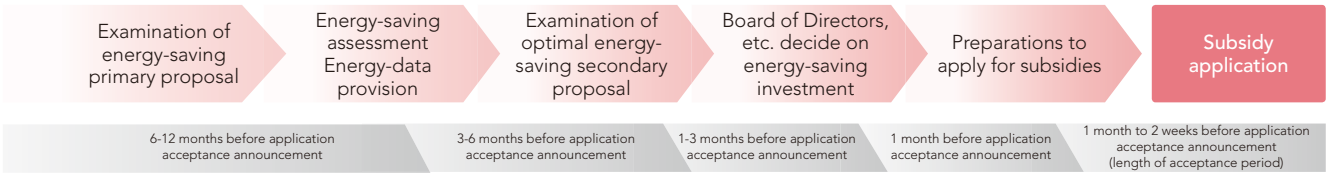


Main subsidy systems

- Subsidy support for rationalizing energy use at SMEs
- Zero net energy building (ZEB) project: Subsidies to promote adoption of innovative energy-saving technologies in housing and buildings
- Sharply cut CO_2 emissions via efficient execution of advanced countermeasures (ASSET project)
- Subsidies to support adoption of onsite installed lithium-ion storage batteries

* Certain conditions must be met to be eligible to apply for subsidies.

Stages in the Subsidy Application Process



Other Contributions to Climate Change Countermeasures

Farming systems that use renewable natural resources

We support energy-efficient farming that uses natural forms of energy such as sunlight, water, and wind to control the environment inside greenhouses. Sensors can track key environmental metrics such as the atmospheric temperature and the temperature of things inside greenhouses and automatically adjust controls to effectively balance the overall environment.

We seek to improve annual production efficiency such as the volume of produce for each unit of energy consumption and upfront investment.

A passive house-based farming system

Picture: Panasonic Eco Solutions Condominiums & Apartments Engineering Co., Ltd.

Safe retrieval and disposal of Freon gases, next-generation refrigerants

Safely retrieving and disposing of Freon gas from equipment whose lease has expired are the main tasks of Japan Machinery Leasing and Sales Co., Ltd., a Group member. An atmospheric ozone destroyer and greenhouse gas, Freon has been used in air conditioners, freezer/refrigerator showcases, refrigerators, and freezers.

Moreover, the Group is striving to provide leases for equipment that use next-generation refrigerants like non-Freon gases with a low GHG coefficient.

A non-freon freezer unit and a non-freon freezer showcase

Reducing CO_2 Emissions in Buildings, Community Development

Renovation Loans for Smart Houses

We support remodeling homes into "smart houses" through our home renovation loans. Houses are being transformed into places where families use wisely the energy they generate themselves.

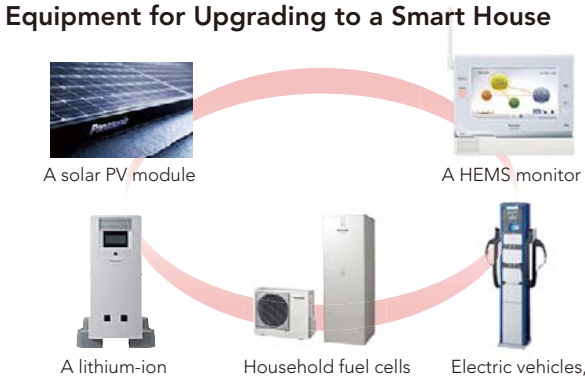
A smart house can efficiently generate and store energy by combining solar PV panels, a storage battery unit, and a household fuel cell. There have been extensions and improvements to functions that enable dwellers to control electricity consumption to match their lifestyle and weather conditions.

Retail sales of electricity and gas to households in Japan are to be liberalized soon. It is hoped non-electricity companies, such as telecommunication companies, will enter this market and offer bundled services that include telecom, TV broadcasts, etc. along with electricity. Moreover, electric vehicle battery packs may increasingly be put to use to store energy, and progress is expected in the development of services where the functions performed by housing, home appliances, and vehicles are integrated.

