

**Energy generating house with AI to use energy efficiently**  
**Supporting the family for three days until lifelines are restored in case of disaster**  
**“Sumitomo-Fudosan-no-Miraino-le” is launched**

Sumitomo Realty & Development Co., Ltd. (Headquarters: Shinjuku-ku, Tokyo; President: Kojun Nishima, hereinafter “Sumitomo Realty”) is pleased to announce that it began sales of the “Sumitomo-Fudosan-no-Miraino-le”(Sumitomo Realty’s next-generation home), a custom home package product with equipment that protects the environment and supports daily living, on September 4th. It is a part of its custom home construction business, which receives orders for 2,500 new houses annually.



**Features of the "Sumitomo-Fudosan-no-Miraino-le"**

**1. Environmentally friendly, energy self-sufficient home**

To achieve a carbon neutral society, adding storage batteries to solar power generation systems will become the standard for the future. To that end, we have started providing the industry-first\*1 "SUMIFU x ENEKARI" service jointly developed with TEPCO Energy Partner, Inc. With this service, we install solar power generation systems and storage batteries at a "zero initial cost" and provide support semi-permanently.

**2. IoT home utilizing AI-HEMS**

In the "Sumitomo-Fudosan-no-Miraino-le," AI will estimate power consumption based on living patterns and the amount of power generated from the next day's forecast for solar radiation. By making effective use of surplus power, it will contribute to saving on electricity costs and ultimately to achieving a carbon neutral society. It also enables controlling of the air conditioning, electric window shutters, water heater, electric locks, and lights via smartphone away from home, making life more convenient and comfortable.

**3. Disaster preparation**

With the increase in natural disasters such as earthquakes and typhoons, there is an increasing need for homes that can, in addition to the safety of the building structure, provide peace of mind by supporting continuance of people's daily lives even if lifelines such as water or electricity are temporarily lost. As it is generally said that it takes approximately three days\*2 for public services to respond to a power outage or suspension of water supply, "Sumitomo-Fudosan-no-Miraino-le" is equipped with "solar power generation," "storage batteries," a "potable water storage system" and a "rainwater storage tank" to secure electricity, drinking water and water for daily use for about three days, so you can live safely and comfortably at home even in the event of a disaster.

\*1 A first in the industry of solar power generation equipment installation where a major infrastructure group supports equipment repairs and upgrades for the entire period of residency (based on our own research).

\*2 According to the Ministry of Health, Labor and Welfare, 78.8% of electricity was restored three days after the Great East Japan Earthquake. Information on water is from the Fire and Disaster Management Agency "Important information on countermeasures against earthquake disasters" of the Ministry of Internal Affairs and Communications.

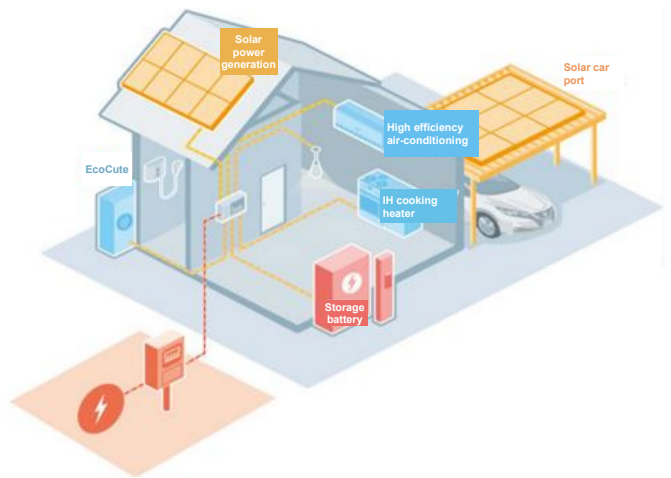
# 1. Environmentally friendly, energy self-sufficient home

## [Feature 1] "SUMIFU x ENKARI"— Solar power generation & storage battery installation, and a "long-term" support service that provides peace of mind

"SUMIFU x ENKARI" is an industry-first service\*1 that provides customers with peace of mind through semi-permanent use of solar power generation. With the payment of a fixed service fee only, it installs solar power generation equipment and storage batteries at a "zero initial cost," and provides support including equipment repairs and upgrades for the entire period of residency.

