Nagoya City's efforts to achieve a decarbonised society

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Hachimaru

Kei Onoue
Decarbonised Society Promotion Division,
Environment Affairs Bureau,
Nagoya City

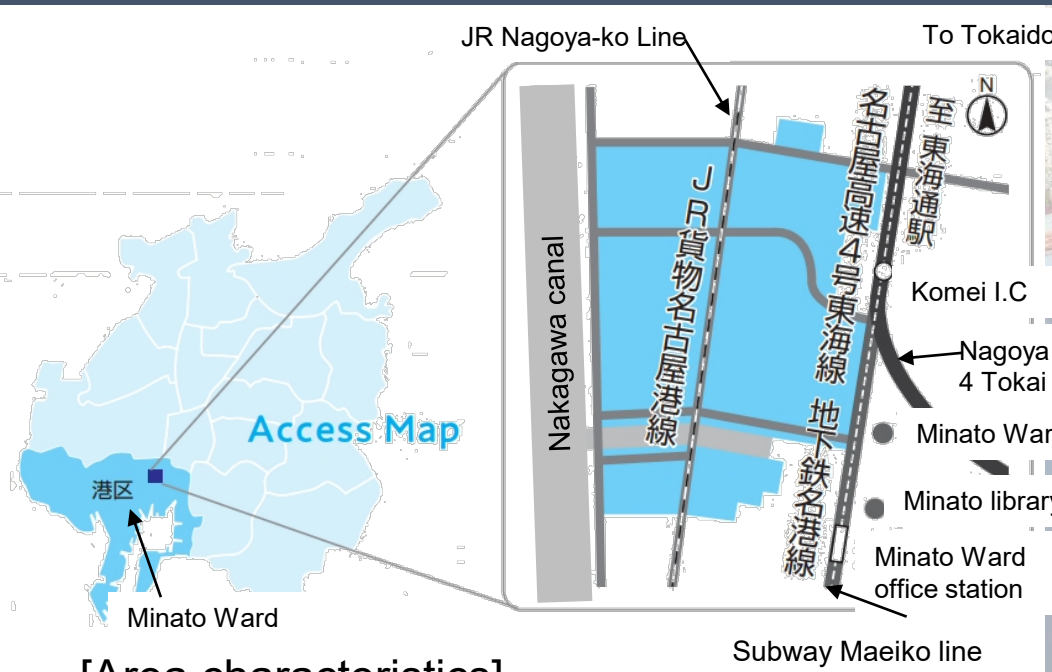
Junchan

Nagoya city

Nagoya

Population: approx. 2.32 million
Area: 326 km2
Climate: Relatively mild. Average humidity in summer exceeds 70%. Cold monsoon winds blow in winter time.

