Smart City – Good Practice

**Waste**

# SMILE – Sustainable Management of Local Electronic Waste

**Istanbul, Turkey**

## SMILE - Sustainable Management of Local Electronic Waste

**The SMILE project was the first action addressing electronic waste disposal in Istanbul. Before the project started, the departments of the Istanbul Metropolitan Municipality (IMM) were not qualified for waste disposal and the citizens of Istanbul had low awareness on this issue. SMILE supported the implementation process of national electronic waste disposal regulation, which was legislated recently, but not implemented yet. It aimed to collect electronic waste, to repair devices if possible, to create an inventory of collected materials and to determine the pieces that could be recycled [1].**

**It was financed by the EU LIFE Programme, which aims to support EU candidate countries in implementing environmental policies. SMILE defined the framework for electronic waste management regarding collection systems, reuse, recycling, safe disposal, database creation, implementation of measures and most importantly, it helped municipalities to increase their technical and administrative capacity for electronic waste disposal management [2].**

## Country/ City Profile


| Country | | City | |
|---|---|---|---|
| Population (2014) | 78 million [3] | Population (2014) | 14 million (metropolitan) [3] |
| Land area (km²) | 783,562 | Land area (km²) | 5,461 [5] |
| GDP per capita (2014, US$, at purchasing power parity) | 10,830 [4] | GDP per capita (2008, US$, at purchasing power parity) | 14,591(metropolitan) [6] |
| Region | Europe, Asia | Region | Coastal |

| City's physical geography | | |
|---|---|---|
| | Location | ✓ Located in north west of Turkey, Marmara Region<br>✓ The city extends over two continents; Europe and Asia, divided with Bosporus |
| | Climate | ✓ Mild wet winters, dry hot summers<br>✓ Average temperature : 13.5°C |

## Initiating context

SMILE was funded by the European Union and coordinated by the Istanbul Metropolitan Municipality (IMM). The purpose of the project was to prepare plans and databases and to implement measures for collection, reuse, recycling and a safe disposal of electronic waste. The mission of IMM for this project was to separate electronic from domestic waste, to raise public's awareness regarding the importance of electronic waste management and to help producers of electronic devices to collect the electronic waste [7].

## Project description

SMILE provided a collection and registration system for electronic waste, a storage facility for that collected waste and an investigation team to separate devices in reusable, recyclable and dangerous. After the collection, separation and registration process, reusable electronic devices were repaired and sent to other institutions for re-use, the recyclable pieces of unusable devices were divided and sent to recycling facilities, the dangerous pieces were disposed safely and the rest was disposed in special disposal areas [8].

The project targeted to collect and register at least 6,000 devices and to repair about 60% thereof. In addition, this pilot project aimed to improve the framework of the national legal regulation on electronic waste management, which is not implemented yet [1].

### Implementation process

The project involved public institutions, private companies and citizens. These institutions, companies or private citizens donated their old devices e.g. old computers and equipment voluntarily. The devices were categorised as reusable, recyclable or as dangerous waste. Reusable devices were repaired and given to educational or public institutions. If it was not possible to repair devices, they were divided per material and send to recycling facilities. Dangerous waste was send to licenced firms for disposal [1].

The budget of the project was 739,899 € which was financed by the EU and IMM. The budget of IMM for this project was 463,999 € [7]. The technical staff was educated by the Greek partner ERS [2].

| Projects implementation details | |
|---|---|
| **Process** | SMILE was operated between 03/2007 and 09/2009, but IMM has continued the operation of electronic waste management the years after<br>IMM collected old computers and equipment from companies, institutions or private citizens<br>Computers and equipment were categorised as; Reusable, Recyclable and Dangerous<br>Repaired computers and equipment were donated to schools or public institutions |
| **Leadership** | Istanbul Metropolitan Municipality (IMM)<br>Partners: Association of Environmental and Cultural Protection (CEVKU)<br>Ecologic Recycle Association (ERS), Greece |
| **Financing** | Istanbul Metropolitan Municipality, EU |
| **Involved stakeholders** | Public Institutions, Private Companies, Citizens, Municipality |

### Results

The project did not pay out economically for IMM. Measures implemented helped to 100% recycle materials like steel, however due to legal restricitons, the IMM could not sell recycled material at the market. Moreover, the IMM had to pay for disposal of dangerous material [1].

The project however contributed to environmental sustainability by repairing, recycling and disposal of electronic waste. Repairing and recycling of electronic waste is crucial as electronic equipment has significant impacts on the environment from production phase to disposal [1].

Donations of repaired computers or equipment also led to social benefits of the SMILE project. Many schools in Turkey, especially those located in the east side of the country, lack equipment and technology. Repaired computers were donated to that schools [1].

The project officially ended in 2009 but, considering the environmental and social benefits of the project, IMM continued with electronic waste management after [2].

### Lessons learned

Processes conducted under the SMILE project were highly related to citizen's participation. The project showed that citizens wanted to be involved [1]. Thus, the national legal regulations for electronic waste disposal should come into force as soon as possible. First stages of implementation so far however have shown that the process is costly for the municipality, which is in turn possibly damaging the sustainability of the project. Therefore, new financing opportunities and solutions need to be discussed.

## References


[1] Turkiye Surdurulebilir Kalkinma Raporu: Gelecegi Sahiplenmek, Surdurulebilir Kalkinma En Iyi Uygulama Ornekleri (2012): http://www.temizuretim.gov.tr/Files/uygulamaornek/rio20_iyi%20uygulama%20%C3%B6rnekleri.pdf

[2] Istanbul Metropolitan Municipality, webpage: http://www.ibb.gov.tr/sites/lifesmile/Documents/defaulteski.htm

[3] TUIK (2014): http://www.tuik.gov.tr/UstMenu.do?metod=temelist

[4] World Bank (2014): GDP per capita: http://data.worldbank.org/country/turkey/turkish

[5] Istanbul Metropolitan Municipality, webpage: http://www.ibb.gov.tr/tr-tr/kurumsal/pages/ilceveilkkademe.aspx

[6] Istanbul Buyuksehir Belediyesi Imar ve Sehircilik Daire Baskanligi Sehir Planlama Mudurlugu, (2009), 1/100,000 Olcekli Istanbul Cevre Duzeni Plani Raporu, Istanbul. http://www.ibb.gov.tr/tr-TR/kurumsal/Birimler/SehirPlanlamaMd/Documents/100.000%20%C3%96l%C3%A7ekli%20%C3%87evre%20D%C3%BCzeni%20Plan%C4%B1%20Sunum%20TR.pdf

[7] Istanbul Metropolitan Municipality, webpage: http://www.ibb.gov.tr/tr-TR/Pages/Haber.aspx?NewsID=16356#.VwI_bfl97IU

[8] Istanbul Metropolitan Municipality, webpage: http://www.ibb.gov.tr/sites/Avrupa-Birligi/ABFonlari/Sayfalar/ABProjeler.aspx


## Author/Contact


**© Istanbul Technical University**

Faculty of Architecture

Taskisla/Beyoglu/Istanbul

http://www.itu.edu.tr/