# SAPP\_RO

## Sapporo Climate Change Action Guidebook

2024

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August 2024 City of Sapporo

View of Maruyama and downtown Sapporo from Asahiyama Park Observatory

#### What is Climate Change?

In recent years, disasters caused by climate change have been occurring all over the world, including excessively hot days, strong typhoons, and both heavy rainfall and droughts.

Global warming is believed to be the cause of this climate change. The earth we live on today is warmer than it has been in the past 1,400 years, and it is believed that global temperatures will rise even more in the future, which will affect our lives more severely.



#### What will it take to prevent temperature from rising?

The increase in average global temperature must be limited to 1.5°C compared to pre-industrial levels in order to minimize future damage caused by climate change.

Therefore

# → Global greenhouse gas emission must be net zero by 2050.

However, if temperatures continue to increase at the current pace, they are estimated to reach 1.5°C by as early as 2030. Our efforts leading up to 2030 will determine the future.

# Sapporo's annual average temperature has been increasing at a rate of about 2.5°C per 100 years.



# What will happen at the end of the 21st century if global warming continues at its current rate?



In the Ishikari region, which includes Sapporo, the annual average temperature at the end of the 21st century is estimated to be about **4.9°C** higher than at the end of the 20th century if drastic greenhouse gas reduction measures are not taken (RCP8.5).

### Sapporo City's Target



#### Target for 2030: Reduce greenhouse gas emissions by 55% as compared to 2016 levels (or by 59% of 2013 levels)

Sapporo emitted over 10 million tons of greenhouse gases in 2021. This is equivalent to the amount absorbed annually through forestation and other efforts in Hokkaido.

Although emissions have been gradually decreasing since peaking in 2012, it is necessary to promote the effective use of energy, shift to renewable energy, and increase the pace of emission reductions to reach our target.



Amount of greenhouse gases absorbed through forestation and other efforts

in Hokkaido



\*Set Target in Sapporo Climate Action Plan (March, 2021)

Sapporo greenhouse gas emissions

To achieve the 2030 target, we have set five measures, **Thorough Energy Conservation Measures** Expanding the Introduction of Renewable Energies

Resource Recycling and Carbon Sink Measures Lifestyle Changes and Technological Innovation, and set objective **Decarbonizing Transportation** 

target values such as target reduction amounts of greenhouse gases and performance indicators for each measure. Hot water

Heating

#### **Thorough Energy Conservation Measures**

Sapporo is located in a snowy and cold region, so energy consumption due to heating in winter is higher than in other regions.

Accordingly, efforts involving improving thermal insulation of houses and buildings and switching to high-efficiency heating and hot water supply equipment are particularly effective in reducing greenhouse gas emissions.



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#### Expanding the Introduction of **Renewable Energies**

Sapporo is promoting renewable energy power generation facilities, with a focus on roof-mounted solar power generation, which can be widely implemented easily even in a large city. However, it is difficult for Sapporo, which consumes a large amount of electricity, to cover all of its electricity consumption with renewable energy generated within the city.



Therefore, we will promote increased renewable energy power usage by utilizing Hokkaido's abundant renewable energy resources.

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#### **Decarbonizing Transportation**



Sapporo is working to promote the spread of next-generation vehicles in order to reduce  $CO_2$  emissions from automobiles. In particular, the city is focusing on the spread of FCVs and EVs, which do not emit  $CO_2$  when driving.

Percentage of next-generation vehicles among vehicles owned in Sapporo

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# Resource Recycling and Carbon Sink Measures

Not only can we make effective use of food resources by purchasing only the amount of food we need, but we can also reduce the amount of fuel used to transport leftovers and the amount of greenhouse gases generated when disposing of leftovers.

It is also necessary to both reduce greenhouse gas emissions to the maximum extent possible and maintain the absorption of greenhouse gases by forests in order to achieve zero carbon emissions.

