

## Ban on disposal drink containers and tableware in Munich, Germany (Münchner Einwegverbot)



### 1. Summary

|                                      |  |
|--------------------------------------|--|
| Country                              | Germany, Munich  |
| Level of implementation              | local  |
| Scale                                | Roll-out   |
| Waste fraction / Specific Waste Type | Packaging / disposable food and drink containers   |
| Target Audience                      | 1,3 million inhabitants of Munich city that take part in public events   |
| Objective                            | The local government of Munich banned the use of disposable crockery (paper plates, plastic cups, plastic forks and knives) at large-scale public events that take place on land owned by the city. The event organizers replace them by reusable items for which consumers pay a deposit that they get back when they return the items. |
| Initiator/coordinator                | City of Munich   |
| Other key actors involved            | MobielSpiel e.V other services for renting tableware and cups  |
| Duration                             | Since 1991   |
| Number in Mapping report             | 99   |
| Drafted by                           | ACR+ & IBGE 15/9/2011  |

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|-----------------|--|
| Contacts / URLs | <a href="http://www.muenchen.de">www.muenchen.de</a> ; <a href="http://www.awm-muenchen.de">www.awm-muenchen.de</a><br>Abfallwirtschaftsbetrieb <i>München</i> : Frederic Weihberg, Tel: 089 233-31407,<br>Email: <a href="mailto:frederic.weihberg@muenchen.de">frederic.weihberg@muenchen.de</a><br><a href="http://www.awm-muenchen.de/gewerbe/abfallvermeidung.html">www.awm-muenchen.de/gewerbe/abfallvermeidung.html</a><br><a href="http://www.awm-muenchen.de/fileadmin/PDF-Dokumente/gewerbe/Abfallvermeidungs_und_Trennpflicht_Grossveranstaltungen.pdf">www.awm-muenchen.de/fileadmin/PDF-Dokumente/gewerbe/Abfallvermeidungs_und_Trennpflicht_Grossveranstaltungen.pdf</a><br><a href="http://www.mstatistik-muenchen.de/sammelordner_monatsberichte/document/monatsberichte/heft_4_5_6_2001/heft4/abfallwirtsch.htm">www.mstatistik-muenchen.de/sammelordner_monatsberichte/document/monatsberichte/heft_4_5_6_2001/heft4/abfallwirtsch.htm</a><br><a href="http://www.muenchen.de/Rathaus/kom/presse/archiv2004/101433/20040910.html">www.muenchen.de/Rathaus/kom/presse/archiv2004/101433/20040910.html</a><br><a href="http://www.muenchen.info/soz/presse/ru_2011-080.pdf">www.muenchen.info/soz/presse/ru_2011-080.pdf</a> |
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## 2. Context

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In Germany, several cities took action against disposable food and drink container especially at events in the early 1990s. Munich was among these forerunners.

The development of the waste quantities of Munich reflects both the economic growth as well as the consumption and waste behavior of the population. Until 1960, waste volumes increased approximately at the same pace as population. Thereafter, until the 80s, an exponential increase in the amount of waste was recorded.

The first Munich "waste disposal plan" of 1975 envisaged increased incineration and landfilling of waste as a response to the growing waste quantities, but the population was increasingly reluctant to accept new waste disposal facilities. By the end of the 80s, the waste disposal situation in Munich became critical.

Only then came the realization that changing behaviors regarding waste could reduce the quantities. In 1988, the City Council unanimously adopted a completely innovative and ecological waste management concept, which already included the principles of the waste hierarchy: priority to waste prevention before recycling; recycling of waste is preferable to incineration; incineration is preferable to landfilling.

In the following years a number of waste prevention measures were implemented, including the ban on disposables described below. Behavioural change was supported by communication and advisory actions: 12 advisers on waste separation and prevention available to households and businesses and several communication campaigns were launched.

In Munich, events are authorized by the municipality (city council). Waste prevention and management measures, including inspections at events are enforced by the municipality owned company AWM The AWM (Abfallwirtschaftsbetrieb München). In 2009, the AWM represented a staff of 1349, 350 vehicles, 407.000 waste containers and 12 recycling centres. The household waste managed amounted to 313.500 tonnes of residual waste/year, 100.600 tonnes of wastepaper/year and 40.300 tonnes of organic waste/year.

