Kyoto City's policies for buildings

–with a focus on those concerning the installation of renewable-power generators

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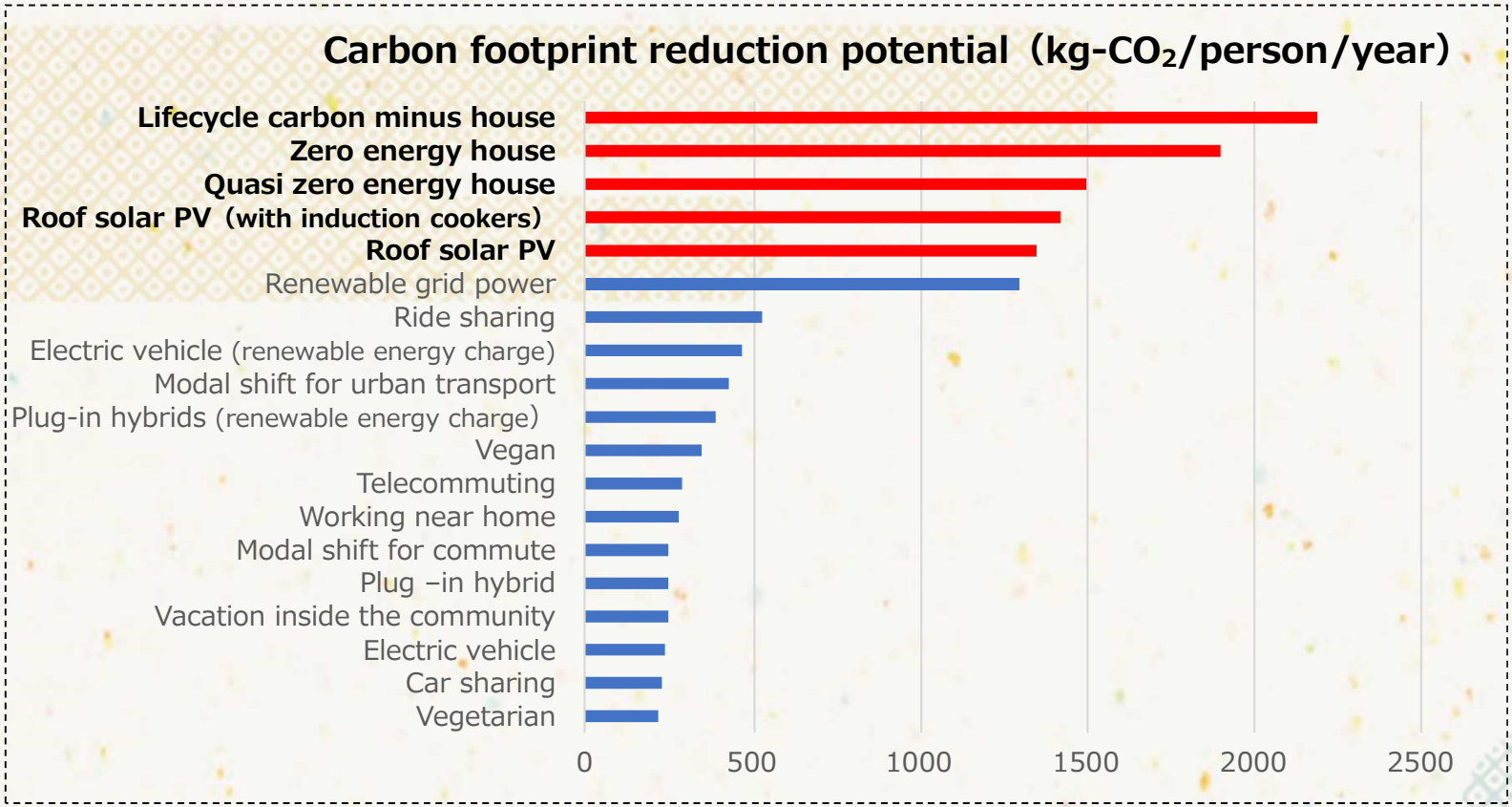
Why are we promoting policies for buildings?

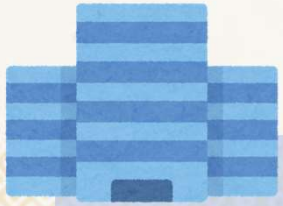
⇒ Carbon emission reduction potential is substantial



※ Developed using the data from "Quantifying the effects of decarbonized lifestyles in 52 cities in Japan: Pathways to a decarbonized society through changes in carbon footprint of mobility, housing, food, leisure, and use of consumer goods" (by the National Institute for Environmental Studies, Institute for Global Environmental Strategies, etc.)