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| 438,000t                               |
|--|
|  |
| 92,000t                                |
| Amount of garbage burned<br>in Sapporo |
| 650ha<br>(2016)                        |
|  |
|  |



a of forests under development

### Lifestyle Changes and Technological Innovation

Sapporo provides a wide range of opportunities for its citizens and businesses to think about and discuss lifestyle habits and other aspects of a decarbonized society.

In particular, we place emphasis on fostering young people who will play a central role in Sapporo's environmental preservation activities in the future.

In addition, we will support businesses in the city in their development of technologies in the environment- and energy-related fields, which are of great interest to companies in terms of strengthening their management foundations and improving their competitiveness. We will create an environment conducive to the expansion of business in these fields.

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### **Thorough Energy Conservation Measures**

#### Energy Conservation at City-Owned Facilities City of Sapporo

Sapporo Animal Welfare & Management Center and Chuo Ward Office Complex have received "ZEB Ready" certification for their energy-saving performance (energy consumption reduced by 50% or more compared to conventional buildings), and are promoting ZEBs from the time of construction.

In addition, along with facility renovations, we are working on converting lighting and streetlights to LEDs.

This is the first city-owned facility in Sapporo to receive "ZEB Ready" certification!



### What are ZEHs and ZEBs?

#### **Design Support for ZEBs and ZEH-Ms**

We provide a fixed amount of support for additional design costs required for the construction of energy-efficient buildings and condominiums such as ZEBs and ZEH-Ms (net zero energy

condominiums).





**Businesses** 

\*Scan the QR code for details on the design support for ZEBs and ZEH-Ms.

#### ZEB Seminar/ Utility Cost Visualization Tool

We hold an online seminar to help building contractors in the city acquire new skills.

In addition, we are creating a tool to "visualize" the approximate annual utility costs for buildings based on their energy-saving calculation results.





**Businesses** 

\*Scan the QR code for details on the ZEB Seminar. Scan the QR code for details on the Utility Cost Visualization Tool

These are abbreviations for **Net Zero Energy House** and **Net Zero Energy Building**. In addition to improving the thermal insulation and energy-saving efficiency of a house/building, these generate energy by means of solar power generation, etc., thereby reducing the annual energy consumption balance to net zero.



#### **CASBEE Sapporo**

#### Citizens/ Businesses

In order to promote the spread of environmentally friendly buildings, we publish the environmental performance of buildings on our website under the Sapporo City Building Environmental Consideration System (CASBEE Sapporo).



for details on the

CASBEE Sapporo.



★★★★ S …大変優れている
 ★★★☆ A …大変良い
 ★★☆☆ B+…良い
 ★☆☆☆ B+…やや劣る
 ☆☆☆☆ C …劣る

#### Environmental Conservation Action Plan Vehicle Use Management Plan

Businesses

In accordance with the Ordinance on Securing a Living Environment in Sapporo, businesses above a certain size in Sapporo are required to develop their own plans to work on reducing greenhouse gas emissions, etc., and to report on the status of their implementation.



\*Scan the QR code

for details on the

Formulation Guide

The "Guide to Planning," which summarizes the procedures for formulating an action plan, also includes best practices from businesses in the city.

## Installation of Power Visualization Equipment City of Sapporo at City-Owned Facilities

In order to reduce the power consumption of city-owned facilities, we have installed power visualization equipment in 219 facilities, such as ward offices, schools, and sports and cultural facilities.



#### Downtown Sapporo E! Urban Development Promotion Program

This is a system which involves consultations between the City of Sapporo and businesses at the early stages of development plans such as new construction or reconstruction of buildings in downtown Sapporo in order to induce initiatives that lead to "decarbonization," "strengthening," and "improving comfort" downtown, as well as to report the results such as energy consumption after the buildings start to be used.



Businesses

\*Scan the QR code for details on the Downtown Sapporo E! Urban Development Promotion Program.

