

İSTAÇ A.Ş.

Introduction

İSTAÇ A.Ş., was founded in 1994 as an economic enterprise of Istanbul Metropolitan Municipality for appropriate disposal of solid waste.

İSTAÇ A.Ş., as of the year it was founded, embarked on many new practices within the framework of national and international standards, and became one of the most prominent organizations of Turkey about especially "Solid Waste Management." During the last five years, the organization expanded its fields of application to water, air and soil pollution. İSTAÇ A.Ş. shares its 19 years of technical knowledge and technologic infrastructure on solid waste and environment at first with Istanbul and with the entire country.

Within the scope of waste management, the enterprise works on setting up and operating landfill areas, collection and incineration medical waste, production and recovery of compost from organic waste, generating electricity from landfill gas (LFG), cleaning coasts, main arteries, squares and streets, leachate treatment, management of construction and demolition waste, management of packaging waste, collection and disposal of bilge, slop, etc. from ships, stream base sludge search and improvement works, operation of demolition sites, generating new fuel from non-recyclable waste (RDF), management of industrial waste, modeling air pollution.

Preparing the "Integrated Solid Waste Management Strategic Plan in accordance with EU Environmental Legislation" in 2005, İSTAÇ A.Ş. has specified the strategy and targets of solid waste management in Istanbul until 2027.

Our Vision

Our Vision is to be a leading company producing the most economical solutions with appropriate technology and competent staff with a point of view that handles the environmental problems in a holistic way.

Our Mission

Our mission is to produce solutions for more livable environment in agreement with international standards and construct an environmental conscious.

Employee Number

2000 people including service procurement personnel

Our Waste Management Strategy



Our Brief Historical Profile

İSTAÇ A.Ş. has been always developing its activity application and service area from the foundation year of 1994:

1995

- Asian and European Side Landfill Sites
- Collection of Medical Waste
- Medical Waste Incineration Facility
- 4 Transfer Stations (2 in European Side, 2 in Asian Side)

1996

- 1 Transfer Station (European Side)

2001

- European Side Compost and Recovery Facility
- Hasdal Energy Production Facility from Landfill Gas
- Debris Waste Management

2002

- Cleaning of Main Arteries

2003

- 1 Transfer Station (Asian Side)

2005

- Asian and European Side Leachate Pre-Treatment Plants
- Weighbridge Automation System
- Construction and Demolition Waste Management
- Packaging Waste Management

2006

- Collection of Marine Waste
- Haydarpaşa Marine Waste Reception and Treatment Plants
- Operation of Demolition Areas

2007

- Asian Side Windrow Composting and Recovery Facility
- Environment Laboratory
- Asian and European Side Leachate Treatment (MBR+NF) Plants
- European Side Silivri Transfer Station

2008

- RDF(Refuse Derived Fuel) Facility
- Granule Facility
- Kirac Training and Practice Center
- Energy Production Facility from Asian and European Landfill Site
- Medical Waste Sterilization Facility
- Construction and Demolition Waste Recovery Facility

2009

- Biogas and Energy Production from Organic Fraction Solid Waste (Biometanization)
- Domestic Solid Waste Incineration Facility
- Industrial Waste Management (Construction of Landfill and Incineration Facility)
- European Site Windrow Composting Facility

Operations

- Operation of Two Landfill Sites
 - 1. European Landfill Site : 9.000 tons/day
 - 2. Asian Landfill Site : 5.000 tons/day
- Composting and Recycling Facilities
 - European Site Proses Composting and Recycling Facility : 1000 tons/day
 - Asian Site Recycling Facility and Windrow Composting : 2000 tons/day
- Leachate Treatment Plants (MBR+NF)
 - 1. European Site Leachate Treatment Plant : 3.000 m³/day
 - 2. Asian Site Leachate Treatment Plant : 2.000 m³/day
- Medical Waste Incineration Plant
 - Capacity of Plant : 24 tons/day
- Energy Generation from Landfill Gas (LFG)
 - Capacity of Plant : 4 MW/h
- Haydarpaşa Marine Waste Treatment Plant
 - Capacity of Plant : 42 m³/hour
- RDF (Refuse Derived Fuel) Plant
 - Capacity of Plant : 10 tons/hour
- Granule (PET and PVC) Plant
 - Capacity of Plant : 0,5 tons/hour
- Main Arteries and Squares Cleaning
 - European Site : 3.500.000 m²/ day
 - Asian Site : 1.500.000 m²/day
- Coastline, Beach and Stream Base Cleaning
 - Total Coastline : 465 km
 - Collected Waste from Coastline and Beaches : 30.000 m³/ year
 - Stream Base Waste and sludge : 200.000 m³/ year
- Sea Surface Cleaning
 - Collected Waste Amount : 2.000 m³/ year

