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Trends in Japan

Facts from the *Renewables in Cities 2021 Global Status Report*

Key Takeaways on Renewable Energy in 2020 in Japan

- Local governments in Japan have been instrumental in pushing the national governments to commit to carbon neutrality and/or adopt net-zero targets.
- Most of the renewable energy policies and targets are aimed to increase the share of renewables in energy mix.
- In 2020, the number of cities with net zero target and climate emergency declaration increased significantly.

Brand new data shows:

- 11 cities had renewable energy targets and/or policies (from a global total of over 1,300 cities). This covers 46.3 million people, 40% of the urban population in Japan:
 - 6 of these cities had 100% renewable target (**Fukushima, Kuzumaki, Takarazuka, Tokyo, Yokohama, and Yusuvara**).
- Japanese cities are global frontrunners in setting net-zero targets¹: As of 2020, 103 cities had net-zero targets (up from only 14 in 2019); globally around 800 cities had net-zero targets.
- 45 cities in Japan had declared climate emergency by 2020 (up from only 7 in 2019); worldwide 1,852 cities have such a declaration.

2020 Renewable Energy Developments in Japanese Cities

City renewable energy commitments and policies

- In 2020, in response to Covid-19 pandemic, **Tokyo** Metropolitan Government created the “Eco-Support 2020 Subsidy and Support Measures Guide”, which lists the subsidy programmes available for households and businesses to invest in energy efficiency, storage and renewable technologies.
- In 2019, **Tokyo's** launched "0 initial cost" subsidy program to support rooftop PV "business models" that provide installation without initial cost.
- The majority of targets in Japanese cities are aimed to increase the share of renewable energy in energy mix

¹ Net-zero" emissions can be achieved, for example, by using natural sinks, such as reforesting land or adopting agricultural best practices, or through a technological solution, such as carbon capture and storage. Net-zero targets also are referred to commonly as “climate-neutral”, “carbon-neutral” or “zero-emission” targets, although technically these are not the same. Carbon neutrality refers to net-zero emissions of only CO₂, whereas climate neutrality indicates a broader focus on net-zero emissions of all greenhouse gases. There is no agreed-upon definition, and implementation of these targets also varies broadly.

- **Tokyo** has 9 renewables targets in total, with many interim targets:
 - 4 of these targets are aimed to increase the share of renewable in energy mix, including 100% renewable electricity target in municipal operation by 2030.
 - **Tokyo** has 3 targets on the procurement of zero emission vehicles, including zero emission buses.
 - **Tokyo** committed to 1.3 GW of installed capacity of solar power by 2030.
 - **Tokyo** has a target to deploy 150 hydrogen charging station by 2030; it remains to be seen in how far these will be supplied by renewable-based hydrogen
- **Fukushima Prefecture** committed to use wind, solar, hydro and geothermal to achieve its renewable energy target: 40% by 2020, 64% by 2030 and 100% by 2040.
- **Takarazuka** committed to 100% renewables for its power and heating & cooling sectors.
- **Yokohama** committed to 589 MW of renewable installed capacity by 2030.
- **Kuzumaki** has achieved 100% renewables.

Scaling up renewables in buildings and transport

- District cooling networks have operated in several cities in Japan (**Osaka, Tokyo, Yokohama**)
- The **Tokyo** Metropolitan Government started implementing collective buying scheme. This is the first trial in Japan to test the validity of a collective energy switching scheme, and it is expected to continue until March 2021.
- **Rising interest in renewable hydrogen:** In **Fukushima**, Toshiba and partners completed a 10 MW electrolyser in 2020 that uses electricity from solar PV to produce hydrogen for transport use:
 - **Tokyo** Metropolitan Government estimates that as of the end of 2018, **Tokyo** had approximately 2,500 in total (approximately 300 fast chargers and approximately 2,200 slow chargers) and 14 hydrogen stations².
 - In 2020, **Tokyo** Metropolitan Government introduced new hydrogen station to fuel cell passenger cars and to the buses.
 - As of 2020, **Aichi Prefecture** has one of the largest numbers of hydrogen vehicles and stations (1,100 and 16 respectively) along with Tokyo.

Financing renewables in cities

- In Japan, renewable energy investment totalled USD 16.5 billion in 2019, down 10% from 2018 due to grid and land constraints that continued to hold back solar PV developer activity and auction bidding in the country.
- The **Tokyo** Metropolitan Government have been using green bonds to finance building retrofits that included renewable energy technologies since 2017.
- The city of **Tsuru** issued JPY 17 million (USD 164,640) in public bonds to build a 20-kW hydropower station in 2005 that supplies electricity to the city hall.

² https://www.kankyo.metro.tokyo.lg.jp/en/about_us/zero_emission_tokyo/strategy.files/Full-ver.ZEV-strategy.pdf

- The city of **Kitakyushu** provided funds to establish its own local energy company and is planning a 5,000-kW waste-to-energy plant and a 10 MW offshore wind power plant.

Citizen engagement to achieve energy and climate goals

Many of the existing community energy projects were developed in Japan in response to Japan's 2011 **Fukushima** nuclear disaster:

- Examples include: Hotoku Energy in **Odawara**, Shizuoka Mirai Energy in **Shizuoka**, Tokushima Regional Energy in **Tokushima**, Obama Onsen Energy in **Nagasaki**.
- The government and regional agencies then started various support programs for community based renewable energy. Nearly 200 community power enterprises emerged.

Japan's Energy Profile

<https://www.iea.org/countries/japan>

Regional Trends – Asia

- In Asia, growing concerns about air pollution and smog have driven public demand for renewable energy technologies and electric vehicles to improve public health.
- At least 78 municipal governments in Asia had adopted renewable energy targets and/or policies, most of which were in buildings and transport.
- Local governments have been instrumental in pushing the national governments in Japan and the Republic of Korea to commit to carbon neutrality and/or adopt net-zero targets.
- Cities in Asia increasingly have sought to develop and strengthen public-private partnerships and to take advantage of digitalisation and use smart technology to attract more foreign direct investments in renewables.
- Green hydrogen for transport (and other uses) also is garnering interest across Asia, including in the Republic of Korea, with several cities having ongoing or planned pilot projects.
- Data on renewable energy progress in Asia remain limited, often due to language barriers and to low participation in international reporting.

Questions? Please contact press@ren21.net or +33 1 44 37 50 99.

All report materials, figures, case studies and the full data pack can be downloaded here:

<http://ren21.net/rec2021press>