Section 3 Low carbon society and energy conversion

Creative strategy 7 Creative strategy for a low carbon city – creation of an eco-friendly city

Vision for an ideal city 10 years from now

With greenhouse gas emissions from running private cars being reduced, a sustainable compact city with an eco-friendly transportation system is created thanks to urban functions being centered around transportation hubs[32], such as subway stations, and daily-use public transportation convenient for shopping and hospital visits. The eco-friendly city exists in harmony with nature, and abounds in greenery.

Paradigm shift

Changes for the realization of the vision

Creation of an eco-friendly compact city

- ◆ Promotion of the development of an eco-friendly city center
- ◆ Support for the introduction of daily life-related functions around subway stations

Major efforts

7-1. Reconstruction toward a sustainable compact city

Reconstruction toward a low carbon city

- Reviewing of the Sapporo Urban Planning Master Plan[33] and deliberations on the possibility of formulating a plan for creating a low carbon city
- Reviewing of the policy for city redevelopment for reconstruction toward a compact city

Promotion of integrated urban functions in the city center and around subway stations

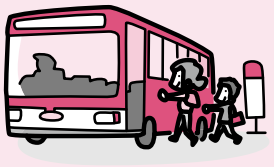
- Reviewing of the plan for city center development
- Improvement of exchange zones (Sapporo Station, Odori, Sosei), and the promotion of city development in the area immediately east of the Sosei River
- Promotion of the focused placement of ward offices and other public facilities around subway stations, and support for the introduction of daily life-related functions
- Promotion of the improvement of the urban area centered on Shiroishi Ward Office, which is directly connected to Shiroishi Subway Station

[32] **Transportation hub:** a place where multiple types of transportation means are connected

[33] **Urban Planning Master Plan:** an overall city plan that sets forth a future vision for an ideal city and the direction city development should take to make the vision a reality as guidelines for city development

7-2. Establishment of an eco-friendly transportation system that supports various activities

Promotion of the use of public transportation



- Promotion of the use of public transportation through the improvement of the convenience of facilities around stations by making them barrier-free
- Raising public awareness of resident-supported public transportation by providing opportunities to learn about public transportation in schools and communities

Establishment of easy-to-use local public transportation systems

- Promotion of efforts to optimize services including the reviewing of route buses to meet local demands and to secure transportation for daily use in collaboration with various entities

Improvement of travelling comfort and the transportation environment in the city center and around subway stations

- Making the streetcar track into a loop route, and deliberations on the possibility of its extension to three areas (city center, east of the Sosei River, Souen)
- Introduction of a system to provide information at streetcar stops on tourism and events in areas along the streetcar track, and the formulation of guidelines to create attractions in areas along the streetcar track to enhance the cityscape
- Promotion of the connection of underground walkways and buildings along the streets above, the construction of aerial corridors and the improvement of private open space areas
- Promotion of comprehensive measures for bicycle parking, including the expansion of bicycle-parking areas to private grounds and the improvement of public bicycle-parking areas as part of redevelopment projects, the reviewing of the Bicycle-parking Installation Ordinance, and the expansion of the areas where the parking of bicycles is prohibited
- Promotion of rules and etiquette for the use of bicycles, raising the awareness of automobile drivers about paying attention to bicycles using roads, and efforts to define the areas where bicycles can be used

7-3. Promotion of the development of a verdant city that coexists with nature

Promotion of biodiversity conservation

- Promotion of biodiversity, and the implementation of surveys and monitoring to clarify the habitat status of wildlife

Promotion of afforestation and green networking

- Promotion of afforestation on private land through redevelopment, the operation of a deregulated land use planning system, and subsidies for tree-planting activities
- Creation of new open spaces in the city center
- Reconstruction and redevelopment of park functions better suited to local characteristics and residents' needs
- Expansion of places for children to play freely (e.g., play parks) using existing parks and public spaces while training volunteers who monitor children as they play

Promotion of forest conservation and land use better suited to the characteristics of urbanization-restricted areas[34)]

- Deliberations on and implementation of forest management techniques corresponding to forest functions and forest categories such as natural or artificial forests

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[34)] **Urbanization-restricted area:** an area where urbanization is restricted to prevent unruly urban development

Creative strategy 8 Creative strategy for next-generation energy – improvement of energy efficiency and stability

Vision for an ideal city 10 years from now

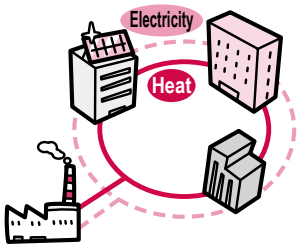
New technologies are actively introduced with the spread of next-generation energy systems[35]. Independent energy networks are also built to support efficient and stable energy supplies. Residents have a heightened awareness of the environment, helping to promote energy saving, energy creation and energy accumulation at home and within companies. A recycling-oriented society is realized thanks to further reduced waste generation and the effective use of the energy generated from refuse incineration.

