

Quezon City, Philippines

City Information

Population: 3,085,227 (source: NSO projection, 2014)

Area (km²): 161.126 sq.km.

Climate: (source: CLUP 2010-2030)

- Rainy season from May to November with peak from July to September
- On temperature, the average high is 34°C in April and May, 30°C in December and January while the average low for the same months is 24°C to 25°C (April, May) and 22°C (December, January)



Main Economic Activities: (source: www.quezoncitybusiness.com)

- As of 2013, Quezon City has a total of 64,515 formally registered businesses.
- In terms of type of businesses, 25.6% of the enterprises are engaged in retail, 25.8% are contractors, 9.1% are in wholesale trade, 5.0% are restaurants/eating establishments, 3.2% are financial institutions and 1.5% are involved in manufacturing/production. About 30 to 40 new businesses are registered per month.

City website: www.quezoncity.gov.ph

Country Information

Population: 99,200,000 (as of 1st quarter of 2014 - source: www.gov.ph)

Area (km²): 343,448 sq.km. (source: www.gov.ph)

Economy and GNI/Capita: (source: www.gov.ph)

- 5.3% Gross Domestic Product Growth (3rd Quarter of 2014)
- Stable above-average performance in GDP for the past three (3) years, indicating consistent economic growth

Main Economic Activities:

- Main Industries: electronics assembly, Business Process Outsourcing, garments, footwear, pharmaceuticals, chemicals, wood products, food processing, petroleum refining, fishing
- Primary Exports: electronics, semiconductors, transport equipment, construction materials, and minerals

Government Agencies responsible for guidance on waste legislation

- National Solid Waste Management Commission
- Department of Environment and Natural Resources
- Environmental Management Bureau
- Metropolitan Manila Development Authority
- Department of Health

MSW Sector Overview: City Level**Classification of MSW**

Municipal wastes, as defined in Republic Act 9003 or the Ecological Solid Waste Management Act, refers to wastes produced from activities within local government units which include a combination of domestic, commercial, institutional and industrial wastes and street litters.

MSW Generation

Per capita waste generation	0.88 kgs/person/day
Waste Generation	2,715 tons/day (based on 2014 projected population using the 2010 census)

Collection Coverage and Type

- 100% of households, government offices and institutions and wastes along the route of collection (i.e., main roads) are formally collected and disposed
- Separate collection schedule for biodegradable and non-biodegradable wastes, bulky/yard wastes.

Waste Composition

Type of Waste	Percentage
Biodegradable	53.95% or 54%
Recyclable	20.30% or 20%
Plastic	9.64%
Paper	8.65%
Glass/Bottle	1.15%
Metals	0.86%
Residual	25.76% or 26%

Waste Management Practice

In compliance with Republic Act 9003, Quezon City was the first city in Metro Manila to have its own 10-year Solid Waste Management Plan approved by the National Solid Waste Management Commission. This plan is now in the process of being updated to include a long term and sustainable solution to our growing waste generation by considering modern technologies that are both environment friendly and socially acceptable.

The City has also been recognized as the first local government unit to implement a successful and effective package clean up system on garbage collection and disposal. In a Package Clean Up System, the private sector is given full responsibility to administer and directly carry-out the management of solid wastes from various sources and the total environmental upkeep of the assigned service area. This system has made the city's garbage collection consistently more than 99% efficient thru the years.

Waste segregation at source has been the core strategy in all our waste reduction initiatives. Incentives and awards are given to our local communities, schools and the private sector for actively participating in the City's solid waste management program. To show moral ascendancy, even the City Hall officials and employees strictly follow the waste management policies enforced by the City.

All our waste reduction efforts have resulted to an estimated waste diversion of 42% in 2013.

To sustain these efforts, the City has deputized several of the city's personnel, mostly from the Environmental Protection and Waste Management Department, as well as the local community personnel and the city police officers to serve as Environment Police and Inspectors. To date, the City Government has deputized 216 local officials and personnel and 35 police officers to be the City's partners in the implementation of environmental laws.

The City Government is also very active in promoting environmental protection and management through various social marketing and advocacy projects that encourage our constituents to be advocates and stewards of the environment. IEC campaign activities range from the implementation and/or participation in special events to the actual conduct of trainings and seminars, and production of various information materials.