Machine Park

- Road Sweeping Vehicle : 221
- Road Washing Vehicle : 82
- Sea Surface Cleaning Ship : 7
- Beach Cleaning Machine : 5
- Waste Reception Vessel : 15
- Jet-Broom Multi-Functional Vehicle : 1
- Medical Waste Collecting Vehicle : 18
- Heavy Work Machine : 51
- Hazardeous Waste Collecting Vehicle : 3

Main Achievements / Core Competencies

- **Main Products**

- Refuse Derived Fuel (RDF)
- Compost
- Granule
- Stabilization material

- **Working Themes of Our Group**

- Production and recovery of compost from organic waste
- Recycling and reuse of plastic solid wastes
- Recycling and reuse of plastic solid wastes as an alternative fuel
- Recycling and reuse of construction and demolition waste
- Collection and incineration of medical waste
- Optimization of collection and transport
- Management of sludge treatment
- Industrial waste management
- Marine waste treatment
- Management of packaging waste
- Renewable (Biometan) Recovery Technologies of Organic Solid Wastes
- Incineration

Reference Projects:

- **Selection of European/International projects**

- Leachate Treatment (MBR+NF)

In Istanbul, two treatment plants with a capacity of 1200 m³/day and 2000 m³/day have been constructed in order to treat leachate produced from the solid waste landfill sites in accordance with legal standards. In treatment plant, MBR and NF technologies were used. The project was carried out with a membrane Netherlands company and the plants are operated in full scale.

- Istanbul Health Sector (Medical, Hazardous And Infectious) Vocational Training Project About Waste Management (funded by Leonardo Da Vinci)

The aim of this project is to contribute to bring the vocational training system about medical waste management in Istanbul and the qualification, knowledge and ability of the trainers in these trainings into conformity with EU member countries.

The partners of this project:

- Istanbul Special Provincial Administration
- Istanbul Provincial Health Directorate
- Athisa Group, Spain
- Granada University
- IZAYDAS Co. – Izmit Waste and Residue Treatment, Incineration and Recycling Co.Inc.
- Yildiz Technical University

- ESTeSL - Escola Superior de Tecnologia da Saúde de Lisboa
- ISTAC Co.
- Istanbul Provincial Environment and Forest Directorate

- **R&D Projects**

Some of the projects that are being carried out by İSTAÇ A.Ş. are given below.

- Searching For The Opportunities Of Obtaining Alternative Fuels For Cement Factories From Domestic Wastes (funded by TÜBİTAK, Project Budget €1.450.000, Project Partners: Akaçansa A.Ş, TUBITAK-MAM)
- Researching of Applicability of the Compost in Agricultural Fields and Recreational Areas (funded by TUBITAK, Project Budget €1.250.000, Project Partner: Sabancı Uni. Selçuk Uni., Ministry of Agriculture and Rural Affairs)
- Investigation of Renewable (Biometan) Recovery Technologies Through Together Treatment of Domestic Wastewater and Organic Solid Wastes (Funded by TUBITAK, Budget \$ 990.614, Project Partners: Ministry of Environment and Forestry, Istanbul Technical University)
- The Potential Relevance of Ammonia-Oxidizing Archaea in Engineered Environments (Funded by TUBITAK, Budget \$ 284.436, Project Partner: Istanbul Technical University)
- Determination Of The Aerobic And Anaerobic Degradation Processes Of Solid Wastes In Sanitary Landfill Test Cells (Funded by TUBITAK, Budget \$ 244.621, Project Partner; Yıldız Technical University)
- Power Generation Projects In Odayeri And Kömürcüoda Landfill Sites (Energy Generation : 35 MW/day)
- Collection and Transport Optimization
- Biogas and Energy Production from Organic Fraction Solid Waste
- Industrial Waste Management (Landfilling, Incineration Plant)
- Management of Treatment Sludge
- Utilization of waste heat of Power Generation Plant from landfill gas in greenhouses(Funded by ISTKA, Budget \$ 334.408)
- Researching of using waste water treatment Sludge as alternative fuel in Cement Factories (Funded by TUBITAK, Budget \$ 498.707, Project Partner; TUBITAK MAM)
- Researching of applicability of the water treatment sludge in brick production(Funded by TUBITAK, Budget \$ 251.992, Project Partner; TUBITAK MAM)