We support initiatives that have a significant effect on decarbonization by offering deregulation of the floor-area ratio and other incentives.

#### Zero Carbon Promotion Building

As a measure to attract companies, the prefecture offers preferential treatment for businesses that move their headquarters from outside Hokkaido to a "Zero Carbon Promotion Building", for example by subsidizing 100% of their rent for the first two years.

A "Zero Carbon Promotion Building" is a building that has been certified by the city of Sapporo as having met particular criteria, which include being highly evaluated in discussions about decarbonization efforts in the aforementioned "Downtown Sapporo E!Urban Development Program".

#### Role of "Visualization"

The current power consumption can be viewed numerically and graphically using a dedicated machine.

By doing so, this can lead to the efficient operation of facilities and equipment and energy conservation actions such as peak shifts and base cuts.



Businesses





\*Scan the QR code for details on the Zero Carbon Promotion Building. Hear Hear

\*Scan the QR code for details on the Subsidy Program for Promoting Headquarters and Headquarters Function Relocation.

## Promoting Conversion of Heat Sources for Heating and Hot Water Units

Citizens

We are working to raise awareness and provide support for the conversion from kerosene based heating and hot water supply units, which are widely used in the city, to energy-efficient units that use electricity and gas, which emit less  $CO_2$ .



#### Small- and Medium-Sized Enterprise Loan Program Businesses

Source:(Ministry of Environment)survey on the Actual Condition of Carbon Dioxide

Emission from Residential Sector in EY2020(Final Figures)

We provide loans to small- and medium-sized enterprises that introduce renewable energy or energy-saving equipment, next-generation vehicles, etc.

\*Although this is listed as an energy conservation measure, it also contributes to the introduction of renewable energy and the decarbonization of transportation. \*Scan the QR code for details on the Small- and Medium-sized Enterprise Loar Program.



#### Sapporo Housing Eco-Reform Subsidy Program Citizens

We are subsidizing part of the renovation costs for Sapporo citizens who carry out energy-saving renovations and barrier-free renovations contracted by licensed construction companies with main offices in Sapporo.



\*Scan the QR code for details on the Sapporo Housing Eco-Reform Subsidy Program.

Citizens

#### Promoting Sapporo Next-Generation Housing

The Sapporo Next-Generation Housing Standards are unique standards established by Sapporo for highly insulated and airtight housing. We promote the spread of such housing through our certification and subsidy programs.





\*Scan the QR code for details on Sapporo Next-Generation Housing.

#### Subsidy for Creating Energy-Saving and Carbon-neutral Model Businesses in the Manufacturing Industry

The program provides subsidies to small and medium-sized manufacturing businesses in Sapporo to cover part of the costs associated with introducing advanced equipment and improving equipment operations for the purposes of energy conservation and decarbonization.



**Businesses** 

The aim is to create model initiatives to promote energy conservation and decarbonization in manufacturing factories and other facilities that consume a lot of energy, and to spread these initiatives to small and medium-sized manufacturing businesses in the city. \*Scan the QR code for details on the Subsidy for Creating Energy-Saving and Carbon-neutral Model Businesses in the Manufacturing Industry.

## Installation of Solar Power Generation Equipment City of Sapporo at City-Owned Facilities and on Unused land

We have installed solar power generation equipment that can also be used as a power source for disaster management in 212 facilities such as municipal schools.

In the future, we plan to introduce a "PPA model" in which the roofs of city-owned facilities and unused land are rented to businesses, who install solar power generation equipment free of charge. We will then pay those businesses for the electricity consumed.

In addition, in order to promote the further expansion of solar power generation equipment at city-owned facilities, we are currently considering various other installation methods, such as through the use of wall and land space.

## Introduction of Environmentally Friendly Contracts City of Sapporo to City-Owned Facilities

The "Environmental Consideration Guidelines for the Procurement of Electricity in Sapporo" require that all electricity procurement contracts made by the City of Sapporo be evaluated against the "Environmental Consideration Evaluation Criteria", which specifies the environmental considerations to be taken by retail electricity suppliers in their electricity supply operations; meeting this requirement is essential for eligibility to participate in bidding.