Kyoto City's Building Policies for New constructs and extensions (2011～)

Total till now
PV19MW



New construction and extension of large buildings
(with total floor area of 2,000m² and beyond)

New Construction extension, retrofits of buildings in large sites
(with site area of 1,000m² and beyond)

Installation of renewable-power generators

Obligatory volume : **30GJ** (equivalent to 3kW solar PV system)
Available renewables : Solar PV, solar thermal, biomass, wind power, micro-hydro etc.

Use of locally produced timber

Obligatory volume（m³）=1/100（√A1+√A2+√A3+・・・+√An）
(A1,A2,A3・・An is the floor area for the available rooms (m²))
Locally produced timber： Kyoto City's "Miyako somagi" brand, Kyoto Prefecture's "Wood mileage CO_2 certified wood " brand

Indication of environmentally friendly performance

Benchmarking system : CASBEE Kyoto
Displayed at: Construction sites, Condominium sales ads

Greening of buildings and sites

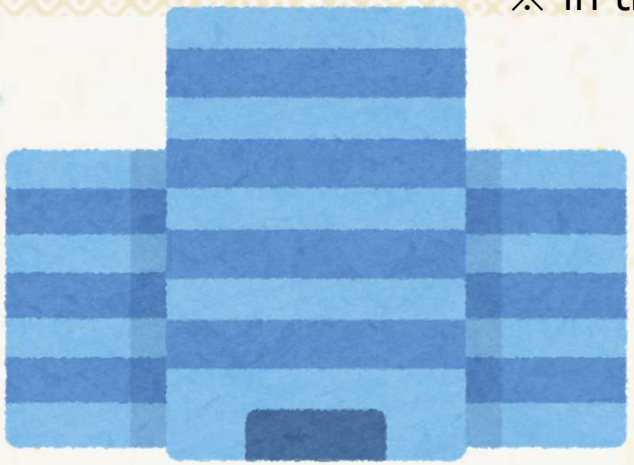
Obligatory volume :
＜above ground（the smaller of 1 , 2 ）＞
1． Site area－building area ×15%
2． Site area－（site area × building to land ratio×0.8）×15%
＜roof top＞roof area×20%

※Solar PVs can be calculated as greening area

Obligation to install renewable-power generators

A building has the obligation to install renewable-power generators for **30GJ**
This means..

Large buildings（total floor area 2,000m^2）
Annual energy consumption＝**3TJ（3,000GJ）**
※ in the year 2010



1% of the energy used in buildings is generated within the building.

On 2019.5.11 Kyoto became the first in Japan to declare "net zero CO_2 emissions by 2050"

Then Prime Minister Suga declared net zero (2020.10.26)

Issues to consider for achieving "Net zero CO_2 emission by 2050"

○ Clarification of the roles played by each actor

- Consideration of the maximum possible efforts by Kyoto City
- Proposals and requests for the role to be played by the national government
- Guidance and encouragement of initiatives required by the private sector

○ Key initiatives

◆ Considerations for the year 2030

- Establishment of new measures to promote renewable energy
- Strengthen measures for households, buildings, etc.

※ Excerpts from Kyoto City Environmental Council document, August 2019.

The system for energy conservation in new buildings in Japan

Regulation by the Energy Conservation Law
⇒ Difficult for local governments to enact additional ordinance

