



# From region to planet, implementation of environmental conservation

Through thorough implementation of energy-saving and waste control policies, we will develop a town in harmony with nature by introducing the latest technologies to minimize the environmental load, and creating a mechanism to protect the local ecology.



AEON MALL Tokoname

## Environmental topics 2016

### Acquired the "Green Star" in a GRESB Assessment



The Global Real Estate Sustainability Benchmark (GRESB) that was established mainly by pension fund groups in Europe is an international benchmark to measure the sustainability of real estate companies and investment institutions. Our firm was placed 16th (out of 92 companies) in the Asian region in 2015 and 126th (out of 688 companies) in the entire world. We have now acquired the "Green Star" – the highest award – as a company that is making excellent efforts in both the formulation/disclosure and execution/measurement of environment policy.

### Receiving the "Osaka Stop Global Warming Award"

The "Osaka Stop Global Warming Award" is sponsored by the Osaka Prefectural Environment, Agriculture, Forestry and Fisheries Department to honor business operators that are making excellent efforts to promote and encourage global warming prevention measures, heat island phenomenon reduction measures and electrical demand leveling measures. We received an award of excellence in the "Global Warming Measures Category" because we reduced our greenhouse gas emissions by 12.7% through the introduction of LED lighting in the five malls we directly manage in the prefecture.



### Started Japan's first "water reclaimed from sewage advanced composite utilization system"

Sakai City, Kansai Electric Power Group and our company started Japan's first initiative to make composite use of water reclaimed from sewage and the thermal energy emitted at that time in AEON MALL Sakai Teppoucho (Osaka Prefecture) in March 2016. This utilizes water reclaimed from sewage as a heat source for hot water supplies and air conditioning in facilities. Together with this, the water reclaimed from sewage that has been used as a heat source



is utilized as a source of water for "brook waterways" and toilet cleaning water inside and outside of our facilities.

### All malls executed lights-out in unison

Our company has been participating in "CO<sub>2</sub> emission reduction/Lights-out campaign" advocated by the Ministry of the Environment since 2003.

Our 140 malls nationwide turned off lights in unison, which are installed outdoors and around the malls on June 22 and July 7, 2015.

The electric power that can be reduced by a single lights-out is about 387,000 kWh (equivalent to the amount of electric power used in a day by ordinary homes of about 27,400 households<sup>Note</sup>). Note: Converted by 14.12 kWh per household.



### Three new malls acquired the ABINC certification

Three malls that opened in and after October 2015, AEON MALL Shionawate, AEON MALL Tokoname, and AEON MALL Sakai Teppoucho, succeeded in acquiring the "Association for Business Innovation in harmony with Nature and Community (ABINC)" certification. This certification is based on the "Japan Business Initiatives for Biodiversity (JBIB) Guidelines" created and registered by JBIB. Recipients for this certification are objectively evaluated and certified by the "Association for Business Innovation in Harmony with Nature and the Community" for their efforts in the creation of biodiversity-friendly green areas. A total of five malls acquired the certification following AEON MALL Toin (in 2013) and AEON MALL Tamadaira Woods (in 2014).



We are attracting wild birds that live in Chita Peninsula by setting up 25 nest boxes in the woods "CURIO" on the site of AEON MALL Tokoname.

### Increasing Installation of charging points for electric vehicles (EV)

Since the installation in AEON LakeTown in 2008, we have been promoting the installation of chargers for electric vehicles (EV) at each mall in order to realize a sustainable society and conserve the global environment, as well as to promote the spread of electric vehicles and plug-in hybrid cars that do not emit CO<sub>2</sub>. AEON Mall and other commercial facilities of the AEON Group are building an EV power charge station network totaling 193 bases as of April 1, 2016, and creating a framework of a charging system using electronic money "WAON", etc. to provide stable services as a social infrastructure.



### Smart AEON development

"Smart AEON" is the next-generation eco-store where the whole town is working on the improvement of energy efficiency and prevention of disasters while creating a sustainable town which can meet the standards stipulated in the environmental objectives of our "AEON Eco-project". Among malls our company is operating, Smart AEON is being developed by 10 malls including AEON MALL Sakai Teppoucho that opened in March, 2016.