#### 100% Renewable Electricity for City-Owned Facilities

#### City of Sapporo

We are promoting renewable electricity to decarbonize city-owned facilities. We began using 100% renewable electricity at the Sapporo Clock Tower in April 2021, at the City Hall Main Building in October 2022, and at the Sapporo Ekimae-dori Underground Walkway in August 2023.

Sapporo Sosei Square, which houses the Sapporo Community Plaza, began using carbon-offset electricity and heating in July 2024, leading to decarbonization. This is the first carbon offset initiative in Hokkaido to incorporate heat from district heating.



By switching to 100% renewable electricity, we expect to reduce  $CO_2$  emissions by approximately 1,500 tons per year.

#### Zero Carbon Drive with +EV

In addition, an electric vehicle (EV) was used for the first time as an official government vehicle of the Sapporo City Hall Main Building, putting Zero Carbon Drive\* into practice.

\*Zero Carbon Drive is an initiative to eliminate CO<sub>2</sub> emissions during driving, including during power generation, by charging EVs with 100% renewable electricity.



City of Sappord

#### Expanding the Adoption of Renewable Electricity Through Collaboration within Hokkaido

We are making efforts to create a mechanism for municipal facilities and companies in the city to be able to use the surplus renewable energy generated in Hokkaido that cannot be consumed locally, as well as the renewable energy generated by city-owned facilities in Sapporo such as incineration plants.

To promote this initiative, in February 2024, Wakkanai City, Hokkaido Electric Power Co., Inc., and Sapporo City signed a collaboration agreement for the "Renewable Energy Power Introduction Project in Collaboration with Local Governments in Hokkaido."

As part of this project, an initiative was also started in April of the same year to supply electricity generated at a waste incineration plant in Sapporo to three subway lines, resulting in approximately 70% decarbonization of the electricity used by the subways. This is expected to reduce  $CO_2$  emissions by approximately 45,000 tons per year (equivalent to the amount of  $CO_2$ used by approximately 10,000 average households).

In cooperation with local governments in Hokkaido, we will promote the local production and local consumption of renewable energy throughout Hokkaido and contribute to the realization of Zero Carbon Hokkaido.



### **Expanding the Introduction of Renewable Energies**

## SAPP\_RO Renewable Energy Joint Purchase Project

Businesses

We utilize reverse auctions, which allow retail electricity suppliers to bid again while viewing offers made by other companies, and also allow for multiple buyers to bid as a group to purchase renewable energy.

The price of renewable energy electricity tends to increase as its environmental value is added, but the joint purchasing project aims to minimize price increases.





#### Sapporo Renewable Electricity Certification and Publication Program Citizens/ Businesses

We publicize on our website the renewable electricity plans provided by retail electricity suppliers that have agreed to the system.



In addition, issue certificates to the businesses and organizations in Sapporo that have switched to the renewable electricity plans provided by the participating electricity retailers in recognition of their active work on the use of renewable energy power. At the same time, we will publish examples of their initiatives on our website upon request.

\*Scan the QR code for details on the Sapporo Renewable Electricity Certification and Publication Program

## Renewable Energy and Energy-Saving Equipment Citizens

When installing subsidized equipment such as solar power generation equipment and stationary storage batteries in your home, we subsidize part of the installation cost.



#### Self-Consumption-Type Solar Power Generation Equipment Installation Subsidy Program Businesses/Condominium Management Associations

We subsidize part of the installation costs when installing solar power generation equipment and stationary storage batteries in company buildings and condominiums.



Citizens

## Renewable Energy Equipment Installation Zero Initial Cost Subsidy Program

We subsidize part of the installation cost when installing solar power generation equipment and stationary storage batteries in your home using a lease contract or PPA (Power Purchase Agreement).