<table>
<tr><th></th><th>Non-residential bldg.</th><th>Residential bldg. (including condominiums)</th></tr>
<tr><td>Large bldg.
(2,000m² and beyond)</td><td rowspan="2">Obligation to comply with energy conservation standards
【Linked to building permit procedures】</td><td rowspan="2">Obligation to report
【Instructions, orders, etc. are offered in the event the standard is not met and it is deemed necessary.】</td></tr>
<tr><td>Mid size bldg.
(300～2,000m²)</td></tr>
<tr><td>Small bldg.
(less than 300m²)</td><td>Obligation to make efforts to comply with energy conservation standards
+
Explanations by the architect to the building owner is mandatory</td><td>Obligation to make efforts to comply with energy conservation standards
+
Explanations by the architect to the building owner is mandatory
Top Runner Program
【Comply with the Top Runner Standard】
Widen the scope
<table><tr><td rowspan="2">owned</td><td>Ready-built detached house</td></tr><tr><td>Custom built detached house</td></tr><tr><td>rented</td><td>Apartments for rent</td></tr></table></td></tr>
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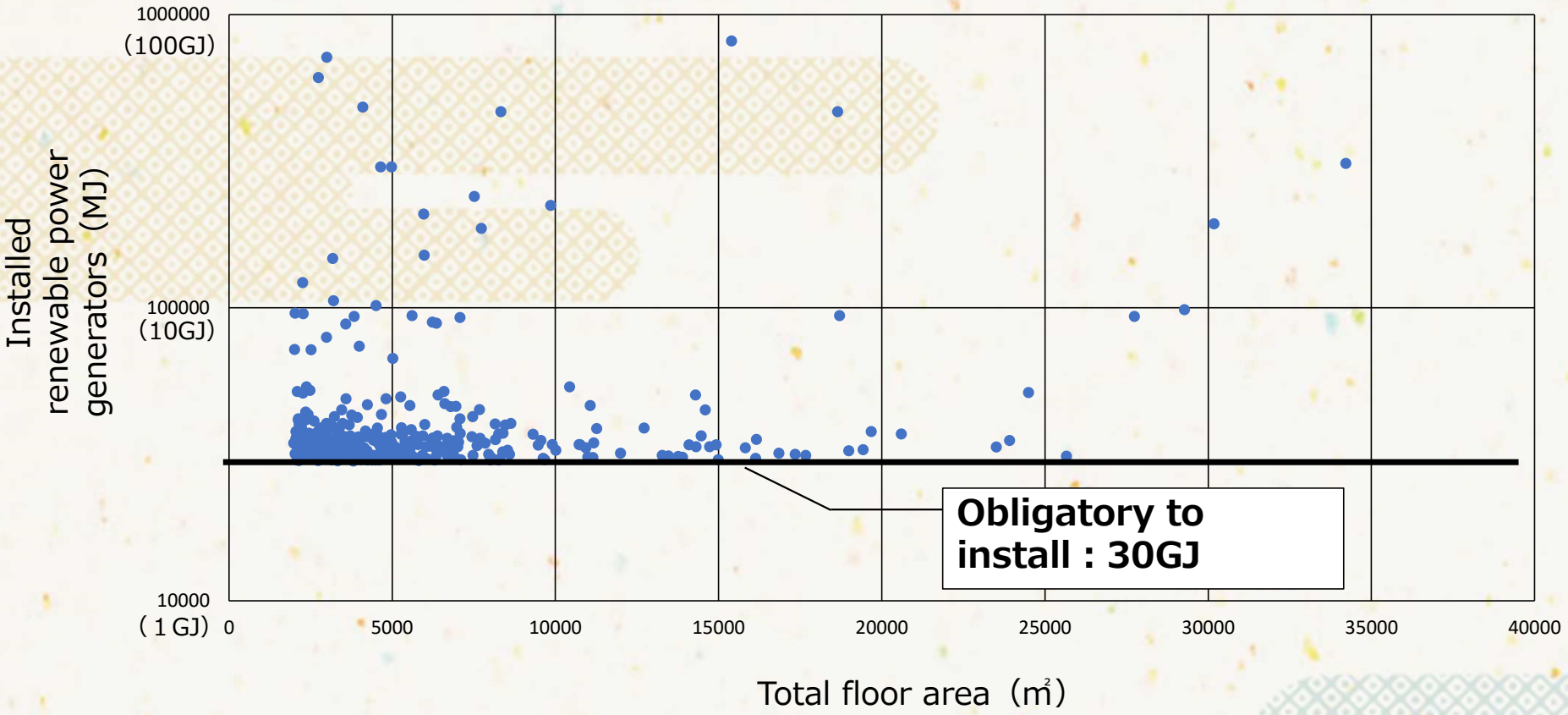
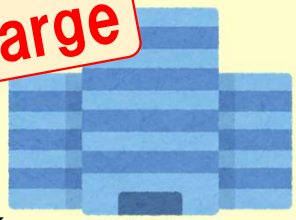
Correlation between the total floor area of buildings of 2,000m2 or more and the amount of renewable-power generators installed （2015～2019）



Kyoto City's Measures to Promote Renewable Energy in New Building Constructions, Extensions and Retrofits

Large

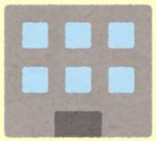


(total floor area 2,000㎡～)

Renewable-power generators※ increased obligations
fixed（All 30GJ）
➡ by meter（60～450GJ）
（2022～）

Increased obligations

Mid size



(total floor area 300～2,000㎡)