#### Smart AEON



### Promoting the use of public transportation

At AEON MALLs, an environment has been prepared so that customers can visit the mall by using public transportation such as trains and shuttle buses. In cooperation with the railroad company and transportation bureau, we offer privileges to customers who come by train and promote creation of an environment in which public transportation can be easily used.

### Ecology of using the power of nature

#### Solar Power Generation

Moving ahead of other commercial establishments, we have introduced solar power generation systems in stages thus allowing part of a mall's power consumption to be covered. Some malls have introduced systems where power generated by solar panels can be used in the event of a power outage due to disasters etc.



#### Utilizing wind power energy

Some malls have installed clean energy hybrid sun lamps using wind power generation and solar power generation. As stable charging is possible even at night or in winter when there is little sunlight, the sun lamps can provide light all night long even in a disaster.



#### Wall Greening / Planting

Not only does greening of the mall roofs and walls improve the scenery but it also suppresses the rising of temperature within the mall during summer, thus leading to the reduction of energy consumption by air conditioners. In addition, we produce pleasant and relaxing spaces by arranging rich green planting everywhere around each mall while harmonizing with the natural environment by planting.



### AEON hometown forests program

"AEON hometown forests program" started in 1991 in Malaysia. Upon opening of a new mall, we plant trees that are the most suitable to the region's natural environment together with our customers. The cumulative number of planted trees reached 11.2 million trees (Group total) as of the end of February 2016.





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## Water quality conservation

To comply with the effluent standards, we require restaurants to regularly clean the grease traps of their kitchens, to prevent the discharge of oil and garbage. Moreover, periodic training is conducted at each mall to prevent any oil spillage that occurs in shop kitchens from spreading outside. Furthermore, some malls use bacterial decomposition techniques to purify wastewater. Water quality is purified by bacteria grown in cultures, which decomposes oil by absorbing phosphorus and nitrogen.



Grease trap cleaning



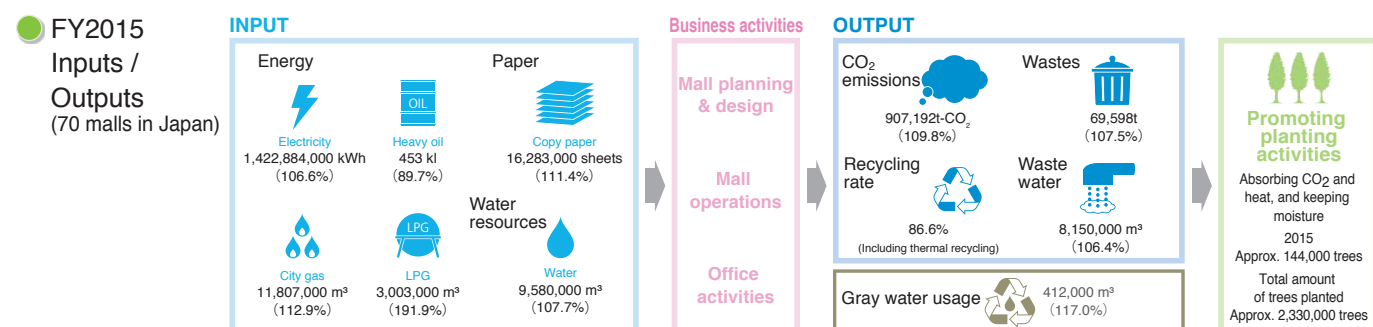
Oil protection wall installed in a garbage storage



Regular stock of special oil absorbent that prevents oil outflow

## Measures to save power

Each mall sets its quarterly target value of power consumption, and endeavors to save electricity on a daily basis within the range where it does not affect the safety and comfort of our customers. Specific methods include the reduction of the number of lights after attaining in-house illumination criteria, partial closure of parking lot and suspension of operation of some elevators during non-peak periods, introduction of human-motion detection sensors in escalators, and appropriate air-conditioning management inside the mall.



Note 1: For the whole mall including common use spaces, AEON and tenants. However, waste and the recycling rate apply to the tenants and AEON MALL office, and copier paper applies to AEON MALL office only.  
 Note 2: Figures in parentheses are percentages over the previous year.

## Approaches toward saving energy

### LED Lighting

At each mall, we are promoting the switch from the existing fluorescent and incandescent lighting to LED lighting which has a lower power consumption and longer life-span. For malls opened in recent years, 100% of the public areas is equipped with LED lights. We are also encouraging the specialty stores to adopt LED lighting when a new mall is opened or when existing stores are renovated since, colors and brightness of lights can now be chosen by the stores. As a result, a steady progress is being made in the switch to LED lighting. Additionally, LED lighting with lower power consumption is being adopted for exterior electric signs.