\*Subsidies are applied for by business operators and are returned to citizens through the applicant business operators.

#### Cooperative Buying of Solar Power Generation Equipment and Storage Battery Systems Citizens/ Businesses

In cooperation with the Hokkaido Government, we are implementing a cooperative buying project for solar power generation equipment and stationary storage batteries.



#### Sapporo Eco-Energy Club

The  $CO_2$  emissions reduction effect of equipment installed using the Renewable Energy and Energy-Saving Equipment Installation Subsidy Program is calculated, and converted to credits under the "J-Credit" system. The sales proceeds will be used for projects related to climate change measures.





#### Model Area for Hydrogen Utilization Citizens/ Businesses/ City of Sapporo

We will proceed with the development of a "disaster-resistant and environmentally friendly model area" that utilizes hydrogen energy in downtown Sapporo (city-owned land in Odori Higashi 5-chome, Chuo Ward).

The facility group in urban centers, including the model area of hydrogen utilization, has been selected as a Decarbonization Leading Area. (See P16 for details on the Decarbonization Leading Area.)

#### Stationary hydrogen station

We will proceed with the development of the first stationary hydrogen station in Hokkaido that can accommodate large vehicles such as fuel cell buses and fuel cell trucks.

In the future, we will conduct a demonstration project for large fuel cell vehicles and promote their introduction to private businesses.

In addition to the stationary hydrogen station, we are planning to develop a customer interaction facility equipped with a fuel cell in the future. Sapporo City currently has one mobile hydrogen station in Toyohira Ward.





We are considering a hydrogen supply chain in which hydrogen produced using surplus electricity from renewable energy sources in Hokkaido is supplied to Sapporo City.

## What is Hydrogen Energy?

Hydrogen energy can be produced domestically and has the following three main features. It is attracting attention as a next-generation energy source. from the perspectives of climate change action and energy security.



during use



Abundant on Earth



Can be stored and transported

By making hydrogen from renewable energy sources, it can be used as an energy source that does not emit CO<sub>2</sub> from production to use.

### **Decarbonizing Transportation**

#### **Using Zero Emission Vehicles for Official Government Vehicles**

#### City of Sapporo

We use fuel cell vehicles (FCVs) and electric vehicles (EVs), which are zero-emission vehicles that do not emit CO<sub>2</sub> while driving, as official vehicles.

➡Used as exhibitions as well as power supply for equipment used at events, etc.

#### ➡Used in regular official duties

In addition, all official government vehicles\* owned by Sapporo will be replaced with next-generation vehicles by FY2030.

\*Excluding special vehicles such as snowplows and fire trucks which are difficult to replace.



ECVs and EVs can also be used as emergency power sources. During the large-scale power outage caused by the Hokkaido Eastern Iburi Earthquake in 2018, Sapporo's official government FCVs were used as power sources for cell phone charging at the Sapporo City Hall Main Building.

#### Support for Introduction of **Zero Emission Vehicles**

#### Citizens/ Businesses

Targeting citizens and businesses in the city, we subsidize part of the cost of installing EVs and FCVs, V2H charging equipment, and basic charging equipment in apartment complexes.



Scan the OB code for details on the subsidy system.

#### **Using Public Transportation** Citizens/ Businesses/ City of Sapporo

Working to build a sustainable public transportation network through appropriate division of roles such as shared buses and on-demand transportation\*, we will work to foster awareness of the use of public transportation.

In addition, we aim to improve the convenience of public transportation by installing elevators in subway and JR stations, promoting the introduction of low-floor tram cars and non-step buses, providing public transportation information using ICT, and linking transportation modes.

\*A shared transportation service based on a reservation system.



Number of next-generation vehicles owned in Sapporo



#### What are **Next-Generation Vehicles?**

zero-emission vehicles such as FCVs and EVs, as well as plug-in hybrid vehicles (PHVs), hybrid vehicles (HVs), natural gas vehicles, and clean diesel vehicles.