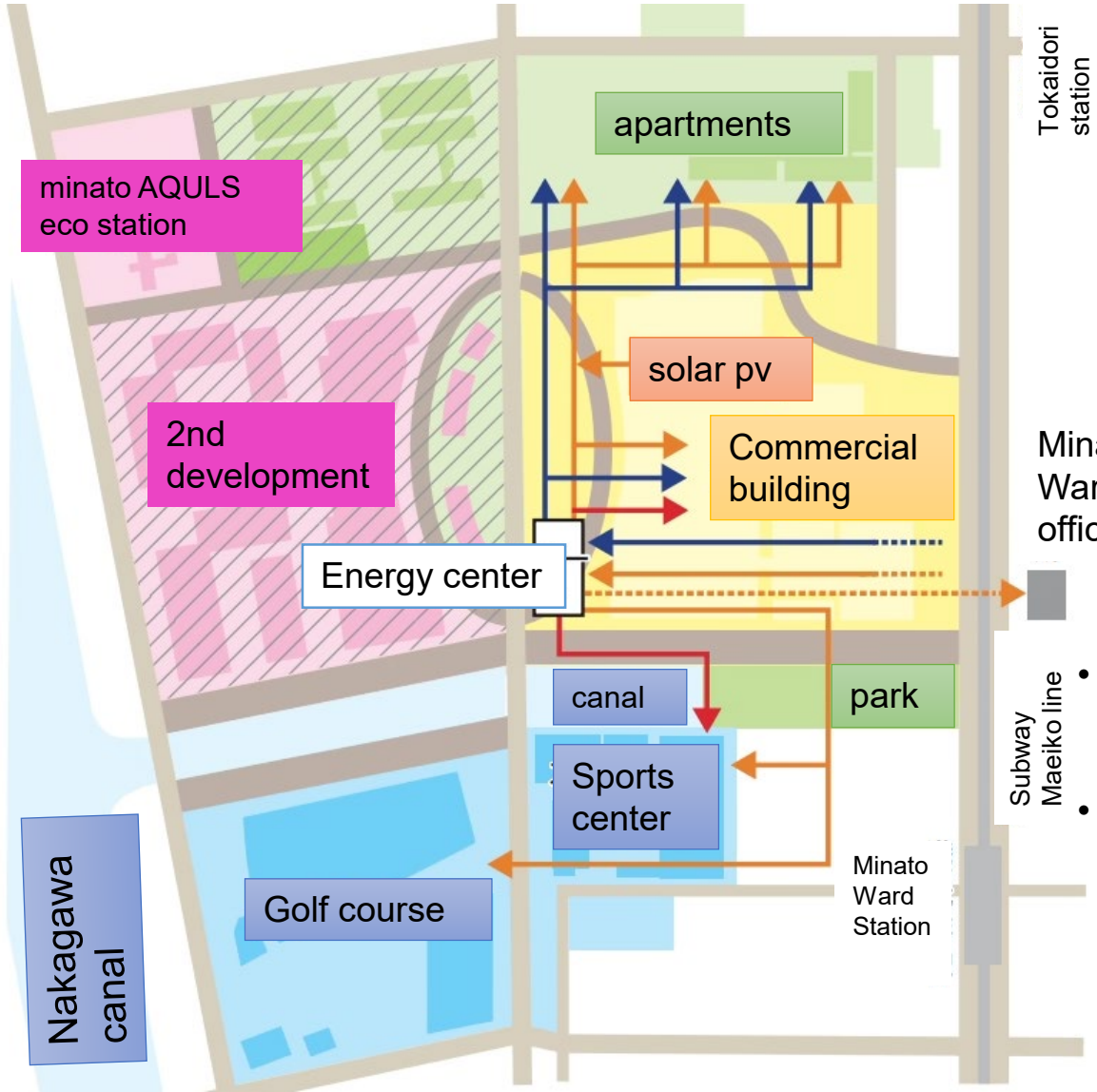
minato AQULS

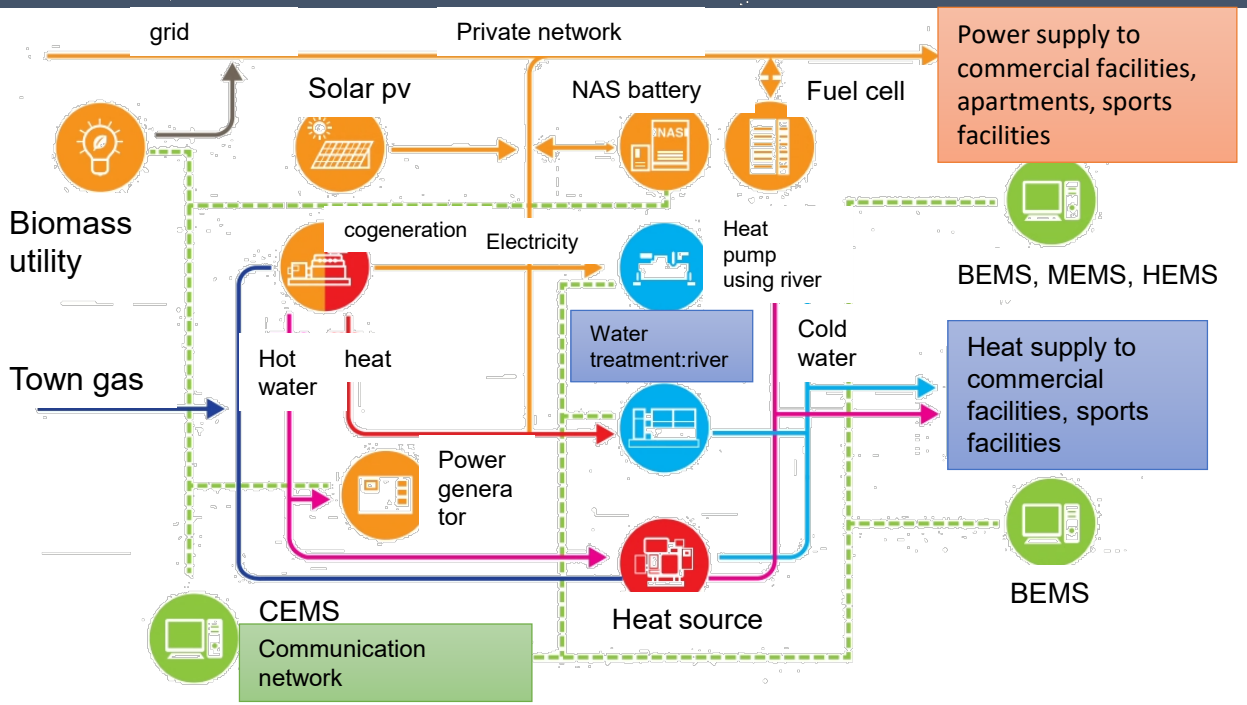


[Area characteristics]

- ○ Redevelopment area of Toho Gas Co.
- ○ Development area of approx. 33 ha
- ○ Close to metro
- ○ Adjacent to the canal

minato AQULS initiative and recognition of low-carbon model districts





- Electricity, heat and information for the entire town is controlled by a centralized energy management system to save energy.
- The minato AQULS contributes to the local community by supplying power to a ward office located nearby in the case of a disaster.

Ceremony recognizing minato AQLUS as a 'low-carbon model district' →

In Feb 2015, the City of Nagoya recognized the "minato AQULS" development project for its efforts to be a 'low carbon model district' for low-carbon lifestyles with citizen and business participation. minato AQULS promotes low-carbon urban development with the aim of reducing CO2 emissions by 60%.

From low carbon to decarbonisation

- The minato AQULS development project aims to realise sustainable regional development and an environmentally harmonised society by introducing advanced low-carbon technologies into urban development. In 2021, the project **enhanced its existing target and announced its aim to decarbonize** in line with the national government's announcement of the new regional decarbonisation strategy.
- The new target for 2030 is for **minato AQULS to transition from a 'low-carbon model district' to a model district for 'decarbonisation' in Nagoya and nationwide,** by implementing new initiatives. This will make minato AQULS a pioneer and model area for realising regional decarbonisation.

Why we chose 'minato AQULS' because…

1. **Diverse urban** functions, such as commerce, sports facilities, training facilities and housing complexes, are concentrated in minato AQULS. Which is why we see it is an ideal model to test **solutions to the city's problems..**
2. Similar redevelopment projects in other core cities of the Chubu region are in progress, making it possible for minato AQULS to serve as a **decarbonisation** model with **high spill-over and diffusion potential in** Nagoya and nationwide.
3. It is a large-scale urban development project with **significant CO2 emission reduction potential.**

A shift from "low-carbon" to "decarbonisation-oriented" urban development

Our proposal **"Creating decarbonised compact city models in redevelopment areas"** (Joint proposal with Toho Gas)