Experiments

İSTAÇ A.Ş. has executed the “firsts” in Turkey in the areas of solid waste and environment, and it shares its obtained knowledge with whole Turkey, Istanbul being the first. The Consultancy Services and Trainings given in this context:

- **Consultancy Services**

- Technical Assistance for Management of the Antakya Landfill Facility in Line with International Standards (Consulting to BTC Co for preparing Waste Management Plans and Implementation of the project, Budget \$ 557.000)
- Trabzon – Rize Waste Management Project
- Bayburt Waste Management Project
- Bitlis Waste Management Project
- Kütahya Waste Management Project
- Erzurum Waste Management Project
- Pakistan Lahore Waste Management Project

- **Trainings**

- Solid Waste Landfill Systems (9-12 May and 13-16 June 2005)
- Medical Waste Method & Disposal Technologies (25-27 July 2005)
- New Technologies in the Waste Method (20-21 October 2005)
- Solid Waste Landfill Systems and Rehabilitation of Dump Site (22-24 May 2006)
- Solid Waste Management in Turkey in the EU Process and Environmental Problems Symposium (TURKAY 2007), (28-31 May 2007)
- City Management, Human And Environmental Problems Symposium’08 (3-6 November 2008)
- Integrated Solid Waste Management 24-28 November 2008)
- Composting System and Using Area of Compost (18-19 June 2009)
- Environment and Recovery Trainings in Istanbul (student number that is planned to be trained in 10 years: 2.244.900; student number that has been trained in 3 years: 668.000)

What Makes Us A Good Partner

- **Specified Properties**

- Highly educated multiple disciplined professionals
- Well-qualified workforce
- Research and development background
- Expertise in large scale projects, waste management, municipal solid waste
- National and international projects
- Quality management system

- **Technical Facilities**

- In Environmental Laboratory, instituted within the scope of the project supported by TUBITAK, analyses within the context of Landfill Directive, Hazardous Waste Directive, Sludge Directive, and Waste Water Directive are carried out.
- Data collection and assessment of these data in order to provide a waste management system for different type of waste

Publications

1. Saral, A., Demir, S., **Yildiz, S.**, (2009) "Assesment of odorous VOCs Released from a Main MSW Landfill Site in Istanbul-Turkey Via a Modelling Approach" Journal of Hazardous Materials, doi:10.1016/j.jhazmat.2009.02.043
2. Kara M., Gunay E., Tabak Y., **Yildiz S.**, "Perspectives for Pilot Scale Study of RDF in Istanbul, Turkey", Waste Management Journal, Aralık 2009.
3. Mustafa Kara, M.,Günay, E.,Tabak,Y., **Yildiz, Ş., Enç, V.**, (2009) "Atıktan Türetilmiş Yakıtın Çimento Üretiminde Emisyon Açısından İrdelenmesi". NUCLEAR&RENEWABLE ENERGY RESOURCES CONFERENCE With INTERNATIONAL PARTICIPATION 28-29 September 2009 Ankara – Turkey
4. Onat A, Yazici A, Agac D, **Yildiz S**, Altinbas M, Ozturk I, Ciftci T, Cakmak I, Ozturk L. (2008). Application of Municipal Solid Waste Compost Improved Plant Growth in Boron-Toxic and Zinc-Deficient Soils. Proc. of Compost and digestate: sustainability, benefits, impacts for the environment and for plant production (CODIS), February 27-29, 2008, Solothurn, Switzerland.
5. Onat, A., **Yildiz, S.**, et al (2008). "Municipal Solid Waste Compost Greatly Improved Plant Growth on Zinc Deficient Calcareous Soils". The 8th International Conference on Ecobalance. 31 May 2008
6. Kara, M., Gunay, E., Tabak, Y., **Yildiz, Ş., Enc, V.**, "The Usage of Refuse Derived Fuel from Urban Solid Waste in Cement Industry as an Alternative Fuel", 6th IASME/WSEAS International Conference on Heat Transfer, Thermal Engineering and Environment (HTE'08)/ Rhodes, pp, 172-177, August 20-22, 2008, Greece.
7. Onat A, Arikan O, Yazici A, **Yildiz S**, Ozturk I, Ciftci T, Cakmak I, Ozturk L. (2008). "Natural Zeolite Stabilizes Sodium and Boron In Municipal Solid Waste Compost." Proc. of Celebrate the International Year of Planet Earth: 2008 Joint Annual Meeting October 5-9 2008, Texas, Houston, USA
8. **Yildiz, S., Saltabas, F., Enc, V.**, (2008). "RDF production from non-source seperated MSW for cemet industries: İstanbul case study", VENİCE 2008 Second International Symposium on Energy from Biomass and Waste, 17-20 November 2008, Venice, İtaly.
9. Onat A, Arikan O, Yazici A, **Yildiz S**, Ozturk I, Ciftci T, Cakmak I, Ozturk L. (2008). "Municipal Solid Waste Compost Greatly Improved Plant Growth on Zinc Deficient

