

Responding to Climate Change



Our Approach to Climate Change Risks and Opportunities

Policy

In December 2018, Mitsui & Co. declared its support for the Task Force on Climate-related Financial Disclosures as part of our response to the growing importance of business sector action on climate change for the sustainability of society, as evidenced by the adoption of the Sustainable Development Goals (SDGs) and the Paris Agreement by the United Nations.

One of the priorities defined as part of Mitsui's Materiality is the creation of an eco-friendly society. We recognize global environmental impacts, including climate change, as risks that could threaten the sustainable growth of society and Mitsui. On the other hand, response to climate change will also bring new business opportunities in such areas as low-carbon energy, environment-friendly infrastructure and products, and innovative services based on digital technology. We regard both economic development and action on climate change as essential to sustainable social growth, and we will continue to make maximum use of Mitsui global group integrated strengths toward the achievement of the goal through our business activities in cooperation with various stakeholders.

As part of this commitment, in July 2018, Mitsui announced that it would no longer accumulate new thermal coal assets out of coal business that discharges a large amount of greenhouse gas. We also set the target of increasing the portion of our renewable energy based power generation capacity to 30% by 2030. Furthermore, we identify risks and opportunities in the business environments of each of our business units and formulate sustainable growth strategies. From the perspective of each of our following Materiality, "secure sustainable supply of essential products," "enhance quality of life," and "create an eco-friendly society," Mitsui will continue to work toward the achievement of both economic development and the creation of a low-carbon society by improving the efficiency of existing business operations, and promoting initiatives based on innovative technologies and business models.

We also actively participate in climate change sectional meetings hosted by the government ministries and agencies concerned, as well as related study groups and working groups to facilitate the recognition of issues on a global level and deepen discussions with member companies. We reflect what we have learned through these activities in our business initiatives.

Accelerating our Response to Climate Change

System

Mitsui established the Sustainability Committee as a subsidiary organization of the Corporate Management Committee to gather information about the sustainability of our business activities, carry out monitoring, and provide advice to the Corporate Management Committee. In relation to climate change, the Sustainability Committee works with business units to identify risks and opportunities and monitor frontline responses. The committee is also working to ensure that it can appropriately respond to requests from external stakeholders for information disclosure. The content of deliberations by the Sustainability Committee is regularly reported to the Corporate Management Committee and the Board of Directors, and is reflected in the discussions of Mitsui's management policies.

P.7 Sustainability Framework

Building Risk Resilience and Capturing New Growth Opportunities

System

Activity

SDGs: 13.3

Under the Specially Designated Business Management System, business projects with significant environmental implications are screened according to various criteria, including countermeasures against associated environmental loads, and compliance with environmental laws and guidelines, as part of our efforts to minimize risks from the project formation stage. To aid our efforts to optimize projects from objective and specialized perspectives, we have also established the Environmental & Societal Advisory Committee, with members consist of experts and attorneys from outside of the company, to advise the Sustainability Committee.

We analyze potential impacts on the business projects that we promote and operate, with reference to climate change scenarios developed by internationally recognized organizations, such as the International Energy Agency (IEA). Because Mitsui has business operations in many countries and regions worldwide, the profitability and sustainability of our activities can be significantly impacted by climate change-related policies in those countries and regions. Using the global networks that we have built through our business activities over many years, we monitor, in a timely manner, policies in various countries and regions, and trends relating to the stakeholders who influence those policies. Such information is reflected in our decision-making processes.

As a company engaged in diverse business activities, Mitsui continually reviews its portfolios to minimize climate change risks. We also flexibly take up new business challenges made possible by our wide-ranging business development activities, based on long-term perspectives covering at least ten years.

Major Climate Change Risks and Their Implications for Our Activities

We are preparing for anticipated climate-related risks that could affect our business activities, as listed below, by restructuring our portfolios in each area to enhance climate change resilience, by monitoring policies, laws, and regulations in each country and region, and by developing new goods and services that are suitable for a low-carbon society.