## [Feature 2] Toward achieving a carbon neutral society by reducing greenhouse gas emissions

One characteristic of solar power generation is that it produces clean, endless renewable energy. The introduction of a solar power generation system for "energy creation" and storage batteries for "energy saving," combined with high insulation and airtight specification of the house, makes it compatible with zero-energy housing (ZEH).\*2



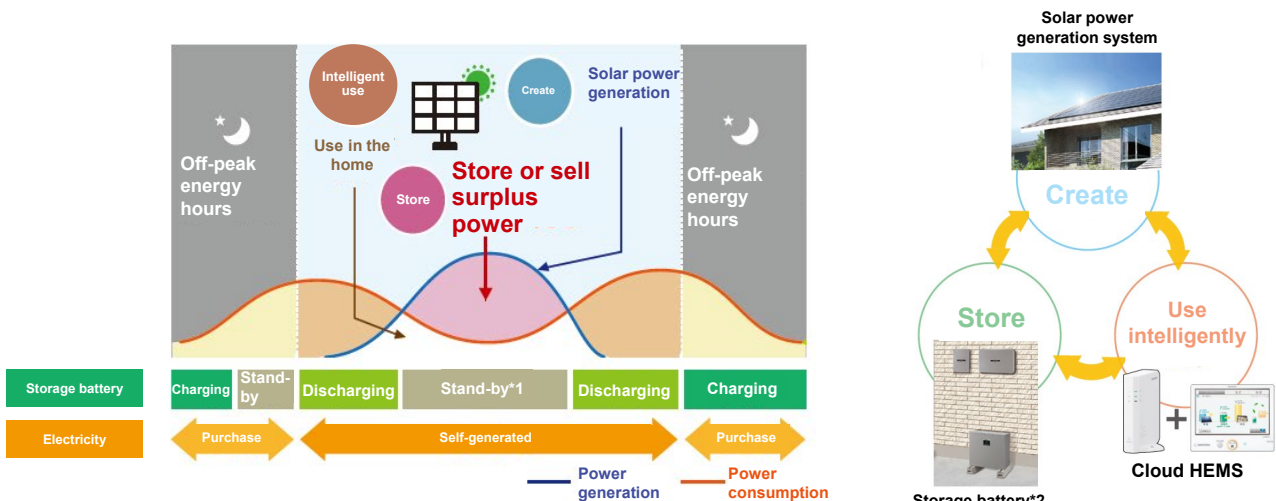
\*1 A first in the industry of solar power generation equipment installation where a major infrastructure group supports equipment repairs and upgrades for the entire period of residency (based on our own research).

\*2 ZEH: Abbreviation for Net Zero Energy House. A house that consumes virtually zero energy by combining energy saving and energy creation.

# 2. IoT home utilizing AI-HEMS

## [Visualizing the power created and stored, and using it intelligently]

During the day, it uses solar power, and at night when the electricity cost is relatively low, it charges the storage battery. In the morning and evening, it uses electricity from the battery, thus saving on electricity bills. Moreover, by linking with AI-HEMS, it uses electricity intelligently without waste.



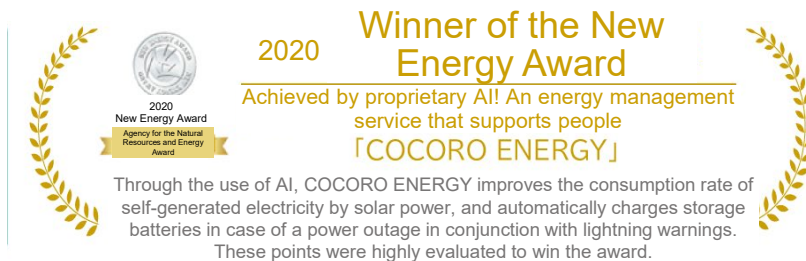
\*1: Does not discharge when charging.

\*2: This is just an image. The actual equipment has piping, etc. running from it.