Renewable-power generators※ new obligations
fixed（All 30GJ） （2022～）

Widened the scope

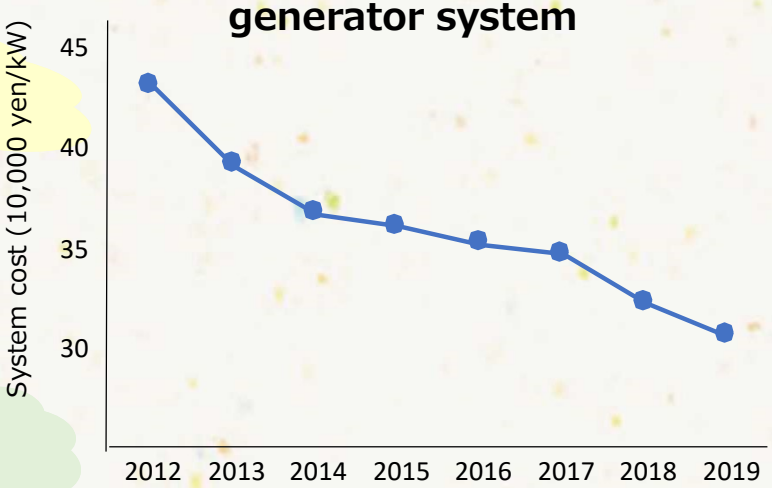
Small

(total floor area ～300㎡)

Joint purchase of solar PVs and other measures to encourage the spread of solar PVs to homes.

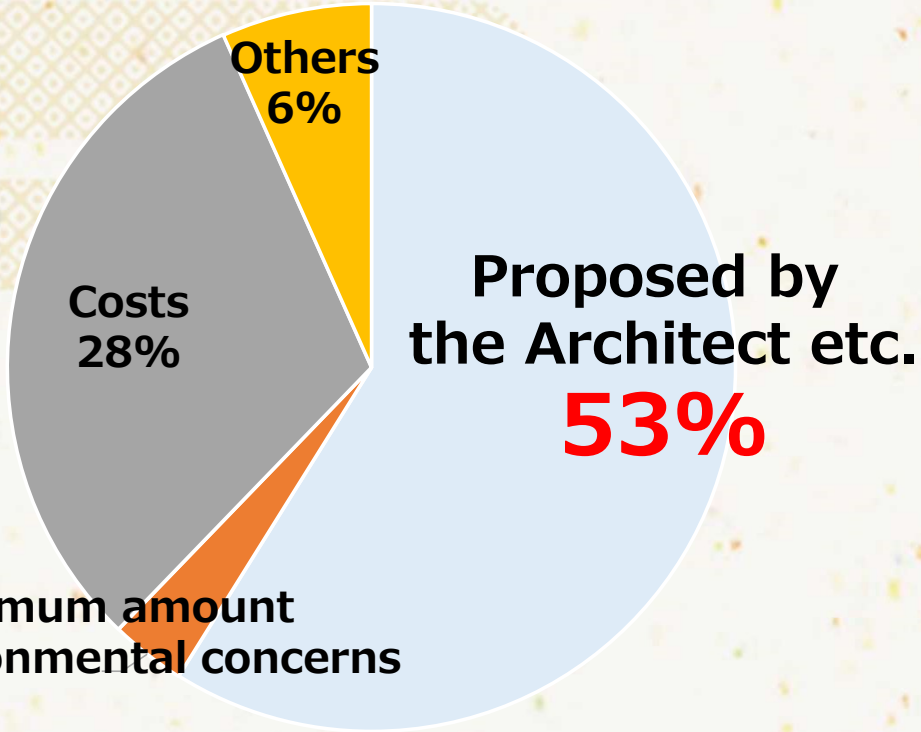
Support

Cost of a solar powered generator system



※ Generators using solar PVs, solar thermal, biomass, wind power etc.

Q. How was the amount of renewable energy equipment installed determined?



Developed from data in “A Guide to the System of Obligatory Explanations by Architects for the Introduction and Installation of Renewable Energies under the Kyoto Prefectural and Kyoto City Ordinances”

Kyoto City's Measures to Promote Renewable Energy in New Building Constructions, Extensions and Retrofits

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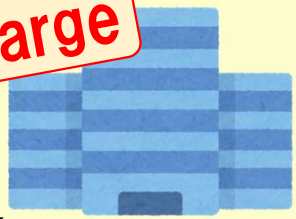

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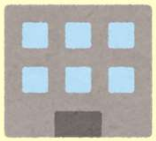

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Small

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Joint purchase of solar PVs and other measures to encourage the spread of solar PVs to homes.

Explanations regarding the installation of renewable energy is mandatory（2021～）

Architect
↓
Building owner

<Must explain>
・CO_2 reduction impact from renewables
・ Maximum amount of renewable energy that can be installed
・ Types of renewable energy that can be introduced, etc.

※ Generators using solar PV, solar thermal, biomass, wind power etc.