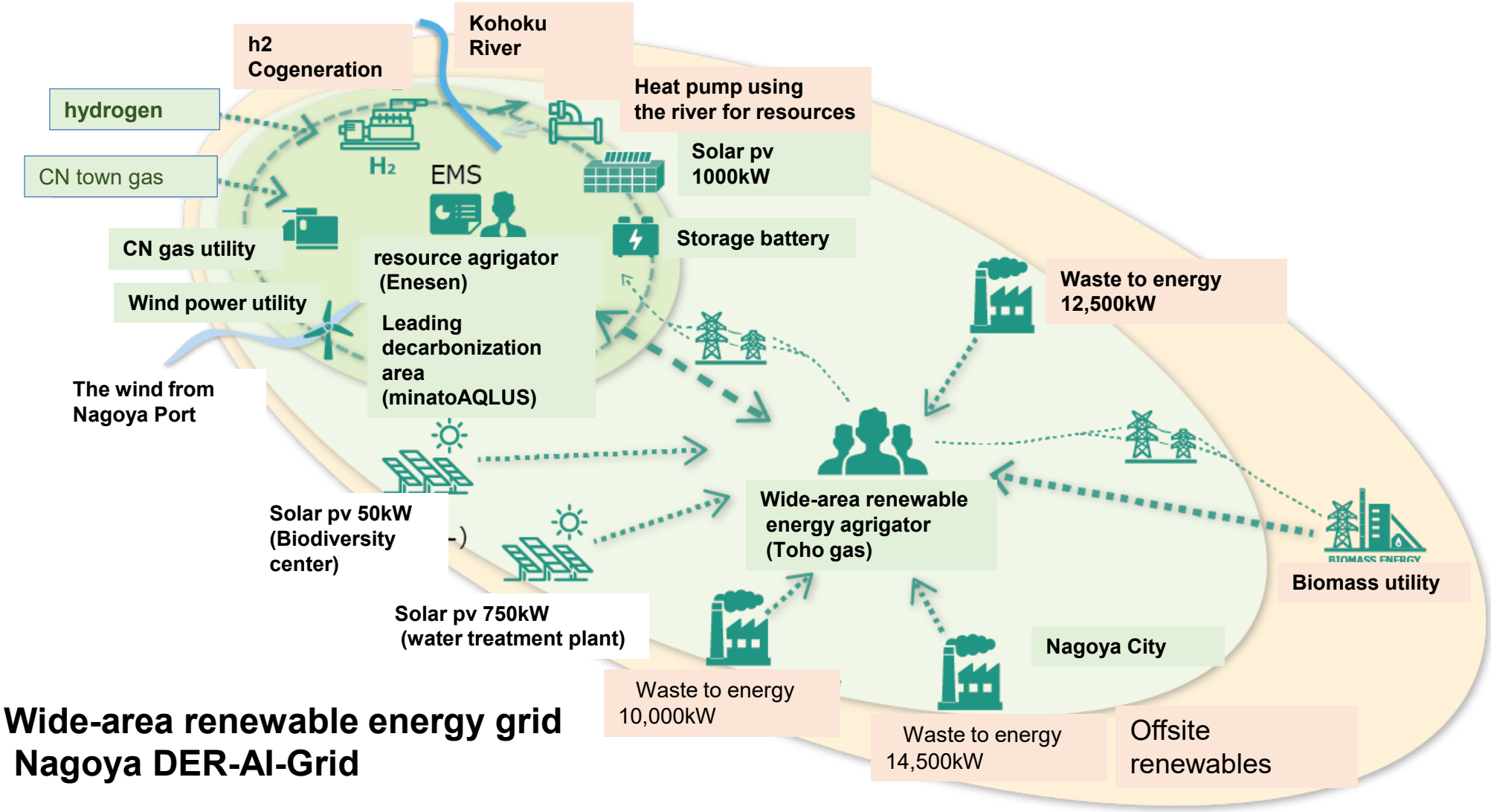
→ was selected by the Ministry of the Environment in April 2022

脱炭素先行地域

April 2022: selected as a leading decarbonization area

Construction of a wide-area renewable energy grid that connects distributed renewable energy resources in and around the city (Nagoya DER-AI-Grid).

A 'wide-area renewable energy grid sourced primarily from photovoltaic power and waste will be built. It will make maximum use of distributed renewable energy resources in and around the city. AI will be used to control and optimize the operation.