Paradigm shift

Changes for the realization of the vision

Efficient and stable energy networking

- Promotion of energy networking by area
- Promotion of energy management in the city center



Major efforts

8-1. Promotion of next-generation energy systems

Formulation of an energy policy vision

- Formulation of a future vision and a medium-term basic plan for energy policy

Promotion of advanced systems

- Strengthening of support for the introduction of energy-saving/renewable instruments and the installation of large-scale renewable energy systems such as mega solar power systems
- Promotion of efforts to match business operators who want to install solar power systems on unused land and land owners
- Promotion of the research and spread of Sapporo-style next-generation housing[36] using technology for snowy cold regions and next-generation automobiles
- Support for the installation of cogeneration systems[37] and mixed energy systems that efficiently combine battery and renewable energies

Promotion of the wide-area use of renewable energy

- Support for the introduction of renewable energy in the suburbs of Sapporo, and deliberations on the possibility of wide-area use

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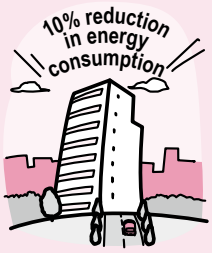
[35] **Next-generation energy system:** a general term for systems that enable the efficient use of energy, including solar power and other renewable energy systems and systems that generate electricity and heat at the same time

[36] **Sapporo-style next-generation housing:** housing that meets the city's own standards for super-insulated houses

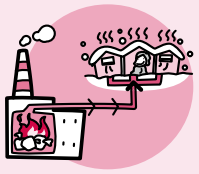
[37] **Cogeneration system:** a system to increase general energy efficiency by using exhaust heat produced at the time of power generation for air conditioning and hot-water supplies

8-2. Independent energy network

Promotion of independent energy networks



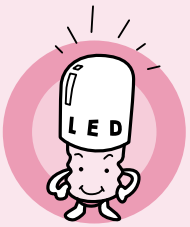
- Deliberations on a future vision of energy measures in the city center
- Improvement of energy supply bases by area and the networking of the supply bases and buildings
- Development of a structure to promote the connection of buildings that consume energy to the networks and the introduction of low carbon systems in the buildings
- Deliberations on the roles and future visions of heat supply businesses[38] with their operators
- Deliberations on and the promotion of efficient and stable energy use capitalizing on existing heat supply networks for city development around Shin Sapporo Subway Station and Makomanai Subway Station



8-3. Promotion of residents/companies' efforts to reduce loads on the environment

Promotion of a shift to an eco-friendly lifestyle

- Active introduction of solar power, LED lightning, dispersed power systems and the like in city-owned facilities
- Promotion of environmental education in schools, the Sapporo Science Center and Maruyama Zoo, and the strengthening of learning functions so that children can consider, learn and act for the environment through hands-on learning
- Promotion of the visualization of energy at home and the introduction of an energy management system in each building
- Encouragement of energy-saving projects, and the promotion of efforts to spread energy-saving know-how obtained from efforts in city-owned facilities to private facilities
- Support for the research and spread of energy management in smart communities and individual city blocks

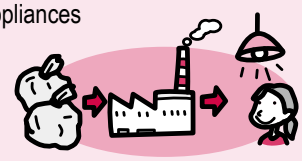


8-4. Creation of a recycling-oriented society

Promotion of waste reduction

- Promotion of the composting of food waste and the visualization of the merits of waste reduction
- Support for and promotion of efficient recycling through collaboration among local business operators including those in shopping districts
- Promotion of the recycling of refuse incineration ash, the effective usage of waste-derived biomass resources and the recycling of useful metal contained in post-consumer small appliances

Promotion of highly efficient energy recovery



- Promotion of waste power generation and heat utilization by introducing a system to efficiently recover energy from refuse incineration at waste disposal plants
- Improvement of collaborative frameworks including efforts to promote wide-area waste disposal with neighboring municipalities

[38] **Heat supply business:** an organization that supplies heat in a certain area