#### **Food Waste Prevention**

#### Citizens/ Businesses/City of Sapporo

We promote initiatives to cut food Waste in households, restaurants, and other places.

#### **O**"Cleaning out the fridge on Sundays"

(Check the fridge weekly so you don't forget food left inside)

### **○"25-10 Banquet Rule"**

When attending banquets and other events, enjoy your meal for the first 25 minutes and the last 10 minutes at your seat





#### **Forest Conservation and Development**

City of Sapporo

Since unmanaged forests absorb less  $CO_2$ , we promote forestation by thinning to encourage tree growth, clearing underbrush, as well as planting and growing trees.



#### **Utilization of Hokkaido Wood**

Citizens/ Businesses/City of Sapporo

By using Hokkaido wood as a resource and for energy, we are promoting initiatives that lead to resource recycling, reduction of  $CO_2$  emissions, and economic circulation within the region.

We are promoting the use of timber produced in Hokkaido, for example, for structural and interior materials in public buildings within the city.



Sapporo Animal Welfare & Management Center "Aimaru Sapporo"



Chuo Ward Daycare &Child-rearing Support Center "Cheerful Chuo"

#### **Eco Life Report**

Elementary and junior high school students

We distribute report forms to students of municipal elementary and junior high schools so that they can choose and practice eco-activities at home during their summer and winter vacations. We hope that children will call on others to spread eco-activities in their homes.



#### Environmental Education and Children's Workshops Elementary school students and Youth

For elementary school students attending a Kid's Hall in Sapporo, we hold workshops where each Kid's Hall is connected online, so that children can exchange opinions while having a dialogue about climate change.



#### Bus Rental for Field Trips Elementary and junior high school students

We provide free rental of buses for field trips to environment-related facilities for elementary and junior high schools in Sapporo with the aim of providing them with opportunities for hands-on learning about the environment.



#### Sapporo Children's Environmental Contest Elementary and junior high school students

The purpose of this contest is to present environmental activities that elementary and junior high schools are working on, and to expand the scope of those activities to the other children and even to adults around them.



#### Click-to-Donate Site for Environmental Education Citizen/ Businesses

Donations collected from companies working on environmental conservation are used as a social contribution activity to donate environmental education materials to elementary and junior high schools in Sapporo.



#### Environmental Supplementary Teaching Materials Elementary school students

We have created supplementary teaching materials that allow elementary school students to comprehensively learn about the environment, and distribute them to new first, third, and fifth graders.



#### Sapporo Climate Change Town Meeting

Citizens

We hold workshops that allow participants to network with each other while discussing societal issues, such as climate change, and learning from experts.



#### **Summer Special Exhibition**

We hold exhibitions, educational programs, and forums to encourage citizens to learn and think about climate change, biodiversity losses caused by global warming and other factors, and the impact they are having on creatures in Hokkaido and around the world.

In 2023, the event was held at Maruyama Zoo with the theme "STOP Climate Change - Protecting Animals' Homes."



#### **Visiting Lectures on Demand**

Citizens

City Hall workers hold visiting lectures about climate change issues and SDGs in an easy-to-understand manner.



#### The Environment Square Sapporo

Every year, we hold "The Environment Square Sapporo" as an event where children can enjoy learning about and experiencing environmental issues. Many companies and organizations introduce their initiatives and hold experience corners.



Citizens (especially Children)

In 2023, "The Environment Square Hokkaido 2023" was held to commemorate the G7 Ministers' Meeting on Climate, Energy and Environment in Sapporo.



■ G7札幌 気候・エネルギー・ 環境大臣会合開催記念イベント



#### Sapporo Environment Management System

The City Hall is one of the largest businesses in the city, emitting about 6% of the greenhouse gases in Sapporo.