Transition risks	Policy and legal risks	Reduction of demand for fossil fuels and impairment of the value of our existing interests due to the shift to low-carbon energy Impact on earnings and our assets due to changes in the energy and power source mix affected by shifts in national and regional policies and the introduction of new laws and regulations, etc.
	Technology risks	Impact on supply and demand in markets for existing commodities and services due to the introduction of new technologies geared toward climate change
	Market risks	Business financing risks due to the adoption of de-carbonization policies by financial institutions and insurance companies
Physical risks		Interruption of the operations of project companies in Australia and the United States, etc., due to cyclones and hurricanes

P.51 Environmental Performance Data

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Environment-Related Business

Policy

Our environmental policy calls for action on global warming and other aspects of climate change issues. Our business activities are directed toward both economic development and response to climate change issues.

Renewable Energy Projects

Activity

SDGs : 7.2

We are developing our renewable energy business and expanding our capacity in this area as part of our electric power generation business. As of March 31, 2019, renewable energy, including hydroelectric power, accounted for approximately 15% of Mitsui's total power generating capacity of 10.4GW, and we are aiming to increase the share held by renewable energy to 30% by 2030.

Type	Project name	Country	Generation capacity/scale	
Solar power generation	Haneda Solar Power Co., Ltd.	Japan	2MW	
	Tottori Yonago Solar Park	Japan	43MW	
	Izumiotu Solar Park	Japan	20MW	
	Tomatoh Abira Solar Park	Japan	111MW	
	Kumamoto Arao Solar Park	Japan	22MW	
	Omuta Miike Port Solar Park	Japan	20MW	
	Hamamatsu Solar Park	Japan	43MW	
	Tahara Solar-Wind Joint Project	Japan	50MW	
	Nishi-Sendai (Rich Solar)	Japan	19MW	
	Brockville Solar	Canada	10MW	
	Beckwith Solar	Canada	10MW	
	Kua Solar	China	13MW	
	METRO Jinan	China	1MW	
	Metro Cixi	China	1MW	
	Bohui-2	China	12MW	
	Bangkhenchai	Thailand	8MW	
	Chiangrai	Thailand	8MW	
	Nakorn	Thailand	6MW	
	Solar thermal power generation	Guzman Energia	Spain	50MW
		Juneda Solar	Spain	1MW
Wind power generation	NS Wind Power Hibiki	Japan	15MW	
	Tahara Solar-Wind Joint Project	Japan	6MW	
	Wind Farm Hamada	Japan	48MW	
	Canunda	Australia	46MW	
	Willogoleche	Australia	97MW	

Type	Project name	Country	Generation capacity/scale
Wind power generation	Norway Wind	Canada	9MW
	SOP Wind	Canada	40MW
	West Cape Wind	Canada	99MW
	Caribou Wind	Canada	99MW
	Harrow Wind	Canada	40MW
	PAR Wind	Canada	49MW
	Plateau Wind	Canada	27MW
	ELSC Wind	Canada	99MW
	Erieau Wind	Canada	99MW
	Cape Scott Wind	Canada	99MW
	Eoliatec del Istmo	Mexico	164MW
	Eoliatec del Pacifico	Mexico	160MW
	Zajackowo Windfarm	Poland	48MW
Los Hercules	Argentina	97MW	
Biomass power generation	Green Power Ichihara	Japan	50MW
	Tomakomai Biomass Power Generation Co., Ltd.	Japan	6MW
	Hokkaido Biomass Energy Co., Ltd.	Japan	2MW
Run-of-river hydroelectric power generation	Energia Sustentavel do Brasil	Brazil	3,750MW
	Spanish Hydro	Spain	84MW
Hydropower generation	Nam Ngum 2	Laos	615MW
	Xayaburi	Laos	1,285MW
Geothermal power generation	Iwate Geothermal Power Co., Ltd.	Japan	7MW

Modal Shift

Activity

SDGs : 3.9, 11.6, 13.3

In addition to the railway leasing business that we have been engaging in over many years, we have also been actively launching and operating various railway projects, thereby developing and improving social infrastructure while promoting modal shifts to contribute to green logistics. Of the rail networks in whose operation Mitsui was participating as of March 31, 2019, the freight railroad network had a total route length of 10,700 kilometers, and the passenger network had a total route length of 1,922 kilometers.