- Calcareous Soils." Proc. of 8th International Conference on EcoBalance December 10-12, 2008, Tokyo, Japan. pp. 797-798
10. Woelders, H., **Yildiz, Ş.**, Schonewille, H., (2007). "Full Scale Leachate Treatment by Nanofiltration in Turkey and the Netherlands". Sardinia 2007, Padova, İtalya.
 11. Altınbaş, M., **Yildiz, Ş.**, VD.(2007). "Full Scale Aerobic Composting Experience on Municipal solid Waste (MSW) Composting Plant in Istanbul", Sardinia 2007, Padova, İtalya.
 12. Pekin, A., **Yildiz, Ş.**, vd. (2007). "Searching for the Opportunities of Optioning Alternative Fuels for Cement Factories from Domestic Wastes". TÇMB International Cement and Concrete Sustainable, Volume 1, s:396-405, 21-23 May 2007, Istanbul.
 13. **Yildiz, S.**, Willis T., Wolf, D., Ciraci, Y. (2003). "A Proposal for the Renovation of the Louisville Recycling Operation". Engr5020 course project, Robert Morris University, Engineering management Department, Pittsburgh.
 14. **Yildiz, S.**, & Demir, A., et al. (2001). "Solid Waste Management In Istanbul". 1st International Solid Waste Congress, pp.11-18, Dokuz Eylul University, Cevmer, Izmir.
 15. **Yildiz, S.**, & Goncaloglu, B.,& Apaydin, O. (2001). "Istanbul Kil bariyerlerin katı atık düzenli depolama sahalarında geçirimsiz tabaka olarak kullanılması ve İstanbul depolama sahalarındaki uygulamalar". 10th International Clay Symposium, pp.173-183, Mersin.
 16. **Yildiz, S., Balahorli V., Saltabas F., Sezer K.**, "Biogas Production from Organic Waste (Biometanization) Project; Istanbul Case Study" International Energy And Environmental Fair and Conference (ICCI), 2009
 17. **Saltabas F. Kiris A., Tombul B., Hatipoglu M., Baldassarre M.** Solidification/ Stabilization Of Incineration Plants Residues" 3rd International Conference on Hazardous and Industrial Waste Management ,Crete Greece,2012

Global Networks And Clusters

1. The Scientific and Technological Research Council of Turkey (TUBITAK), Marmara Research Center (MRC), Turkey
2. Istanbul Metropolitan Municipality
3. ISKI-Istanbul Water and Sewage Administration
4. Norit Membrane Technology B.V., Netherlands
5. Baku-Tbilisi-Ceyhan Pipeline Company-Turkey Branch, Turkey
6. Granda University, Spain
7. Athisa Grupo, Spain
8. ESTeSL - Escola Superior de Tecnologia da Saúde de Lisboa , Portugal
9. Ministry of Environmental and Forestry, Turkey
10. Istanbul Technical University, Turkey

11. Yildiz Technical University, Turkey
12. Bogazici University, Turkey
13. Sabanci University, Turkey
14. Ministry of Agriculture and Rural Affairs, Turkey
15. Istanbul Special Provincial Administration
16. Istanbul Provincial Health Directorate
17. Stockholm Municipality, Swedish
18. Nacka Municipality, Sweden

Contact Details

Istanbul Environmental Protection and Waste Material Recycling Production and Trading Company, ISTAC Co.

Contact Person : Mustafa HATIPOGLU (Chemical Engineer)
Address : Ferikoy, Piyalepasa Bulvari No:74 34379 Sisli / ISTANBUL
Mail address : mhatipoglu@istac.com.tr
Tel : +90 212 230 60 41
Fax : +90 212 230 53 88
Web address : <http://www.istac.com.tr>