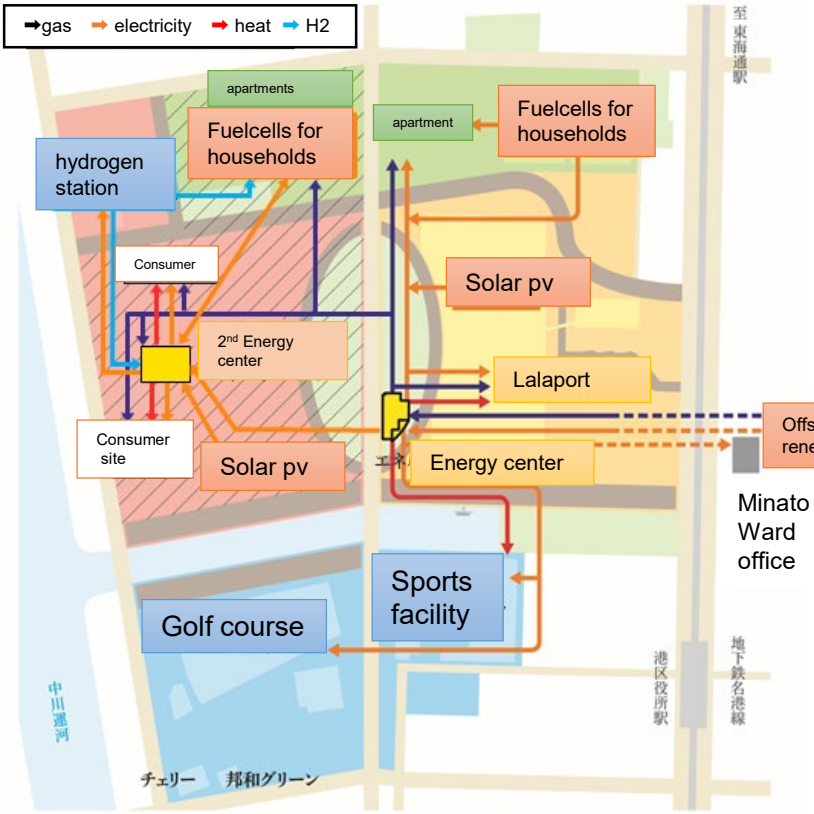
Wide-area renewable energy grid
Nagoya DER-AI-Grid

Smart grid systems with hydrogen and carbon neutral (CN) gas

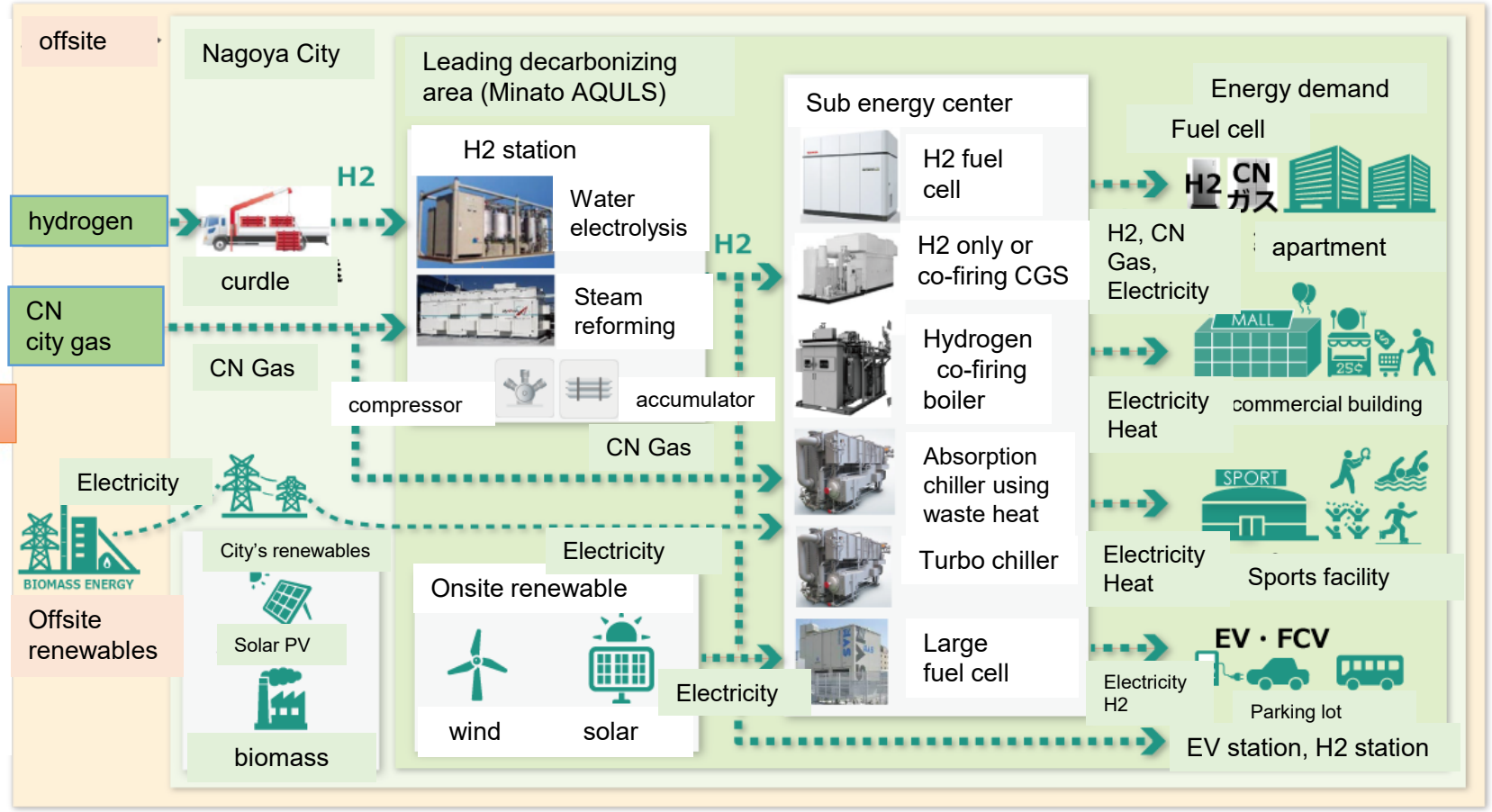
There is not enough sites available in Nagoya's urban area to raise the self-sufficiency rate for renewable energy. Nagoya city, therefore, will build a smart grid using hydrogen and carbon neutral (CN) city gas as resource.