Business investment (Company name)	Main business	Country	Quantitative effects/project size
MRC (Mitsui Rail Capital, LLC)	Freight wagon leasing business	U.S.	Four global bases
MRC-LA (Mitsui Rail Capital Participações)	Freight wagon leasing business	Brazil	(US, Brazil, Europe, Russia)
MRCE (Mitsui Rail Capital Europe B.V.)	Locomotive leasing business	Europe	Freight wagons: approx. 15,000
MRC1520 (MRC1520 LLC)	Freight wagon leasing business	Russia	Locomotives: approx. 340

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Business investment (Company name)	Main business	Country	Quantitative effects/project size
VLI S.A.	Freight transportation business	Brazil	Operating a railway network of approx. 10,700 km, and port terminals
SuperVia (Supervia Concessionária de Transporte Ferroviário S.A)	Passenger railway transportation business Rio de Janeiro suburban railway)	Brazil	Transportation record: Approx. 550,000 passengers per day (December 2018)
Carioca (Concessionária do VLT Carioca S.A)	Passenger railway transportation business (Rio de Janeiro Light Rail Train)	Brazil	Transportation record: Approx. 80,000 passengers per day (December 2018)
Via Quatro (Concessionária da Linha 4 do Metrô de São Paulo S.A.)	Passenger railway transportation business (São Paulo metro line no. 4)	Brazil	Transportation record: Approx. 710,000 passengers per day (December 2018)
Abellio Transport Group Ltd.	Passenger railway transportation business (East Anglia)	U.K.	Transportation record: Approx. 350,000 passengers per day (December 2018)
	Passenger railway transportation business (West Midlands)		Transportation record: Approx. 200,000 passengers per day (December 2018)
Car Club Private Ltd.	Car sharing business	Singapore	Fleet of cars: Approx. 230

Other Business Initiatives for Responding to Climate Change Issues

Activity

SDGs : 7.1, 7.2, 7.3, 7.a, 9.4, 11.6, 11.7, 15.2

In response to climate change issues, we are also actively engaging in various other business initiatives that could lead to improvement in energy consumption efficiency, such as the mini-grid business for stably supplying electric power using renewable energy, and the reduction of CO₂ emissions.

Business	Description
Solar power generation monitoring service	Mitsui Knowledge Industry Co., a consolidated subsidiary, offers cloud-based remote monitoring services to check the operation status of solar power generation facilities and detect any irregular behavior or malfunction.
Key parts for wind-power equipment	Through our investment and participation in the Spanish company GRI Renewable Industries, the biggest wind-power flange manufacturer in the world, we are supplying major wind-power generation equipment manufacturers with the steel towers used to support wind turbines, and large-scale flanges which are key components of those towers.
Flare gas reduction	Mitsui is implementing a project to reduce flare gas emissions in the LNG business in which it participates. Through this project, we have modified LNG production equipment to reduce the amount of flare gas produced during LNG production.
Demonstration project for oxyfuel and CCS technologies	Mitsui participated in the Callide Oxyfuel Project, a public-private initiative by Japan and Australia with the objective to realize zero-emission electricity generation at coal-fired power stations. The project uses carbon capture and storage (CCS) technology called oxyfuel technology for recovering CO ₂ from coal-fired power stations and storing it underground. This demonstration project was completed successfully, and we are now exploring the potential for commercial utilization.
Distributed power generation	Through our equity participation in OMC Power, a leading company in the mini-grid business, we are contributing to the stable supply of electric power in un-electrified regions in India, primarily using renewable energy, thereby reducing CO ₂ emissions.
	Through our equity participation in the solar home system business of M-KOPA Solar, we have reduced the use of kerosene, which is a fossil fuel, by supplying electric power to un-electrified regions in Africa, contributing to the mitigation of the environmental load.
	Through our equity participation in Ecogen Brasil Soluções Energéticas, a specialist provider of energy services in Brazil, we are providing distributed power sources and energy management services to commercial and industrial power users.