### Ice Thermal Storage System

The Ice Thermal Storage System is used to reduce the power used during the daytime in summer when the load is high, thus evening out power consumption throughout the day. This system works by using electricity generated during the nighttime when the power load is low to accumulate ice in the thermal storage tanks and then to use this energy source during business hours.



### Cold Water Air Cooling Cascade System

The "Cold Water Air Cooling Cascade System" developed by our company consists of multiple air conditioning plants positioned in cascades (serially) to realize a reduction in the power used to transport cold water during summer as well as finely-tuned responses to the air conditioning load. During winter, the cold water absorbs heat from the heat generated from human bodies and lighting to warm up the exterior air for air circulation. By using this system, we have made possible a power consumption reduction of about 50% in comparison with existing systems and are contributing to a reduction of CO<sub>2</sub> emissions.

## Reduction of waste and recycling

To reduce the waste discharged from malls, it is important to gain the cooperation of the specialty stores and have them clarify "what, where, and how much waste is disposed of", and increase the awareness that it is a challenge that has to be addressed. Each mall has introduced a system where waste is separated into 17 categories and weighed accordingly. After weighing the waste of each category, the specialty stores paste a sticker indicating the weight of the waste and collectively dispose of them at the specified storage place for each category. We recycle the separated waste as much as possible and keep track of the recycling rate for each category. The recycling rate for fiscal 2015 was 86.6%.



Clearly marked waste storage by category. Providing air-conditioned facilities to prevent the generation of odors and suppress the growth of pest insects.



Waste is totaled per item and weighed. The amount of waste discharged from each specialty store can be grasped from the data.

## Total amount of waste discharge and recycling rate in FY2015

		Total amount of waste discharge	Recycling rate
1	Garbage	15,234t	91.0%
2	Cardboard	19,250t	100.0%
3	Miscellaneous refuse	19,758t	64.0%
4	Waste plastic	3,035t	98.6%
5	Bin	422t	99.5%
6	Can	654t	100.0%
7	Expanded polystyrene	111t	100.0%
8	Waste oil	1,704t	100.0%
9	Paper	2,788t	100.0%
10	Bulky refuse	141t	80.8%
11	Other incombustible refuse	1,404t	79.5%
12	Waste fluorescent lamp	30t	82.7%
13	Waste battery	9t	79.1%
14	Disposable chopsticks	115t	95.9%
15	Waste alkali peeling liquid	35t	63.6%
16	Sludge	4,328t	89.4%
17	Waste engine oil	—	—
18	In-store collection: Aluminum can	79t	100.0%
19	In-store collection: Food tray	24t	100.0%
20	In-store collection: Milk pack	110t	100.0%
21	In-store collection: PET bottle	366t	100.0%

Company-level recycling rate (including thermal recycling) 86.6%

## Environmental communication

Environmental load reduction at each mall cannot proceed only by the efforts of our company's employees but also requires the understanding and cooperation of the specialty stores and customers. We have asked for cooperation from the staff of the specialty stores through the distribution of booklets and the placing of notices on the bulletins backyard. Additionally, in each mall, we introduce our environmental efforts through eco-information and the eco-bench, and call for customers' cooperation in using eco-friendly bags and recycling.



At eco-information, the operating status of the solar power generation system can be confirmed.



Trash boxes in the mall are categorized into four items. We have also asked customers to cooperate in this waste separation.

## Promoting resource recovery and recycling

Some AEON MALLs have been promoting used paper recycling through the introduction of a system where customers receive recycle points for the corresponding weight of old newspapers and old magazines they bring in. When a certain amount of points are accumulated, they can be exchanged for AEON gift coupons. This system is well received by the customers because the used paper is collected in dedicated boxes installed at malls, and customers can bring their used paper on the way to shopping at any time. Additionally, we are implementing a system where customers can bring their PET bottles to be collected in exchange for WAON points that we give out in some AEON MALLs.



Used paper recycling point system "ecom" (Cooperated by Kokusai Pulp & Paper Co., Ltd.)



Automatic PET bottle collection machine where WAON points can be accumulated by the customers.