## ["COCORO ENERGY" to manage energy to suit your lifestyle]

AI in the cloud linked with the HEMS controls energy intelligently based on external information and the pattern of electricity use in each household. We will support people's next-generation lifestyles by expanding the way we use environmentally friendly energy.

\*COCORO ENERGY is a service developed and provided by Sharp Corporation.



## COCORO ENERGY Three advantages of "COCORO ENERGY"

- 1 Charges the right amount of energy automatically calculated according to the weather — Peace of mind!
- 2 You can check the power generation and consumption status with your smartphone — Convenient!
- 3 You can control home devices away from home via your smartphone — Convenient!

### 1 Intelligent control of storage batteries by AI linked with weather forecasts

It is equipped with an industry-first\* "AI lightning alert coordination" function. While a lightning alert is being issued, it checks the battery charge level and automatically determines and charges just the amount of power necessary. At the same time, the window shutters close automatically, so you can rest assured.

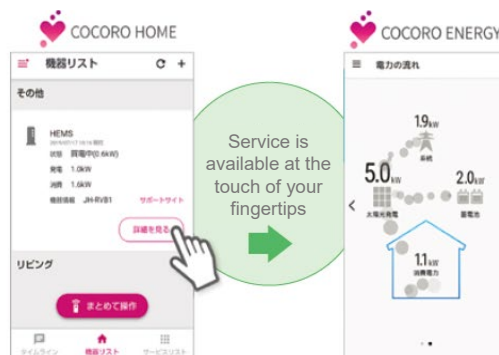
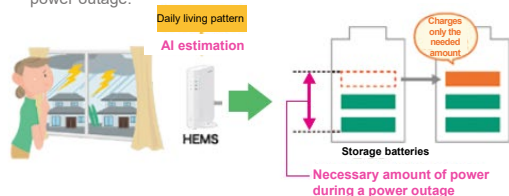
\* In-cloud services controlling storage batteries in line with weather information (Sharp survey, from July 1, 2020 onward). HEMS (JH-RV11/JH-RVB1) is required.

### 2 "Visualization of power" including generation and consumption status

With your smartphone, you can check the status of power generated, consumed and sold of your solar power generation system, as well as notifications such as when the battery started charging in preparation for a power outage when a weather alert is issued due to a typhoon, etc.

### What happens when a lightning alert is issued

- 1 AI uses the pattern of your daily power consumption to estimate the amount of energy necessary in case of a power outage.
- 2 AI charges the storage batteries with the necessary amount of power it estimated in case of a power outage caused by lightning.



### 3 Control your home devices via smartphone away from home

You can control the air conditioning, electric window shutters, water heater, electric locks, and lights away from home.

### 3. Disaster Preparation

We have been providing homes with excellent earthquake resistance and damping system to prevent damage to the house or furniture from falling over. With the recent increase in natural disasters such as earthquakes and typhoons, we will ensure homes that are not only structurally safe, but also are safe and comfortable for people to stay in even after a disaster.

#### [A home that is friendly to people and the environment with "solar power" and "storage batteries"]

It is said that power outages occur in approximately 50% of regions following a disaster,\*1 and it takes approximately three days to restore electricity.\*2 By installing a "solar power generation system" and "storage batteries," it secures the minimum amount of electricity necessary for approximately three days even in the event of a power outage.



When the storage batteries have a capacity of 4.2 kWh, then can power

these pieces of equipment for

**Approximately 3 days!\***



Refrigerator\*2  
24 hrs./day



TV  
3 hrs./day



Lights  
5 hrs./day



Smartphone charging  
1 smartphone\*3/day

\*1: Calculation based on a simulation where storage batteries were used together with solar power generation (approx. 4.2 kW). Under a condition of 2 kWh/day of electricity generated (estimated by the manufacturer), assuming days with less sunlight, during the rainy season in Japan. \*2: Inverter controlled refrigerator with a 400 L capacity. \*3: Charging for approximately 2.5 hours per smartphone.

● Equipment needs to be connected to dedicated wiring beforehand to be used during a power outage. The dedicated wiring supports use up to 1,500 W during both power outages and normal use (the equipment in the above example cannot necessarily be used at the same time).