## 3. Strategy

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### Objectives

Significantly reduce municipal waste generated by the use of disposable food and drink containers (packaging, cups and tableware), by banning their use at events taking place on land or in facilities owned by the city and retail spaces owned by the city.

### Preconditions

In 1991 in Germany, the local government of Munich banned the use of disposable crockery (paper plates, plastic cups, plastic forks and knives) and packaging (single-use cans, plastic or glass bottles...).

At first, through a by-law the sale of beverages in disposable packaging was to be forbidden throughout the city by all businesses. Munich's businesses went up in arms, and there ensued a legal battle regarding the by-law. As a result, both the Bavarian Administrative Court and later the Federal Administrative Court in Berlin judged that the Munich one-way ban did not take effect.

According to the decision the by-law did not respect federal law. The court confirmed, however, is that the political path of a ban was a reasonable solution. The *Süddeutsche Zeitung* summed it up: Munich's "disposable ban was right, but not legal."

### Procedure

What the city of Munich did not manage city-wide, it was able to enforce on its own land. On public land, since 1991, a by-law forbids the use and sale of disposable drink containers and tableware. The by-law<sup>1</sup> states: *"At events that are conducted on land or in facilities owned by the city, food and beverages may only be served in reusable packaging and containers that are subjected to a mandatory deposit scheme; this requirement also applies to retail spaces owned by the city. Potential financial support granted of facilities and events is conditional to compliance with this obligation. Exceptions to this requirement may only be allowed in special cases. "* Packaging and containers are considered reusable when they are foreseen for several reuses. The use of disposable (single-use) tableware is prohibited.

Violations of this duty can be punished with fines. Exceptions may be permitted only in particularly justified cases, upon written request.<sup>2</sup>

This obligation applies to all city facilities and events, such as the Munich-based weekly markets in the Olympic Stadium, Munich's Oktoberfest., the Christmas market, Auer-Dult Faire, and Munich City Marathon

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<sup>1</sup> Gewerbe- und Bauabfallentsorgungssatzung LandeshauptstadtMünchen (2003) § 4, Abs. 10 : *"Bei Veranstaltungen, die auf Grundstücken oder in Einrichtungen der Stadt durchgeführt werden, dürfen Speisen und Getränke nur in pfandpflichtigen, wiederverwendbaren Verpackungen und Behältnissen ausgegeben werden; diese Pflicht gilt auch für Verkaufsflächen, die im Eigentum der Stadt stehen. Eventuelle Förderungen von Einrichtungen und Veranstaltungen werden von der Einhaltung dieser Pflicht abhängig gemacht. Ausnahmen von dieser Pflicht können nur in besonderen Einzelfällen zugelassen werden."* [www.muenchen.info/dir/recht/273/273\\_20101203.pdf](http://www.muenchen.info/dir/recht/273/273_20101203.pdf) [accessed 30 August 2011]

<sup>2</sup> Abfall Wirtschaftsbetrieb München (AWM), „Abfallvermeidungs- und Abfalltrennpflicht bei Veranstaltungen auf städtischem Grund oder in städtischen Einrichtungen“ [www.awm-muenchen.de/fileadmin/PDF-Dokumente/gewerbe/Abfallvermeidungs\\_und\\_Trennpflicht\\_Grossveranstaltungen.pdf](http://www.awm-muenchen.de/fileadmin/PDF-Dokumente/gewerbe/Abfallvermeidungs_und_Trennpflicht_Grossveranstaltungen.pdf) [accessed 30 August 2011]

Moreover, for smaller-scale events (200-300 people), the City of Munich cooperates with MobielSpiel e.V offering the possibility to rent a crockery and dishwasher service. The City of Munich also promotes returnable bottles for beverage.

## *Instruments*

**By-law**, followed by selective **inspections** by AWM, supported by **rental services** of dishes and dishwashing unit as well as communication and advisory actions.