Advanced use of heat and its development into fundamental energy conversion

Once we have the smart grid that transmits energy generated primarily from hydrogen and carbon-neutral (CN) gas-fueled cogeneration, we intend to install fuel cells in housing complexes and encourage the use of FCVs.



Energy supply diagram



Smart grid system

Improving the convenience of mobility through TOD (public transport use based urban planning) and car sharing systems

1) Reduce the influx of vehicles into the area

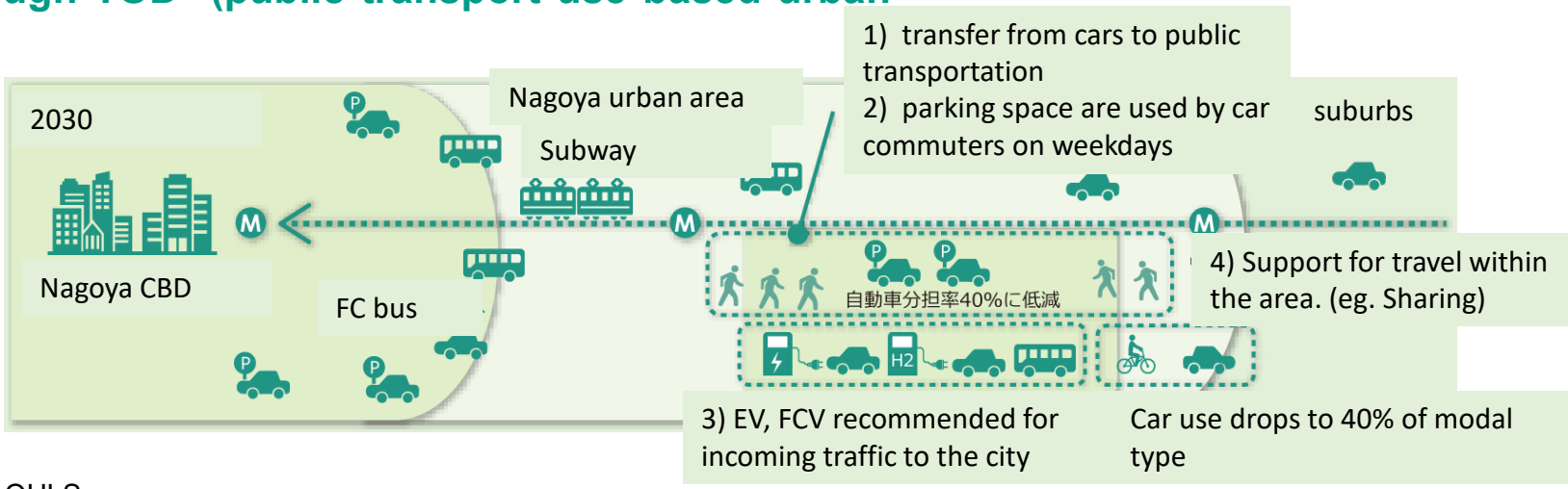
Public transport users and eco-car users are given award points and other environmental incentives.