For that reason, we have been operating the Sapporo City Environmental Management System (EMS), which manages activities that may have an impact on the environment and maintains and operates an organizational structure for continuous improvement based on the PDCA cycle, and is working to reduce environmental impact via energy and resource conservation.



City of Sapporo

\*Scan the QR code for details on the Sapporo EMS Report (2022)

#### **Environmental Report Exhibition**

#### Businesses







#### Sapporo Eco Member Registration System

Businesses that voluntarily implement environmentally friendly initiatives can register as Sapporo Eco Members to showcase their activities to the public.



\*Scan the QR co for details on the Sapporo Eco Member Registration System.

#### Technological Innovation

In addition to supporting the development of technologies in the environment- and energy-related fields by businesses in the city, which are of great interest to companies in terms of strengthening their management foundations and improving their competitiveness, we will also improve the conditions for the emergence of new businesses in these fields.

#### Sapporo Zero Carbon Promotion Network Businesses/ City of Sapporo

This network was launched by the Sapporo Chamber of Commerce and Industry with the aim of strengthening information provision to support the decarbonization of companies in the city and matching among companies in Sapporo to link decarbonization to new business opportunities.

The City of Sapporo and the Sapporo Chamber of Commerce and Industry have jointly created a website that serves as a platform for this network and

disseminates information on the decarbonization measures of the national government and the City of Sapporo.

\*Scan the QR code for details on the Sapporo Zero Carbon Promotion Network



#### Support for Development of New Product & New Technologies Businesses

We are implementing a subsidy system for companies conducting research and developing new products and technologies in environmental fields and other areas that contribute to the promotion of zero carbon.

### **Initiatives for Decarbonization Leading Area**

In November 2022, Sapporo applied for a joint proposal with energy companies, universities, and other organizations, and was selected as a Decarbonization Leading Area\* in recognition of its efforts to promote model initiatives in snowy and cold regions through industry-academia-government collaboration, mainly in urban centers.

\*The Ministry of the Environment plans to select about 100 regions by 2025 to serve as model regions that aim to achieve net zero CO<sub>2</sub> emissions from electricity consumption by 2030.

#### **Co-Sponsers** Hokkaido Gas, Hokkaido Heat Supply Corporation, Hokkaido Electric Power Company, Hokkaido University, Naoastec



| ① Private Facilities in Downtown Sapporo  | <ul> <li>The Downtown Sapporo E! Urban Development Promotion Program (see P6) will provide guidance for energy-saving buildings and energy-creating technologies.</li> <li>Decarbonization of electricity and heat by improving and expanding energy networks utilizing cogeneration systems, etc. and switching the heat source of local heat supply to carbon-neutral gas.</li> </ul> |
|---|---|
| 2 Model Area for Hydrogen Utilization     | (see P 10)  |
| <b>③ Hokkaido University North Campus</b> | <ul> <li>Constructing a carbon-free energy system with BCP functionality by<br/>adopting solar power generation equipment and storage batteries.</li> </ul>   |
| Public Facilities                         | <ul> <li>Conversion of city-owned facilities to ZEBs, installation of solar power generation facilities through various methods including the private sector, and introduction of 100% renewable electricity.</li> <li>Installation of sewage heat-based road heating on transfer routes from the subway, etc.</li> </ul>   |

### **Climate Change Adaptation**

Although it is not easy to determine how each of these weather events is linked to global warming, the risks of climate change are expected to increase further, such as rising mean temperatures, more frequent heavy rainfall, higher risk of heat illnesses, changes in the distribution of plant and animal species, and deterioration in the quality of agricultural products as global warming progresses in the future.

In addition to making every effort to implement mitigation measures to reduce greenhouse gas emissions, it is also important to work on adaptation measures that coordinate nature and human societies with climate change impacts.