#### [Securing water with a "storage system" and "storage tank"]

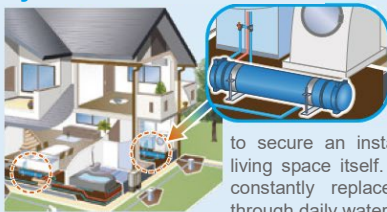
After a disaster, approximately 50% of the city area is cut off from water,\*3 and it is said that it takes approximately 3 days\*4 before public services respond with measures such as tank cars delivering water or provision of an emergency water supply. Drinking water is secured for approximately 3 days with the "potable water storage system," and water for daily use for approximately 2.5 days with the "rainwater storage tank."



Estimated drinking water needed = **8 L/day** for a family of 4

For always clean water:

##### Potable water storage system



24 ℓ

This system stores potable water in the under-floor water supply route and allows easy access to water in the event of an outage. Since the system is installed in the piping space beneath the floor, there is no need to secure an installation location within the living space itself. It is also hygienic as it is constantly replaced with fresh tap water through daily water supply use.

$24 \text{ L} \div 8 \text{ L/day} \doteq$  **3 days' worth**

Estimated water for daily use needed = **40 L/day** for a family of 4

Collecting water from the rain gutter:

##### Rainwater storage tank

100 ℓ

Storing rainwater secures water for daily use, such as for laundry and toilets, when the water supply is cut off in earthquakes and other emergency circumstances. Its capacity is a reliable 100 liters. It can also be used in the initial extinguishing of fires, giving residents a great sense of security through the availability of water. (Note: This is not potable water.)



$100 \text{ L} \div 40 \text{ L/day} \doteq$  **2.5 days' worth**

\*1,3: Hypothetical damage from an earthquake that directly hits the Metropolitan area / damage and condition of infrastructure, lifelines, etc. (Disaster Prevention Information, Cabinet Office)

\*2: According to the Ministry of Health, Labor and Welfare, 78.8% of electricity was restored three days after the Great East Japan Earthquake

\*4: Information on water is from the Fire and Disaster Management Agency "Important information on countermeasures against earthquake disasters" of the Ministry of Internal Affairs and Communications.

## (+ α) Achieving a clean living environment

[Using materials that are not only aesthetically appealing and weather resistant, but are also friendly to people and the environment]

When sunlight (ultraviolet light) comes into contact with the exterior wall coated with photocatalyst, the active species are generated and break down viruses and bacteria on the surface, providing a safe living environment.

In addition, the interior walls, flooring, and handrails have antimicrobial and anti-viral treatment coatings.

### <Interior>



#### 1. Uses safe and secure anti-viral EB decoration sheets

Anti-viral flooring

#### 2. Reduces the number of viruses

Anti-viral stair handrails

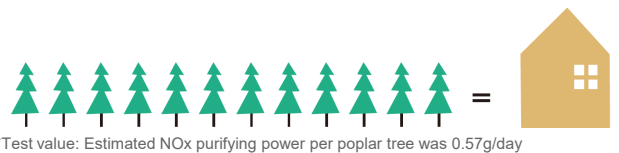
#### 3. Inactivates viruses and suppresses bacterial growth

Anti-viral wallpaper

### <Outdoors>



Oxidizes harmful pollutants such as NOX (nitrogen oxides) found in vehicles' exhaust gas into harmless ions, which are washed away with rain. Its air purification capacity is 165 m<sup>2</sup> (approximately one house), equivalent to 12 poplar trees.



\*Test value: Estimated NOx purifying power per poplar tree was 0.57g/day

## [Contribution to SDGs]

The initiatives related to this release contribute to the following SDG objectives:

- Goal 6 CLEAN WATER AND SANITAION
- Goal 7 AFFORDABLE AND CLEAN ENERGY
- Goal 11 SUSTAINABLE CITIES AND COMMUNITIES
- Goal 13 CLIMATE ACTION
- Goal 17 PARTNERSHIPS FOR THE GOALS

## SUSTAINABLE DEVELOPMENT GOALS