**Inspections:** The AWM controls randomly selected events, including major sporting events that are either reported by the local administration department in the wake of the permits or arising from the events calendar and the sports department of the Olympic Park GmbH. The inspectors have the task to advise on-site about the regulations in force on disposable and reusable packaging and observe violations of the regulations to ban disposables, to document them, and to prepare relevant reports and issue warnings. The first time a violation is noted against the disposable ban, the event organiser receives a letter from the AWM, which informs about the relevant statutes and regulations, the organizer is also invited to observe the regulations in the future. They will be advised of the possibility of a fine for violation, the organizers continue to receive information and counseling services of the AWM. In case of another violation of the organizer against the city's ban on disposable, after consultation with the organizer, the AWM has the possibility to impose a fine of up to 2500 EUR.



**Dish & dishwashing equipment rental services** are provided by many private organizations as well as the city. The city offer is the following: rental of mobile dishwasher (“Geschirrmobil”): a restaurant dishwasher, cables to connect electricity and water, a prewash sink, 120 sets of crockery (2 glasses, 2 plates, 2 forks, knife, 2 spoons...) for 300 to 1000 participants, lighting. The service includes transport and set-up, explanations and dish washing product, but the station itself needs to be manned by the event organizer. Costs: 170€/1 day, 215€/2 days, 250€/3 day weekend<sup>3</sup>

## *Timeframe*

In force since 1991, the bylaw provided continued incentives for the provision of dish rental & washing service providers. Continued inspections are needed every year to verify enforcement at selected events.

<sup>3</sup> AWM, “Geschirrmobil für Firmen” [www.awm-muenchen.de/privathaushalte/abfallvermeidung/geschirrmobil.html](http://www.awm-muenchen.de/privathaushalte/abfallvermeidung/geschirrmobil.html) [accessed 30 August 2011]

## **4 .Resources**

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Not available from the city of Munich.

### ***Financial Resources***

Enforcement costs (inspections, legal procedures) not available

### ***Human Resources***

Inspectors

### ***Equipment***

Reusable tableware and cups made available and washed by service providers and paid for by event organisers

Mobile dish-washing unit (see above).

### ***Communication Tools***

Website

Helpline (12 advisers on waste separation and prevention)

Communication campaigns

### ***Allocation of resources over time***

Not available

## 5. Evaluation

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### Results

#### - Participation

In 2010, [in the case of sport events], the AWM controlled 20 events. For 9 events the AWM made complaints/warnings, among which 2 fine proceedings were launched. In one case, the organizers accepted the fine of € 2500.00 (maximum) and paid. In the other case, the organizers appealed against the fine to the district court appeal. The court then confirmed in the proceedings, that the fine was imposed by the AWM in accordance with the law;. Because of the low income of the Promoter and its relatively small size of the event, however, the amount of the fine was reduced.<sup>4</sup>

In Germany and Austria surveys among event participants have shown that they are well aware of the environmental benefits of reusable food and drink containers and that they are overwhelmingly favourable to their use

#### - Avoided waste quantities (or toxicity)

In Munich, overall, between 1990 and 2004, the overall amount of waste generated by events decreased by 50% (and the amount of non-selectively collected waste by 75%).

Quantitative data is available for specific events for which AWM provided waste disposal services both before and after the enforcement of the by-law. Notably, waste generated during the Oktoberfest (beer festival), attracting tens of thousands of people from all over the world, was reduced from 11,000 tonnes in 1990 to 550 tonnes in 1999. Since this event is based on a strong ecological concept, it received the “Eco- Oscar” award by the Federal Government of Germany in 1997.<sup>5</sup>

#### - Other results

The long-term existence of the ban provided and ongoing incentive for businesses to engage in the provision of reusable tableware and cups and dishwashing services.

### Impacts

#### - Avoided Costs

For the municipality, inspections entail additional staff costs, but infringements also lead to fines of up to 2500 EUR and thus revenue.

For the event organizers, the cost saving in terms of costs of disposable containers and their disposal must be weighed against costs of obtaining dishes and washing them to establish the net cost or benefit. Generally, large scale events benefit from economies.