In terms of solid waste disposal, the City is proud of the transformation of its open dumpsite from the stigma of Payatas Tragedy, which claimed more than 2000 lives 14 years ago, to Payatas Triumph. In 2004, the dumpsite was converted into a Controlled Disposal Facility in accordance with the standards of the Department of Environment and Natural Resources. Together with Pangea Green Energy in 2007, the facility also became the first registered Clean Development Mechanism project under the Kyoto Protocol of the UNFCCC in solid waste management through the Biogas Emission Reduction project. From being an iconic wasteland, Payatas became a model for the wise and beneficial use of waste resources. In December 2010, the Payatas Controlled Disposal Facility was finally closed. What we are utilizing now is a private Sanitary Landfill that has hosted numerous dignitaries, academe, civic organizations and government organizations all over the world, because of its pioneering initiatives.

In 2012, PANGEA and MERALCO also entered into a Contract for the Supply of Electricity, wherein portion of the generated electricity is delivered to and purchased by MERALCO. Out of the total electricity sales, 5% are remitted to the City Government. The City has already received more than Php 1.1 million since the beginning of export and sale of electricity to MERALCO in March 2013.

Another waste-to-energy project being piloted in Payatas is the Refuse Derived Fuel Project where a highly mechanized solid waste processing facility has been set up, which continues the production and sale of refuse derived fuel (RDF) using solid wastes as input for use in cement factory and other industries.

Formal Waste Sector

1. Materials Recovery Facilities (MRFs) - local communities or what we call “barangays” have constructed MRFs in their respective areas to manage their biodegradable and recyclable wastes. Composting facilities are operated in some areas and recyclables are also temporarily stored for collection by the recyclers. To date, 53 barangays or local communities have already operationalized their own MRFs while the remaining 89 have implemented materials recovery systems where kitchen waste collectors are tapped to collect food wastes while junk traders are enjoined to collect recyclables from households.
2. The Sanitary Landfill being utilized by the City is privately owned and operated. Tipping fee is being paid by the Metropolitan Manila Development Authority.
3. The Refuse Derived Fuel Facility is also operated and managed by the existing landfill operator and its partners.
4. The Biogas Emission Reduction Project is privately owned and operated by Pangea Green Energy under a Memorandum of Agreement with the City Government.

Informal Waste Sector

The informal waste sector plays a big role in the city’s waste reduction efforts. The integration of junk traders/junkshops to the formal waste management system has been the overarching goal in the enactment of City Ordinance No. SP-1711, S-2006, or “An Ordinance Regulating the Operation of Junkshops in Quezon City.” Various projects and capacity-building activities have been implemented since then not only to protect the environment but also to improve the well-being of the members of this sector who are mostly indigent and lacking in livelihood opportunity.

Also, the waste pickers and sorters at the City’s disposal facility further contribute to the waste reduction initiatives of the City. Eight (8) MRF stations were established where recyclables are further consolidated and serves as livelihood for them. To ensure that they have an equal share of earnings, they were organized into a cooperative called Payatas Alliance Recycling Exchange (PARE) Multi-Purpose Cooperative.

More recently, the Japan Social Development Fund thru World Bank, the Solid Waste Management Association of the Philippines (SWAPP), in coordination with the City Government, implemented the “Social Inclusion and Alternative Livelihood for the Informal Waste Sector (IWS)” project. This project targeted the IWS in recognition of the fact that the move to modernize the solid waste system of the City

would have an impact on the livelihood of waste pickers and other itinerant waste buyers. The project included the following as activities to support the social inclusion, alternative livelihood and business enterprises of the IWS - provision of technical assistance, organizational development, preparation and delivery of IEC campaigns and trainings.

Financing of MSW

Budgetary requirement for solid waste management is sourced from the General Fund of the City.

Waste Management Challenges

Rapid urban development, increasing population and heightened economic activity has resulted to the increase in waste generation. With this, challenges arise in terms of solid waste collection and disposal. With regards to solid waste collection, increase in waste generation means a significant increase in the budget needed to cover the cost for additional collection equipment, manpower and other operational

costs. Increase in waste generation can be reduced by enhancing the waste reduction initiatives/practices at source or at the household level, however, this would also entail technology interventions as well as massive and creative information, education and communication (IEC) campaign which would also require funds in terms of manpower and other logistical requirements.

In terms of waste disposal, as waste generation increases, this would also mean additional requirement for landfill space. Lack of available in-city landfill sites due to scarcity of land means the most ideal option is to look into a facility outside the City, which in turn, would increase the hauling cost due to distance and other variables. The change in location of the city's disposal facility would also likely to affect the current collection system. One of the options being looked into is the establishment of a Waste to Energy Facility, however, this will entail a high initial investment cost.