Distributed power generation	We are expanding our distributed solar power development activities and promoting next-generation energy management services using storage batteries, especially in the United States.
Electric power system control solutions	Through our investment participation in PXiSE Energy Solutions which provides software used to control storage batteries and electric power systems, we are maximizing power supply ratio, including those based on solar and wind energy and other renewable energy, thereby ensuring the stable and efficient supply of energy.
Smart cities	We are implementing an energy-efficient smart city project in Malaysia.
Shinbashi Tamura-cho district redevelopment	Our subsidiary Mitsui & Co. Real Estate is participating in the Shinbashi Tamura-cho district redevelopment project. Innovative technologies planned for introduction include the installation of solar panels, rooftop greening, and the use of paving materials designed to reduce heat absorption.
Cloud-based energy conservation services	Our subsidiary Mitsui Knowledge Industry Co. has been providing cloud-based energy management systems, including automated remote control of air conditioning systems through utilization of IT, mainly to commercial facilities (introduced at 610 locations in Japan).
Air conditioning remote monitoring and control services	Through Air as a Service (AaaS), which we established jointly with Daikin Air Techno, we provide remote management of air conditioning, realizing an approximately 20% reduction in electric power consumption (the reduction varies depending on the type of building).
Industrial data management	Through the U.S. company OSIsoft, which develops and sells IoT data management software to industrial users, we are supporting the improvement of energy efficiency by visualizing facility operating data in a wide range of industries, including electric power and oil & gas.
Introduction of BEMS	In Bussan Building (a rental office building in Nishi-Shimbashi, Minato-ku, Tokyo) owned by our subsidiary Mitsui & Co. Real Estate we have improved energy conservation performance by installing insulation in exterior walls by using double-glazing and introducing building energy management system (BEMS) technology to realize a system for controlling the electric power used for air conditioning, lighting, and other purposes and visualizing the energy consumption.
Local energy production for local consumption	In November 2017, we concluded an agreement with Arao City and Global Engineering Co. (GL) concerning urban development, with particular emphasis on the effective utilization of district energy systems. In December 2017, we established Ariake Energy Co. as a 50-50 joint venture with GL. In May 2018, Ariake Energy completed its registration as a retail electric power supplier and began to retail electric power to public facilities and local businesses in Arao City from September 2018.
Automotive parts (multi-material products) with enhanced environmental performance	Through our equity participation in the Spanish company Gestamp Automoción, we are supplying, on a global scale, automotive parts that can contribute to reducing fuel consumption through vehicle weight reduction.
	Through our equity participation in Mitsui Prime Advanced Composites Europe B.V., we are supplying European customers with PP compounds for use in bumpers and other parts, thereby contributing to vehicle weight reduction.
Supply of parts for electric vehicles (EVs)	We are developing an integrated business for EVs, encompassing all stages from the handling and processing of electrical steel sheet for use in motors, to the manufacture and sales of motor cores and motors.
Electric power services using electric vehicles (EVs)	Through our equity participation in The Mobility House, we are developing an innovative business model in which EV batteries are used to stabilize the power transmission grid, providing an additional source of income for EV owners.
Secondary battery materials	We have built a stable production and supply platform for secondary battery materials, especially for lithium-ion batteries.
Battery systems	Equity participation in French company Forsee Power, which manufactures and sells battery packs
Development and production of electric and fuel cell-powered buses	Through our equity participation in Portuguese electric bus manufacturer CaetanoBus, we are promoting the development and production of electrical and fuel cell-powered buses that have a reduced environmental load.
Tanks for natural gas- and fuel cell-powered automobiles	We are engaged in the importation and sales of vehicle tanks for natural gas and fuel cell-powered vehicles, tanks for compressed hydrogen transport vehicles, and accumulators for compressed hydrogen stations.
Hydrogen supply chain	We are promoting an international hydrogen supply chain on a trial basis in partnership with Chiyoda Corporation, Mitsubishi Corporation, and NYK Line. In 2020, hydrogen sourced in Brunei will be shipped to Japan in liquid form under normal temperature and pressure conditions, which will then be returned to gaseous form at a coastal location in Kawasaki City, from where a maximum of 210 tons per year (sufficient to fill 40,000 fuel cell vehicles) will be supplied to the users.