# Sectors that are considered to have an impact in Sapporo



Source: Climate Change Adaptation Information Platform (A-PLAT)



#### **Prevent Heat Illnesses**

In order to prevent heat illnesses, it is important to avoid sunlight and heat, and to take appropriate measures such as drinking water and electrolytes. The City of Sapporo operates a unique warning system called the "Sapporo version of special heatstroke alerts". In addition, even if an alert is not issued, when the risk of heatstroke is predicted to be high, the city uses its official LINE account to call for heatstroke prevention.



\*Scan the QR code for details on the alert for citizens for heat illnesses

If there is no nearby environment where you can avoid the heat, you can also use the "cooling shelters" designated by the City of Sapporo.

### Aiming to be "Green Capital SAPP\_RO"



#### 2nd Sapporo City Environmental Master Plan

With an eye on the future vision for 2050 of a sustainable city, "Environmental Capital SAPP\_RO," where the next generation of children can live with smiles on their faces, we have begun public awareness campaigns using the key phrase "Think Green for the Future."



#### Selected as SDGs FutureCity\*1

Sapporo has been recognized for its initiatives such as the creation of a smart city to build a global model of a Green Capital in a cold region, and for holding symposiums in cooperation with the national government and universi-

## SUSTAINABLE G ALS

\*1 Cities and regions selected by the Cabinet Office as those taking leading SDGs initiatives that contribute to regional development.

#### Sapporo Climate Change Action Plan

#### Climate Emergency Declaration

Sapporo declared a state of emergency to encourage each individual citizen to recognize the crisis of climate change, share the need for measures and initiatives, and take action.

#### Hokkaido/Sapporo Declaration to Pave the Way for a Decarbonized Future

Taking advantage of the opportunity of the G7 Climate, Energy and Environment Ministers' Meeting being held in Sapporo, we declared together with Hokkaido that we will not only promote local production and consumption of energy and revitalize the Hokkaido economy through decarbonization, but also contribute to Green Transformation (GX) in Japan and around the world.

## **Contact information for each support system**

Design Support for ZEBs and ZEH-MsBusinessesP5 (Design Support of ZEBs and ZEH-Ms)

Heating and Hot Water Unit Heat Source Conversion Subsidy Program Citizens

P7 (Promoting Conversion of Heat Source for Heating and Hot Water Units)

SAPP\_RO Renewable Energy Joint Purchase Project Businesses P9

Renewable Energy and Energy-Saving Equipment Installation Subsidy Program



Citizens P9

Self-Consumption-Type Solar Power Generation Equipment Installation Subsidy Program

Businesses/ Condominium Management Association P9

Renewable Energy Equipment Installation Zero Initial Cost Subsidy Program Citizens P9

Renewable Electricity Expansion Through Collaboration within Hokkaido

Citizens/ Businesses P9

Environmental Energy Section, Environment Bureau, City of Sapporo TELL 011-211-2872

Environmental Policy Section, Eco-City Promotion Department, Environmental Bureau, City of Sapporo Kita 1 Nishi 2, Chuo-ku, Sapporo 060-8611, Japan

TEL011-211-2877 FAX011-218-5108







Environmental Policy Section, Environment Bureau, City of Sapporo

TEL 011-211-2877

Sapporo Housing Eco-Reform Subsidy Program Citizens P7



 Sapporo Next-Generation Housing Subsidy Program

 Citizens
 P7 (Promoting Sapporo Next-Generation Housing)



Housing Section, Urban Renewal & Development Bureau, City of Sapporo TEL 011-211-2807

Small- and Medium-Sized Enterprise Loan Program Businesses P7



Business and Commerce Support Section, Economic & Tourism Affairs Bureau, City of Sapporo TEL 011-211-2372

Subsidy for Creating Energy-Saving and Carbon-neutral Model Businesses in the Manufacturing Industry Businesses P7



Manufacturing Development and Green Growth Promotion Project Businesses P15 (New product and new technology development support)



Regional Industry Promotion Section, Economic & Tourism Affairs Bureau, City of Sapporo TEL 011-211-2392