Technical Assistance

In preparation for the WTE Project, the City Government has already identified a prospective project site and pursued to clarify the legal issues concerning the establishment of WTE facilities in the country, specifically, the provisions of the Philippine Clean Air Act and the Ecological Solid Waste management Act. National agencies are now on the process of developing guidelines for the establishment of WTE facilities and the city is awaiting for any developments on this. Further, the Quezon City Council also enacted the Public-Private Partnership (PPP) Ordinance as it was recognized that the proper mode of procurement for the said project is through PPP. Said ordinance will guide the City Government on the necessary processes for the accomplishment of the project.

Various proposals on different kinds of WTE technologies have also been received by the City Government, however, the city does not have the proper training and technical knowledge to analyze and study the proposals and discern the appropriate technology or facility for the type of wastes the city produces. We also do not have the convenience of having a successful model to replicate since there are no WTE facilities of our projected scale existing in the country, hence, the City is in urgent need of technical assistance given the City's limitations.

Technical assistance is also necessary in updating the City's Solid Waste Management Plan as the issue on solid waste management is becoming more complex and urgent, especially with the advent of climate change. Other strategies to further increase our waste diversion may also be sought, including capacitating our local staff in conceptualizing and implementing pioneering and innovative projects on solid waste management.

Plans, Strategies, Policies (incl. financial instruments) & National Objectives

City Level

Aimed at improving Waste Management in General

The City's Ten year Solid Waste Management Plan covers all sectors and addresses problems especially in the implementation of environmental laws. ***The thrust of the plan is waste reduction/diversion through recycling and composting activities in the Barangay (local community) level.***

Waste reduction and diversion will be focused on the residential areas because they contribute the bulk of the solid waste generated by the City. The City shall require all barangays or cluster of barangays to set up their own Eco-Centers/MRFs. Waste Management Committees shall also be activated in every barangay. The Committee may form Cooperatives for the program to be self-sustaining. Incentives and awards program shall also be part of the approaches to encourage stakeholders particularly the barangays to implement waste segregation and waste reduction strategies.

The City's strategies include the following:

- Waste reduction/diversion by encouraging the participation of the different sectors of the society
- Mobilizing the barangay councils to adopt and implement an ecological solid waste management program to manage recyclable and biodegradable waste
- Requiring and assisting the barangays to set up their own Materials Recovery Facilities (MRFs) for recycling and/or composting activities
- Establishment of Materials Recovery System (MRS) thru junkshop-cum-MRF agreements and introduction of kitchen waste collection
- Strictly implementing the "No Segregation, No Collection" scheme
- The City would construct a central composting and recycling facility to cater to barangays who could not develop their own MRFs
- Extend the life of the Quezon City Engineered Sanitary Landfill thru enforcing waste diversion targets
- Construct the City's own Waste-to-Energy (WTE) facility

Aimed at addressing Climate change and reducing SLCPs through waste related activities

The capacity of the existing biogas plant will be further expanded to capture and extract more methane gas from the closed disposal facility, thus, ensuring its stability and also, reducing its impact on the environment. It was also made clear with the sanitary landfill operator that the same initiative must be made integral in their current operations.

Waste reduction activities will likewise be intensified to reduce the amount of wastes being disposed at the sanitary landfill.

As soon as the city's greenhouse gas inventory has been updated, a more concrete emission reduction target may also be committed.

Legislation

City Level

Legislation governing MSW management

Ordinance No.	Title
SP-2235, S-2013	AN ORDINANCE IMPOSING AN ANNUAL GARBAGE FEE ON ALL DOMESTIC HOUSEHOLDS AND PROVIDING PENALTY FOR NON-COMPLIANCE THEREOF
SP-2202, S-2013	AN ORDINANCE PROHIBITING THE USE OF POLYETHYLENE (PLASTIC) ADVERTISEMENT AND PROPAGANDA MATERIALS WITHIN THE TERRITORIAL JURISDICTION OF QUEZON CITY
SP -2140, S-2012	AN ORDINANCE REGULATING THE USE OF PLASTIC BAGS AND ESTABLISHING AN ENVIRONMENTAL FEE FOR ITS USE, PROVIDING MECHANISM FOR ITS RECOVERY AND RECYCLING AND PROVIDING PENALTIES FOR VIOLATION THEREOF
SP 2127, S -2012	AN ORDINANCE PROHIBITING THE USE OF PLASTIC AND STYROFOAM IN QUEZON CITY HALL COMPLEX, NOVALICHES DISTRICT CENTER, QUEZON