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Business	Description
Marine transportation matching platform	We are contributing to energy conservation and the reduction of GHG emissions and ballast voyages through efficient vessel deployment made possible by maruFreight platform that optimally matches tramp vessels with bulk cargoes worldwide.
Engineering services	We are investing and participating in AZAPA with the aim of exploring initiatives leading to the provision of the functions needed by Japanese manufacturing industries in new fields of technology, such as EVs and autonomous driving.
Fuel efficiency improvement	In addition to the sale, ownership, and operation of highly fuel-efficient eco-ships, we are also supporting the development and introduction of fuel-efficient aircraft and engines.
Development of microbial gas fermentation technology	Through our equity participation in LanzaTech, which is developing technology to produce fuels and chemicals through the microbial fermentation of CO, CO ₂ , and other gases, we are building global business that will contribute to the reduction of GHG emissions and the creation of a circular economy. From May 2018, a fuel ethanol plant utilizing technology of LanzaTech commenced commercial operations in Hebei Province, China, using waste gas from steel works as its raw material.
Green chemicals	We are developing green chemicals business in the field of oleochemicals, using natural fats and oils as raw materials.
Solar marine salt production	Through Shark Bay Salt Pty., we own and operate two salt fields at Shark Bay and Onslow in Australia. Over a period of 2-3 years, they produce solar marine salt from water taken from the nearby ocean, using the natural power of the sun and wind, with almost zero emission of CO ₂ .
Carbon credits	Through our equity participation in the Jirau hydropower project in northern Brazil, we have acquired emission rights for 6 million tons of CO ₂ per year. We have completed registration of a J-Credit project involving the installation of a biomass cogeneration system by Konan Utility Co. (Kobe City, Hyogo Prefecture). Over an eight-year period starting in 2020, we will acquire J-Credits for 36,000 tons of CO ₂ per year. We will also create and sell J-Credits procured through the installation of energy-efficient equipment and other activities. We are working with the JCM bilateral credit mechanism to implement a Cambodian REDD+ project (a mechanism to provide economic incentives, including carbon credits, for a reduction in GHG emissions achieved through initiatives to prevent forest depletion and deterioration in developing countries). Invests in New Forests Pty. which maximizes the value of its sustainable forestry asset through a combination of timber harvest and carbon-offset sales, which as a result contributes to the prevention of global warming.
Solar power funds	Our subsidiary Mitsui & Co. Alternative Investments is contributing to the nationwide spread of solar power through providing investment funds focusing on solar power to Japanese investors.

Mitsui's Forests Accumulate and Absorb 560,000 tons of Carbon Dioxide Annually

It is estimated that Mitsui's Forests currently accumulate and absorb approximately 560,000 tons* of carbon dioxide per year. We contribute to the mitigation of climate change risk through sustainable forest management.

*This estimation is based on "IPCC Guideline for National Greenhouse Gas Inventories" Tier 1.



Our Stories: Create an eco-friendly society

P.27 Aiming to Establish a Low-Carbon Society, and Using New Technology to Blaze a Trail to the Future

SDGs: 3.9, 7.1, 7.2, 7.b, 9.4, 11.6, 13.2



Responding to Water Resource Problems



Reflecting the growing interest from a global perspective in the water-related problems, Mitsui & Co. is engaging in a water project which promotes the conservation and the sustainable use of water resources. In addition, we conduct investigations with experts for new business investment projects that are likely to have a significant impact on the environment. For risk assessments in water-stressed areas, in particular, we use the portal site Aqueduct from the World Resource Institute (WRI) to monitor and analyze water risks, not only for new business but also for our existing business, with the aim of reducing water stress.

Water Supply Business in Thailand—Ensuring a Reliable Supply of Safe Water to Over One Million People

Activity

SDGs: 6.1

Mitsui is participating in a water supply business to serve the northern and western suburbs of Bangkok through the company TTW PCL ("TTW"), in which Mitsui invested jointly with the CH Karnchang Group, a major Thai construction firm. Using water taken from the Tha Chin River and the Chao Phraya River, TTW's water purification plants have total capacity for the production of approximately one million cubic meters of clean water per day, and reliably supply safe water to over one million people.



TTW's water purification plant

Contribution to Safeguarding the Water Supply and Preventing Floods through Mitsui's Forests SDGs: 15.1

Approximately 130 km² (13,000 hectares) of Mitsui's Forests (74 locations in Japan, approx. 44,000 hectares in total) are officially designated as Water Conservation and Water Safety Forests, important for safeguarding the water supply and preventing floods and landslides. Leaf soil reduces the occurrence of floods by storing rainwater, and also plays a role in saving water resources, purifying water, and regulating water volume.



Tashiro forests designated as water conservation and water safety forests