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<sup>4</sup> Landeshauptstadt München, „Rathaus Umschau“ (28/4/2011), [www.muenchen.info/soz/presse/ru\\_2011-080.pdf](http://www.muenchen.info/soz/presse/ru_2011-080.pdf) [accessed 30 August 2011]

<sup>5</sup> EMAS network “Efficient Waste Management” (2003-2007) [www.emasnetwork.org/FCKeditor/data/File/factsheets/Waste%20Management.pdf](http://www.emasnetwork.org/FCKeditor/data/File/factsheets/Waste%20Management.pdf) [accessed 30 August 2011]

For drink cups, it is estimated that the higher investment of purchasing reusable cups compared to disposable ones is recovered after 7 to 11 reuses, taking into account the cost of providing and washing the cups as well as of street cleaning and waste disposal.

In the case of **food provision**, at small scale events, fixed costs (e.g. hiring a mobile dish washing unit) can make it up to 40% more expensive to use reusable dishes compared to disposable plastic plates. Experiences in Vienna have shown that reusable tableware started to be competitive for events with at least 500 participants consuming on average 1 dish and 2 drinks. At large scale event, the use of reusable tableware can achieve cost savings of up to 50%.

### **- Avoided CO<sub>2</sub> equivalents**

Reusable containers are significantly heavier than disposable ones and require more materials to produce them. Moreover, additional water and energy is needed to wash them, to transport them, and to transport on-site washing equipment.

The additional impacts need to be balanced out by a sufficiently high “trip rate” (the number of times a container is on average reused during its entire useful life) and significant savings related to waste prevention.

The outcomes of comparative studies of reusable versus disposable food and drink containers hinge on underlying assumptions on impacts per trip and estimated number of trips. Differences in these assumptions have led to diverging results.

Several German, Austrian and Swiss comparative environmental assessments have strongly concluded that there are clear environmental benefits to reusable drink containers at large scale events, and their assumptions are grounded in experience.

For instance in a 2008, Österreichisches Ökologie Institut, Carbotech AG and Öko Insrtitut e.V. jointly carried out a comparative study of different cup systems for serving drinks at large scale events such as the UEFA EURO 2008 cup.<sup>6</sup> It concluded on clear environmental benefits of reusable cup systems over all disposable cup systems for such large scale events. Environmental impact of washing the cups could be lowered further by using electricity from renewable energy sources. The home use of the number of cups that are not returned to the system but taken home especially if the cup is attractively decorated has a strong influence on the assessment of the full life cycle of the cups and should not be excluded. Home use was studied in detail based on concrete cases.

OVAM, the Public Waste Agency for the Flemish Region compared environmental and economical aspects related to the use of specific types of cups on events. The main reason for this was the, introduction and use of the one-way cup in polylactide (PLA), a renewable material, at events in Belgium. Four alternative types of cups for use on events are examined: re-usable cup in polycarbonate (PC);, one-way cup in polypropylene (PP); one-way cup in polyethylene (PE) coated cardboard; one-way cup in polylactide (PLA).

According to OVAM, the environmental score gets significantly better for reusable cup systems than the best one-way option if the cup is reused at least a certain number of times: The turning point for small events (trip rate 32) is lower than the trip rate in the basic scenario (trip rate 45) and thus is considered realistic and feasible. The turning point for large events (trip rate 37) is much higher than the basic trip rate (trip rate 20) and thus less realistic and difficult to achieve.

It must be noted that trip rates assumed by OVAM in their basic scenarios are well below those observed at large scale events in Germany/Austria/Switzerland where reuse systems are already in place which may explain in part the diverging results of assessments. In the case of German Football stadiums, the worst example was Stuttgart with a trip rate of 60 and the average trip rate for

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<sup>6</sup> Österreichisches Ökologie-Institut, Firma Carbotech AG & Öko-Institut e.V. Deutschland, “Vergleichende Ökobilanz verschiedener Bechersysteme beim Getränkeausschank an Veranstaltungen“ (2008) [www.oekoevent.at/wp-content/uploads/2010/08/1ca-cups\\_oekobilanz-getraenkebecher\\_2009.pdf](http://www.oekoevent.at/wp-content/uploads/2010/08/1ca-cups_oekobilanz-getraenkebecher_2009.pdf) [accessed 30 August 2011].

Germany was 107 (not even taking into account subsequent home use). Moreover, the OVAM study does not consider subsequent home use of non-returned cups.

### **- Social Benefits**

The use of reusable food and drink containers at events can create employment in services renting and washing cups and table ware.

