

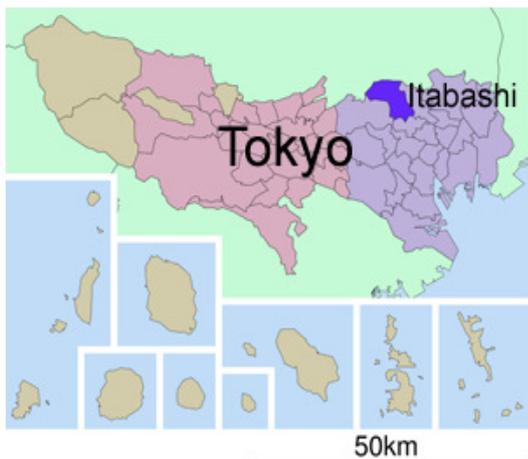


Japan Local Government Centre

Council of Local Authorities for International Relations

Itabashi city profile

One of the 23 special wards of Tokyo
Area: 32.17 km² (12.42 sq mi)
Pop'n: 531,793
Density: 16,270 /km² (42,139 /sq mi)



Creating new industry through glass recycling

Climate change and the depletion of energy resources are two of the main challenges the world is facing today. Under such circumstances the governments of developed countries, including Japan, have begun promoting 'Green New Deal' policies which focus efforts on the creation of environmental industries. This means there are increasingly more possibilities for environmental businesses to expand into global markets.

Itabashi, one of the 23 special wards of Tokyo, quickly picked up on this global movement and is now locally engaged in a glass recycling programme. The programme, which is headed by the Itabashi ward office in partnership with a wide range of private enterprises, aims to open up new markets using useful products made from discarded glass.

The two part programme concept cum marketing strategy aims to price the products at equal to or less than the price of existing products, and create high quality value added products using glass, with the overall aim to create market-competitive products.

Itabashi Glass Recycling Programme

The Itabashi Glass Recycling Programme involves the recycling of coloured glass bottles. In the past these types of glass bottles have proven difficult for local authorities to handle and typically the job has been passed on to outside companies, increasing costs for the local authority. To solve this problem Itabashi ward's new recycling programme endeavours to put recycled coloured glass to use as construction material.

The two step process involves the local authority providing glass bottles to a manufacturer, who then processes them into fine cullet (step 1), then after a process of further polishing (step 2) another manufacturer uses the cullet to make products such as pavement or building blocks. The local authority then uses these products in public works, thereby achieving a cyclical flow of resources. It also demonstrates the local authority's use of discarded glass and helps

to boost local industry by involving local construction and manufacturing businesses.

New Industrial Chain Business Model

Glass processed into cullet can be used for construction material such as building blocks, but the processing procedure also creates tiny pieces of glass waste less than 1mm in size. Until recently this type of glass waste was dealt with as industrial waste, adding considerable costs to the final product and robbing it of its price competitiveness. The *new industrial chain* system solves this problem by ensuring that the waste product is put to practical use as raw material in products such as coating agents for wall tiles or guard rails. This means that construction industry waste is used as raw material for the architecture or paint and coating industries. Different



Above: 500,000 bottles used to make the Yotsumata shopping district street

authority and the business involved. The Wine Block is proof of a system in which profitability is guaranteed from an environmental business model that includes local government participation.

High value-added products

Creating this new industry chain system is very well, but it would be unsatisfactory if it stopped at just being a means of recycling. The pavement of the Yotsumata shopping district near the Itabashi ward office is made from Wine Block slabs, and other recycled glass products are used for coating. Itabashi took a "recycle to redevelop" position in the regeneration of the shopping district as a vibrant centre, creating an attractive glass covered environment now known as 'Glass Town'. The visual appeal of the cityscape also plays a part in raising residents' awareness of recycling.

A large problem in Tokyo is the 'urban heat island' effect caused by heat retaining materials used to make buildings and roads, and various measures to combat it, such as building water retentive and highly reflective pavements, have been adopted throughout different parts of the city. Through Itabashi's programme the 'Water Retentive Wine Block' slab has been developed which, due to its glass properties, has proven to have a greater temperature reduction effect compared with other water retentive material. Also, compared to asphalt it has a maximum temperature reduction effect of 14.8 degrees.

It is estimated that ill health due to heat island related sleep disorders costs 4.4 billion yen (£28.83 million) per year in medical expenses in the metropolitan area made up of Tokyo's 23 special wards alone, so installing Water Retentive Wine Blocks around hospitals and welfare facilities can ease sweltering nights, enabling elderly people to live a more comfortable life and reducing medical expenses.

The Wine Block and Water Retentive Wine Block are ideal high value-added products which help overcome both the heat island effect and recycling



Above: Bollard made from glass

industries putting other industries' waste products to practical use creates a multi-industry chain system which reduces waste to near zero and helps create new markets through the creation of price-competitive products.

A good example of a product that has come from step 1 of the process is the so-called "Wine Block" slab (so named because it is mainly made from wine bottles, and the distinctive colours are still visible in the final product) for use as pavement. This product was developed through joint effort between the Itabashi ward local authority and private enterprise and is a registered trademark. Also, 20 yen (UK £0.13) per 1m² of "Wine Block" slabs used is paid to the local

issues.

Wide-area recycling oriented society

As the scale of Itabashi ward's market is not nearly big enough for this type of large scale environmental business the local authority has been working closely with neighbouring wards to develop a wide-area recycling programme.

There are in fact several local authorities that are making plans to use recycled glass bottles from the region in engineering projects, under the framework of the Tokyo Association of Glass Material Wholesale Traders, set up by the metropolis. If these types of agreements spread to more local authorities then the potential market size will expand, allowing these

environmental products to be traded as regular products. A cycle will also emerge where local authorities that have a shortage of discarded glass to use in public projects will be able to purchase glass from a neighbouring local authority. The result will be a wide-area recycling oriented society through a network of neighbouring local authorities.



Above: Glass pavement in the Yotsumata shopping district

Recycling creates industry and revitalises communities

Breaking away from mass production and mass disposal, changing to a system of resources recycling, and reducing CO2 for a low carbon society are issues which affect society as a whole, and creating environmental business markets through resource recycling systems while ensuring CO2 emissions are reduced is not something that can be accomplished under a single-company or single-local authority framework. The *new industrial chain system* is essential for eliminating waste at all stages and creating new markets while aiming for zero waste.

One final advantage of this new system is that once a market is created, the role of local authorities will be limited to placing construction orders, freeing them from the work and cost involved in recycling, such as collection.

When markets for environmental business become established under a wide-area system for cyclical resource use, local business will flourish and the community in the area as well. In this way, recycling contributes to creation of industry in and revitalisation of local areas and communities.



Original article: *Garasu risaikuru o tsujita sangyo soshutsu* by Ken Sakamoto, Executive Mayor of Itabashi ward, Tokyo, Shisei magazine, May 2009, Japan Association of City Mayors

Translated with permission by Jason Buckley, Communications Officer, Japan Local Government Centre, London Office

Japan Local Government Centre
15 Whitehall, London
SW1A 2DD
Ph. 020 7839 8500
Fax. 020 7839 8191
www.jlhc.org.uk