A smart house

Since a system to purchase surplus electricity from solar panels was created, Sumitomo Mitsui Trust Panasonic Finance has contributed to the spread and adoption of solar power generation by households through its solar loans. Our solar loan portfolio as of October 2015 stood at 58.5 billion yen. Through our partnerships with equipment vendors and installers, we support remodeling homes into "smart houses" through our renovation loans.

Equipment for Upgrading to a Smart House



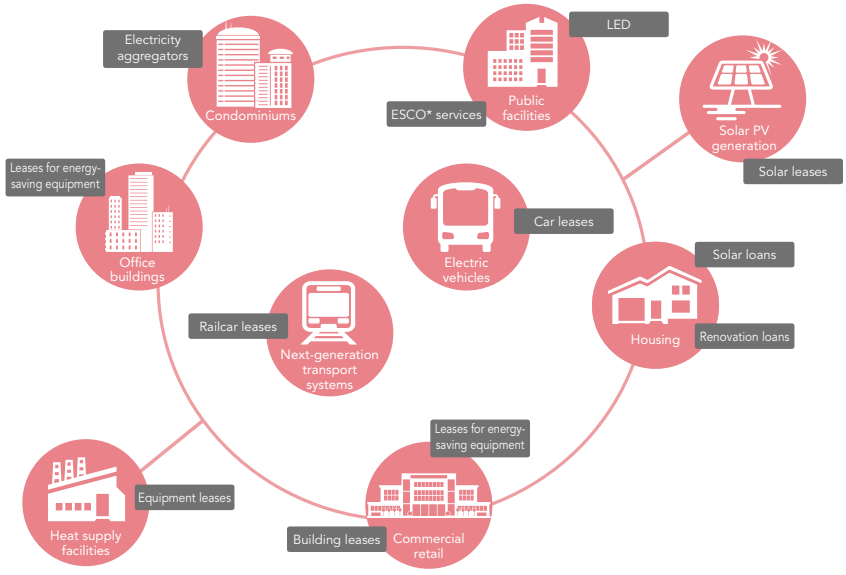
Smart Cities

We support smart town and smart city projects in many ways, ranging from the creation of value-added by taking the environment into account to the provision of funding to individuals via leases and housing loans.

Fujisawa Sustainable Smart Town

Panasonic Corporation, Fujisawa City, and eleven partner companies, including SuMi TRUST Bank, are collaborating to promote Fujisawa Sustainable Smart Town. Community-wide, comprehensive CO_2 reduction efforts include town management programs. This approach is driving town development.