	CITY GENERAL HOSPITAL AND NOVALICHES DISTRICT HOSPITAL FOR EFFICIENT GARBAGE DISPOSAL AND TO REDUCE RISK TO HEALTH AND WELL BEING
SP. 2122 S,2011	AN ORDINANCE PROHIBITING THE OPEN BURNING OF GARBAGE, TRASH OR ANY OTHER REFUSE MATERIALS WITHIN THE TERRITORIAL JURISDICTION OF QUEZON CITY AND FOR OTHER PURPOSES
SP-1711, S-2006	AN ORDINANCE REGULATING THE OPERATION OF JUNKSHOPS IN QUEZON CITY AND IMPOSING PENALTY FOR VIOLATION THEREOF AND FOR OTHER PURPOSES
SP-1707, S-2006	AN ORDINANCE REQUIRING THE SEGREGATION AT THE SOURCE OF ALL HOUSEHOLD, INSTITUTIONAL, INDUSTRIAL AND COMMERCIAL WASTE AND / OR GRABAGE INTO WET OR BIODEGRADABLE AND DRY OR NON-BIODEGRADABLE, PURSUANT TO REPUBLIC ACT NO. 9003
SP-1512, S-2005	AN ORDINANCE CREATING THE QUEZON CITY SOLID WASTE MANAGEMENT BOARD
SP- 1630, S-2005	AN ORDINANCE AMENDING SECTION 4 OF ORDINANCE NO. SP-1501, S-2005 "REQUIRING SUBDIVISION DEVELOPERS AND/OR SUBDIVISION OWNERS IN QUEZON CITY TO PROVIDE SUFFICIENT SPACE FOR THE INSTALLATION OF COMPOSTING FACILITIES TO ACCOMMODATE THE DISPOSAL OF RECYCLABLE OR BIODEGRADABLE WASTE", AUTHORIZING THE ENVIRONMENTAL PROTECTION AND WASTE MANEGEMENT DEPARTMENT (EPWMD) IN COORDINATION WITH THE SUBDIVISION UNIT TO UNDERTAKE THE IMPLEMENTATION AND ENFORCEMENT OF THIS ORDINANCE

Ordinance No.	Title
SP – 1530, S-2005	AN ORDINANCE MANDATING RESIDENTS, OWNERS AND OPERATORS OF INSTITUTIONS TO CLEAN THEIR OWN SURROUNDINGS INCLUDING CANALS, STREETS OR ROADS IN THEIR IMMEDIATE PREMISES TO MAKE QUEZON CITY A CLEANER AND HEALTHIER PLACE TO LIVE IN, AND PROVIDING PENALTIES FOR VIOLATION THEREOF
SP – 1506, S-2005	AN ORDINANCE AMENDING ORDINANCE NO. 6305, S-65, PROHIBITING THE THROWING OF ANY KIND OF GARBAGE, WASTE MATTERS, OR REFUSE IN ANY DRAINAGE OUTLETS SUCH AS RIVERS, CREEKS, OR ANY TRIBUTARIES IN QUEZON CITY
SP- 1501, S-2005	AN ORDINANCE REQUIRING SUBDIVISION DEVELOPERS AND/OR SUBDIVISION OWNERS IN QUEZON CITY TO PROVIDE SUFFICIENT SPACE

	FOR THE INSTALLATION OF COMPOSTING FACILITIES TO ACCOMMODATE THE DISPOSAL OF RECYCLABLES OR BIODEGRADABLE WASTE GENERATED BY HOMEOWNERS AND PROVIDING FOR PENALTIES AND ADMINISTRATIVE SANCTIONS IN VIOLATION THEREOF
SP – 1483, S-2005	AN ORDINANCE REQUIRING ALL RESIDENTS AND BUSINESS ESTABLISHMENTS IN QUEZON CITY TO SEGREGATE SPENT FLOURESCENT BULBS FROM COMMON GARBAGE AS TO ELIMINATE EXPOSURE FROM MERCURY, DECLARING THE SAME AS HAZARDOUS WASTE AND DIRECTING THE ENVIRONEMNTAL PROTECTION AND WASTE MANAGEMENT DEPARTMENT (EPWMD) TO PREPARE IMPLEMENTING RULES AND REGULATIONS REGARDING THE DISPOSAL OF THE SAME
SP- 1323, S- 2003	AN ORDINANCE ADOPTING GUIDELINES AND PROCEDURES FOR A UNIFIED APPROACH ON SOLID WASTE MANAGEMENT
SP – 1203, S-2002	AN ORDINANCE GRANTING INCENTIVES TO BARANGAYS PRACTICING BEST SOLID WASTE MANAGEMENT
SP – 1191, S - 2002	AN ORDINANCE PROVIDING INCENTIVES TO ALL BARANGAYS UTILIZING THEIR OWN TRUCKS FOR SOLID WASTE COLLECTION SERVICE IN THEIR RESPECTIVE BARANGAYS
SP –1072, S – 2001	AN ORDINANCE MANDATING ALL DRIVERS OF PUBLIC UTILITY VEHICLES PLYING THE STREETS OF QUEZON CITY TO PROVIDE A RECEPTACLE CONSPICUOUSLY INSIDE THEIR RESPECTIVE VEHICLES FOR THE PROPER DISPOSAL OF TRASH/RUBBISH OF THEIR PASSENGERS AND PROVIDING PENALTIES FOR VIOLATION THEREOF
SP-941, S – 2000	AN ORDINANCE REGULATING THE OPERATION OF AMBULANT / PUSH CART JUNK DEALERS AND PROVIDING PENALTIES FOR VIOLATION THEREFORE

