

# A Recycling-Based Society in Oki Town



## Background

Oki Town is situated in the southern part of Fukuoka Prefecture, in the middle of the Chikugo plains. It is an agricultural town with a rich rural landscape and has canals referred to as “horiwari” that run through the length and breadth of the town. The town has an area of 18.43 square kilometres and a population of around 14,300 people, and this compact scale is a big strength for getting citizens’ cooperation when proceeding with town planning, and for over 20 years it has promoted a policy of separating its rubbish for recycling with the cooperation of citizens.

## Project Aims

Starting with the recycling of kitchen waste, Oki Town made an official declaration that it was aiming to be a zero-waste town and it separates all things that can possibly be recycled. The final goal is to reduce the generation of rubbish and it’s aiming to have no waste disposed by incineration or landfill. The keywords for creating a sustainable society are:

- 1 Recycling of resources, which includes rubbish;
- 2 Recycling by people, which involves citizens actively taking part in planning and supporting the creation of the society; and
- 3 Recycling of money in combination with recycling the region, which involves supporting the local economy through local production for local consumption.

By devising these recycling structures, Oki Town is

constructing a sustainable society and aiming not to leave the problem for the next generation.

## Project Outline

### 1. The Oki Recycling Center “Kururun”

The Oki Recycling Center, Kururun, is a biomass recycling facility that started operations in November 2006. It takes kitchen waste from the town’s households and restaurants, along with septic tank sludge and raw sewage, and uses a methane fermentation process to turn it into a biogas that can be used for power generation. After the fermentation, the digestive fluids are used as liquid fertiliser.



The Oki Recycling Center “Kururun”

### 2. Not leaving the problem to the next generation: Oki Town’s Zero Waste Declaration

Oki Town was the second in the country to make a zero-waste declaration, which it officially announced in March 2008 with its Oki Town Mottainai Declaration. With the effects of climate change

becoming more serious, they did not want to leave the problem to the next generation, so with that aim in mind they declared to all that they would act locally to find solutions.

### **Strengths and Innovations**

1. Kururun is roughly in the central part of the town, along National Route 442, and one of its features is that it's side by side with a roadside station called "Michi no Eki Oki". This area has a shop that sells agricultural produce directly from farmers and a restaurant specialising in local production for local consumption, which are both thriving. Traditionally, residents dislike waste facilities, but this is the base of the recycling society, and has become the pride of the residents and has contributed greatly to the revitalisation of the town.

Furthermore, it is the first facility in the country to take kitchen waste, raw sewage, and septic tank sludge and convert it to biogas through methane fermentation. This is used to generate power, and the digestive fluid that is left over after the fermentation is used in the town as an organic liquid fertiliser. Essentially, waste matter is processed and used as a biomass resource with nothing left over, creating a virtuous circle.

Of course, citizen power is essential for the success of this project. The kitchen waste separation efforts are outstanding, with less than 1% contamination, and all of the liquid fertiliser is used by farmers. This initiative is seen as one where the authorities and citizens have come together as one, and every year 3,000-4,000 observers from within Japan and overseas visit the site for research.

2. Oki Town's zero waste declaration touts controlling the generation of waste, eliminating incineration and landfills, and promoting recycling. By sharing these goals with citizens, they have established a thorough system for separating rubbish. From FY 2010, Oki Town started collecting plastic containers, packaging (**Note 1**), and other plastics, and from 2011 they were the first in the country to start separately collecting

disposable diapers from households. In 2018, with the cooperation of neighbouring municipalities, business people, universities, and so on, YK Clean (Inc.), which owns a facility that produces oil from the primary separation of plastic containers, packaging and other plastics, opened a plastics recycling facility, that unusually for Japan works with the cooperation of the local area. This is a characteristic aspect of what is carried out by a national model for rubbish separation initiative that has gained the cooperation of the residents.

### **Results of the Project**

1. Twelve years have passed since Kururun started operating, and with the support of all of the residents in separating rubbish, farmers using liquid fertilisers, and local production for local consumption in agriculture, systems to revitalise the local area have been established. This has led to a recycling loop for organic waste matter. The project has brought about a variety of benefits for the town. For example, recycling kitchen waste has reduced incineration by 60% (by the end of FY 2017). Citizens' sense of participation in creating a community has heightened, the use of organic fertilisers has reduced the burden on farmers, the amount of CO2 produced has been reduced by a third, and the cost of waste disposal has been cut by 310 million yen in 11 years, which has alleviated financial burdens on the town.

2. Currently, recyclable waste is being separated into 27 categories, and the proportion of recycling through separation is increasing year by year. According to figures published by the Ministry of the Environment in FY2016, the recycling rate was 66.7%, which was seventh in the whole country.

### **Problems, and Responses**

1. Kururun has been operating for 12 years, and the equipment and the facility is aging. Pre-emptive maintenance is being carried out thoroughly to

prevent the occurrence of accidents and breakdowns, but there is a concern that maintenance costs will increase in the future.

2. The final goal is zero incineration and landfill use, but the short-term aim is a recycling rate of 80% or more, and to be number one in the country. 80% or more of kitchen waste and disposable diapers are collected separately, but a large amount of waste plastics and recyclable paper are being mixed in with rubbish for incineration. Thorough measures are being taken to encourage rubbish separation, like zero rubbish contests, environmental education, separation workshops, and deploying zero rubbish promotion officials, but there is a need to spread even more information to residents, and ask for increased cooperation.

## Future Developments

1. The facility is integrated with the roadside station, and progress has been made in developing the vegetable fields in the surrounding area. Fertiliser and energy are made from kitchen waste, and agricultural produce grown with that fertiliser is sold in the adjacent restaurant and shop. Vegetable harvesting trial experiences are offered in the surrounding fields, and there are plans to make the facility one that attracts even more people to come and experience the recycling of organic waste such as kitchen waste.

2. Zero waste presents a challenge to the common disposal by incineration. By cooperating with neighbouring municipalities and those throughout Japan, and increasing the group of municipalities aiming for zero waste, it can lead to more sustainable waste management in Japan.

## Reference URL

Okie Town Hall: <http://www.town.ooki.lg.jp>

Kururun: <http://kururun.jp>

Roadside station: <http://michinoeki.kururun.jp>

## Contact

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## Definitions of Technical Terms

Plastic containers and packaging:

Containers and packaging for products that aren't needed once the product has been used, or when separated from the product.