### ***Continuation over time***

Long term action

### ***Difficulties encountered***

Not all events can be checked systematically. Some argue that it is therefore not systematically implemented.<sup>7</sup>

### ***Monitoring System***

Not available

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<sup>7</sup> Deutsche Umwelthilfe „Münchener Mehrweggebot wird nicht durchgesetzt: Weiter Einweg in der Allianz-Arena“ (29/6/2011) [www.presse-meldungen.com/2011/06/29/munchener-mehrweggebot-wird-nicht-durchgesetzt-weiter-einweg-in-der-allianz-arena/](http://www.presse-meldungen.com/2011/06/29/munchener-mehrweggebot-wird-nicht-durchgesetzt-weiter-einweg-in-der-allianz-arena/) [accessed 30 August 2011].



## 6. Lesson learnt & recommendations

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### ***Opportunities & Challenges***

The reuse (“trip”) rate of reusable food and drink containers must be sufficiently high for a reuse system to be more advantageous than one-use systems.

The willingness of organizers and caterers to use reusable meets organizational and financial problems. The switch from disposable to reusable materials requires prior knowledge about the collection and cleaning of reusable dishes, as well as hygiene and logistics. It helpful if the organizers hire a company that provides to all caterers reusable dishes and, if these are washed on site, as is the case with Brigandenfest in Karlsruhe and at the Carnival of Cultures Festival in Berlin or the environment.<sup>9</sup>

### ***Key factors of success***

When requiring and encouraging the use of reusable food and drink containers at events it is recommended to put an emphasis on large scale and renowned events<sup>9</sup> because

- Large scale events generate the largest waste quantities.
- At events of 500 visitors reusable tableware starts to yield cost savings.
- Once the infrastructure for rental and washing of dishes is in place, it can be used by a wider range of event organisers and caterers who may have been less committed at first.
- Renowned events act as strong examples for others to follow.

Inspections are key to ensuring the actual enforcement of the requirements.

### ***Recommended improvements/adaptations***

Find ways to extend the requirements to other events and locations (not only on land owned by the city).

### ***Recommended indicators & monitoring***

Number of cups in circulation, trip rate, avoided waste quantities.

## 7. Comparison with similar actions

### *In different location/context*

#### Mandatory reuse at Events in Vienna

In the new Viennese Waste Management Act, the use of returnable [food and beverage containers] at events is mandatory.

Since January 2011, in accordance with § 10 d of the Viennese Waste Management Act, there is an **obligation to use returnable containers at events where food or beverages will be served.**

applies to events

- at which **more than 1,000 people** can take part or
- At which more than more than 500 people can take part in venues for which there is an unlimited suitability determination pursuant to § 21 of Vienna's event act or
- taking place **on properties that are owned by the Federal capital Vienna.**



It requires that drinks be served from reusable bulk containers (e.g. drums, reusable bottles) as far as these. When distributing food, reusable tableware and cutlery (e.g. made of glass, ceramic, metal or plastic) must be used. When this is not allowed for safety policy reasons, packaging, containers, tableware and cutlery made of renewable raw materials (e.g. cardboard or wood) must be used. Appropriate measures for the return of used reusable products must be taken

Moreover, in accordance with **must establish a [...]**

Detailed information is available on the [website of the Department of Environmental Protection - MA22](#)<sup>8</sup>.

#### Other German municipalities

Nürnberg 1989, Freiburg 1990, München 1990, Weimar 1994...<sup>9</sup>

<sup>8</sup> Vienna City Administration „Abfallkonzepte und Mehrweggebot für Veranstaltungen“ (2011) [www.wien.gv.at/umweltschutz/abfall/gross-veranstaltungen.html](http://www.wien.gv.at/umweltschutz/abfall/gross-veranstaltungen.html) [accessed 30 August 2011].

<sup>9</sup> Büro für Umweltwissenschaften Berlin, Dr. Norbert Kopytziok „Paradebeispiele: Bei Straßenfesten können Kommunen und Veranstalter auf vorbildliche Weise Abfälle vermeiden“ [www.uwi-berlin.de/texte/77-strassenfeste.pdf](http://www.uwi-berlin.de/texte/77-strassenfeste.pdf) [accessed 30 August 2011].