2) Transfer from cars to public transport when travelling into the city from the suburbs

The parking space will be used by car commuters on weekdays.
Facilitate park-and-ride.

3) Support for travel within the area

Soft mobility is recommended for movement within the minato AQULS.
Car sharing systems based on EVs and FCVs will be introduced



Improved QOL and reduced CO2 emissions

1) Moderate physical activity x Decarbonisation

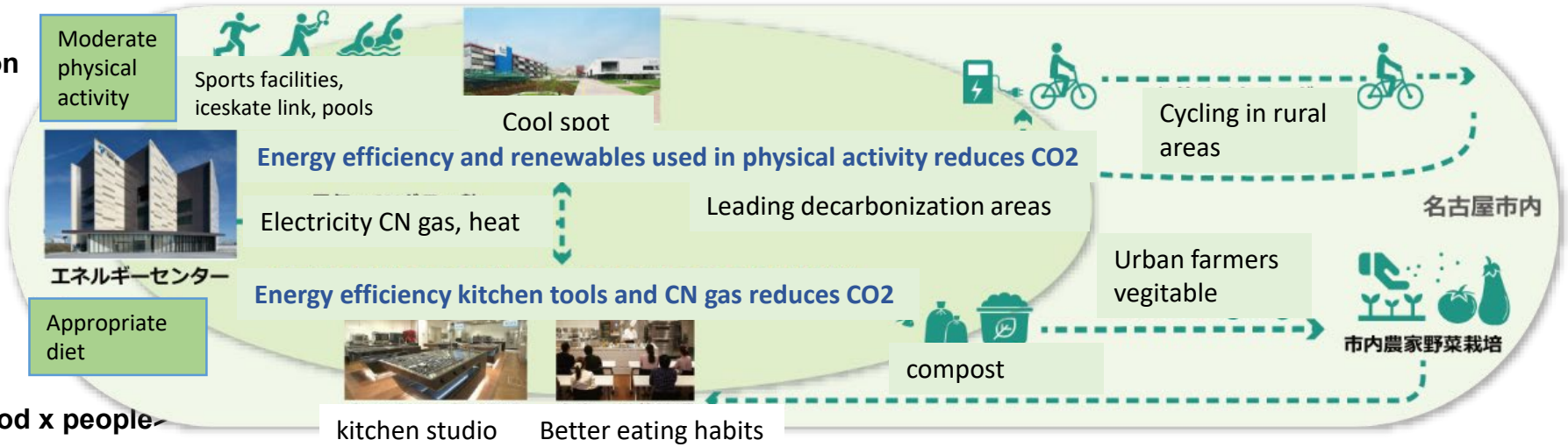
<Sports Town>

Reduce electricity demand in housing complexes by requesting power savings during peak hours of electricity and guide people to participate in outdoor activities, and events at sports facilities.
Achieve healthy lifestyles through a walkable city.

2) Appropriate diet x decarbonisation

<Create a circular economy from waste x food x people>

Establish a circular system whereby food waste is turned into fertilizers and feed, and is then provided to farmers in the city. Citizens would then purchase the resulting crops. Organize events to learn about healthy and energy-saving eating habits, food drives, etc., and work on learning about a recycling-oriented society through food.



Smart living and energy management of mobility groups within decarbonised regions.