Smart City Diagram



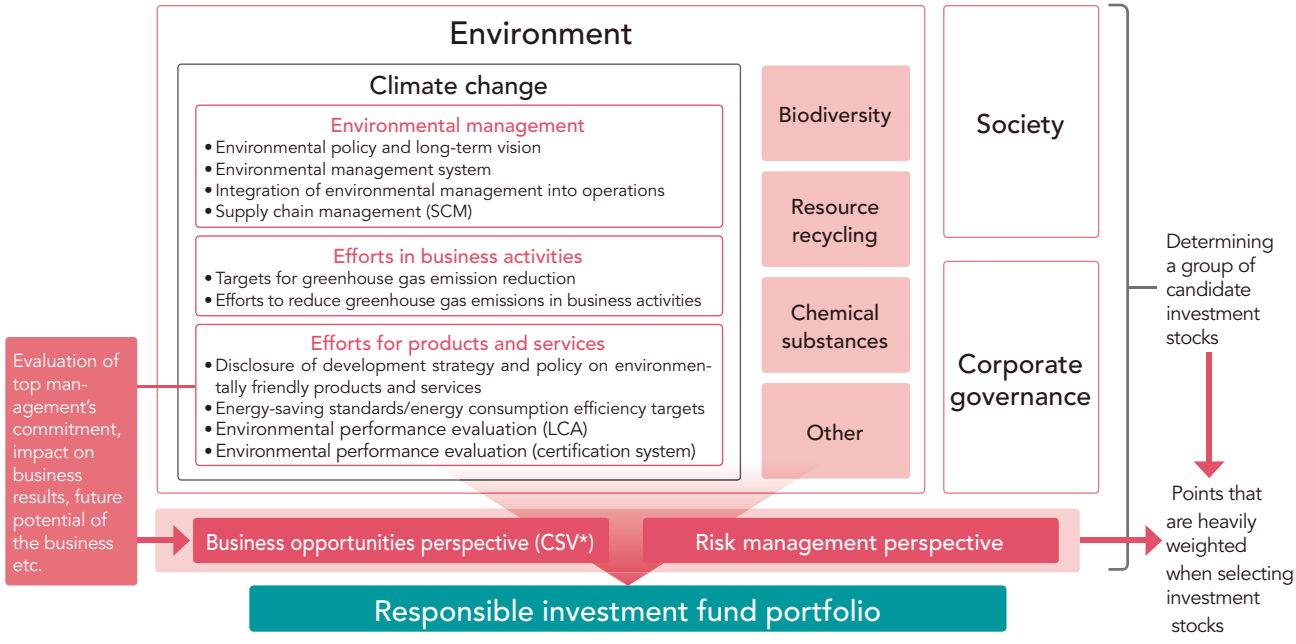
* Energy service companies

The goal of smart cities is to realize a sustainable society via climate change mitigation by improving energy usage efficiency across many activities such as information technology, transportation, residential environment, production activities, and recreation activities.

Evaluation of Corporate Climate Change Mitigation Efforts in Responsible Investment (RI)

Climate change mitigation efforts are an important evaluation item for the various responsible investment funds offered by SuMi TRUST Bank. When selecting stocks for investment, we emphasize the dual perspectives of pursuing business opportunities and risk management based on the comprehensiveness of a company's measures.

Our View on Corporate Evaluation in a Responsible Investment Context



* CSV stands for "creating shared value." CSV is the philosophy of pursuing social value and corporate value together.

Evaluation of Corporate Climate Change Mitigation Efforts in Financing

The Group evaluates climate change mitigation efforts through an environmental rating system and measurement of CO_2 emissions volume in a potential borrower's supply chain.

Environmental Rating Loans

SuMi TRUST Bank embeds items on climate change and global warming mitigation efforts into the rating criteria for environmental rating loans. These loans incorporate an evaluation system not only of emission volume and measures to reduce greenhouse gases produced by business activities at the client company, but also of the climate impacts from its supply chain management. The evaluation includes whether the company has a grasp of the volume of emissions in its supply chain, and whether it promotes initiatives through its supply chain.

Clients of SuMi TRUST Bank's environmental rating loans can use an optional paid service for calculating the scope 3 greenhouse gas emissions upstream in their supply chain. They can use the results of this calculation for information disclosure for the Carbon Disclosure Project (CDP) and corporate social responsibility (CSR) reports. In addition, the optional service provides calculations of water usage volume and land area used in the upstream supply chain.

Branches with Built-in Eco-features

Koganei Branch (Tokyo)

The Koganei branch was opened in July 2015 as the sole trust bank in the Koganei neighborhood. The branch has many features designed to reduce its CO_2 emission impact. It has been outfitted with solar panels, all its indoor lighting comes from LED sources, and its energy management system shows how much electricity it is using on displays in ways that are easy to grasp.

Hoshigaoka Branch (Nagoya)

The Hoshigaoka branch was opened in August 2015 as the sole trust bank in Nagoya city's eastern part. Outfitted with solar panels and digital displays at two spots that show its electricity use, the branch adds to the surroundings with a green roof covered with a drought-resistant moss varietal (*sunagoke* in Japanese, *Racomitrium japonicum*).