Ordinance No.	Title
SP- 856 , S-2000	AN ORDINANCE AMENDING THE PENAL PROVISIONS OF ALL ORDINANCES RELATING TO WASTE AND GARBAGE COLLECTION AND DISPOSAL AND LITTERING SUCH AS, BUT NOT LIMITED TO ORDINACE NO. NC-106, S-89; ORDINANCE NO. NC- 118, S-89; ORDINANCE NO. NC 172, S-90; ORDINANCE NO.SP-111, S-93, PRESCRIBING A UNIFORM AND GRADUATED PENALTIES THEREFORE, AND DEPUTIZING THE ELECTED BARANGAY OFFICIALS TO HELP IN THE IMPLEMENTATION THEREOF

SP-813, S-99	AN ORDINANCE IMPOSING A CITY GARBAGE COLLECTION SERVICE CHARGE ON ALL PERSONS ENGAGED IN ALL FORMS OF BUSINESS ACTIVITIES/CALLING OR UNDERTAKING
SP-111, S- 93	AN ORDINANCE REQUIRING ALL INDUSTRIAL AND COMMERCIAL ESTABLISHMENTS TO PUT ADEQUATE, SUFFICIENT AND COVERED TRASH RECEPTACLES AND ITS IMPLEMENTS AND ACCESSORIES WITHIN THE VICINITY OF THEIR ESTABLISHMENTS AND PROVIDING PENALTY AND/OR FINE FOR VIOLATION THEREOF
NC-172, S-90	PROHIBITING URINATING, DEFECATING AND INDESCRIMINATE DISPOSAL OF WASTE, TRASH AND ANY FORM OF GARBAGE IN PUBLIC PLACES, EXCEPT IN ANY DESIGNATED, ALLOWABLE AREAS OR PLACES OF QUEZON CITY AND PROVIDING PENALTIES FOR VIOLATION THEREOF
9820, S-73	REGULATING SOLID WASTE DISPOSAL PRACTICES, INCLUDING THE PROHIBITION OF OPEN DUMPING IN VACANT LOTS, IN ESTEROS AND IN OTHER WATER COURSES
6305, S-65	PROHIBITING THE THROWING OF ANY KIND OF GARBAGE, WASTE MATTERS, OR REFUSE IN ANY DRAINAGE OUTLETS SUCH AS CANALS, RIVERS, CREEKS, OR ANY TRIBUTARIES IN QUEZON CITY, AND PROVIDING PENALTIES FOR VIOLATION THEREOF

Guidance for MSW management (after legislation, before inspection activities)

All actions of the City Government on MSW management are guided by RA 9003 or the Ecological Solid Waste Management Act and other issuances from SWM of National Government Agencies.

Inspection activities/supervision and enforcement of legislation

The City Government, through the Environmental Protection and Waste Management Department, monitors the City's compliance to RA 9003 or the Ecological Solid Waste management Act, 10 yr. Solid Waste Management Plan and City Ordinances. The City has deputized enforcers, barangay deputized enforcers and even members of the police force that enforce the City's ordinances on environmental protection. Garbage Collection Monitors also ensure that the collection of the City's solid waste is properly undertaken by the City-Contracted Haulers.

Current Projects or Activities Aimed at Reducing SLCP Emissions

- Please refer to the write-up on waste management practice and SWM plans, strategies and policies

Key Stakeholders

- Quezon City Government thru the Environmental Protection and Waste Management Department
- Quezon City's 142 barangays (local communities)
- Other local partners

Contacts

MSW Initiative City Lead:

Environmental Protection and Waste Management Department (EPWMD)

MSW Initiative City Representative:

Frederika C. Rentoy, EPWMD Head

+632 9884242 local 8362

f.rentoy@yahoo.com

epwmd@quezoncity.gov.ph