

WORKING PAPER

*Public waste management services in France:
National analysis and case studies of
Paris, Rouen, and Besançon*

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Public waste management services in France.

National analysis and case studies of Paris, Rouen, and Besançon

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1. INTRODUCTION

Municipal waste management has been a major city management concern the world over for many years. This management concerns in particular household waste and the like (HHW), whether collected and processed by the municipalities directly or by companies on their behalf. It is considered to be a vital axis of environmental policy. However, household waste management is undergoing major changes, especially regulatory changes that are accompanied by more complex and strictly monitored technical and organizational arrangements, as well as new quality demands on the part of users (C. Defeuilley, 1996). The organization of public waste management services is thus triggering more and more interest within the European Commission. The economic and financial stakes riding on the waste management sector have become substantial. The cost of HHW management effectively accounts for rising shares of municipal budgets in France (CGP, 2003)². The spread of intermunicipal companies/associations and state-owned business and industrial establishments has, moreover, given rise to new ways of managing and financing this type of service. The decentralisation that is afoot in the country and transfers of powers to the *départements* (administrative divisions of the territory) and Regions of France have forced these subnational levels of government to reorganize their powers of oversight and responsibility.

The context is also characterised by a large increase in urban waste streams across the country. In France, ADEME has calculated, however, that the per capita production of HHW per year has been decreasing since 2002. Specifically, it declined by 6 kg/inhab/yr over 2002-2004. In 2004, each inhabitant of France produced 353 kg of household waste for the year. The French Ministry of Ecology and Sustainable Development adopted a new household waste management plan on 25 April 2007. This plan aims to reduce the amount of waste generated by households. Its targets are to decrease the amount of waste buried in landfills or incinerated from 290 kg in 2007 to 250 kg over a five-year period and to 200 kg by around 2017.

This paper is devoted to the issue of waste management in France. Its aim is to present the various ways in which the waste “arms” of local public sanitation services are organized and financed. It presents the characteristics of the supply and the economic and financial situations of this service within the authorities with waste management powers according to three separate markets, namely, pick-up or collection,

² The Strategic Analysis Centre (CAS) took over from the CGP as of 6 March 2006.

treatment, and recycling *per se*. It gives a detailed description of the national waste management service and a case study focusing on three French cities. It elucidates the European and French regulatory frameworks for waste management, with regard to the organization, running, and financing of local waste management services, as well as the definition of the public service and its various segments. It presents the various laws and regulations that organize waste management policy in France. This is then illustrated by the specific cases of three French cities, namely: Paris, Rouen, and Besançon. In each case, the three segments of waste management (collection/pick-up, treatment, and recycling) and the financing schemes used by each municipality are covered. The data come from the activity reports of the authorities responsible for picking up and disposing of waste in 2005 and 2006.

2. THE LEGISLATIVE FRAMEWORK OF WASTE MANAGEMENT

Public waste policies revolve around three areas of concern, namely: public hygiene, environmental concerns, and individual health (G. Bertolini, 2005). Still, waste management is governed by environmental policy. Regulatory instruments have proven necessary to achieve the expected targets of these policies. As a rule, waste management policy is based on three types of instrument, to wit, legislative or regulatory instruments, economic instruments (incentives, taxation, etc.), and other instruments (awareness raising, training, etc.).

The European Union has had a coordinated waste management framework for all the Member States since the 1970s. Its aim is to limit the generation of waste and to organize the treatment and disposal of the waste that is produced with maximum efficiency. The European waste management policy itself was launched in the 1970s and 1980s following the discovery of forty-one drums of chemical waste containing dioxin in northern France. The first measures focused on hazardous waste and the transport of waste. Measures aimed at reducing the volume of hazardous waste and monitoring their transport were adopted via the Basel Convention in the late 1980s.

A 1996 communication on the EU's waste strategy stipulates the following objectives: reinforcing the notion of a hierarchy of wastes, reasserting the "polluter-pays" principle, and presenting the concept of priority waste streams. The EU's waste policy comes under one of the

seven strategy areas that the Commission proposed in 2005 and 2006. The aim of the waste prevention and recycling strategy³ is to bolster this regulatory framework by adjusting the EU's policy on waste materials in line with new developments. This strategy, which the EU adopted on 21 December 2005, is based upon the prevention and recycling of waste. According to forecasts published in January 2008 by the EEA, the amount of municipal waste generated each year was expected to increase 25% between 2005 and 2020 and limiting this increase in the volume generated would make it possible to reduce the waste sector's greenhouse gas (GHG) emissions whilst offering a series of other advantages for society and the environment (EEA, 1-2008).

European regulation of waste matters is extremely complex, for it rests upon more than 200 texts. The waste directives set the legislative frameworks for the various types of waste (household, hazardous, health care, etc.), and the various collection and treatment operations (incineration, landfilling, and recycling). Other directives have been adopted for packaging, electrical and electronic equipment waste, end-of-life vehicles, and batteries large and small.

The European Council's Framework Directive on *waste* (Directive (EC) No 75/442/EEC of 15 July 1975 on waste) stipulated that the Member States had to take measures to prevent, reduce, recover, and dispose of waste without detriment to public health and the environment. This directive was amended in 1991⁴ to ensure a higher level of environmental protection. That same year a new directive standardising and rationalising reports regarding the implementation of certain directives concerning the environment was also adopted⁵. Council Decision No 96/350/EC, taken in 1996, modified Annexes IIA and IIB of the 1975 Framework Directive by establishing a new list of fifteen waste disposal and thirteen recovery operations. The 1975 Framework Directive was abrogated in 2006, after a series of modifications of various types, by Article 20 of the Waste Directive of 5 April 2006⁶. The latter sets the general framework for waste management in the EU today.

³ See the Communication of the European Commission of 21 December 2005 on "Implementing the sustainable utilisation of resources: A thematic strategy for waste prevention and recycling" <http://europa.eu/scadplus/leg/fr/lvb/128168.htm> - COM(2005) 666.

⁴ Directive No 91/156/EEC of 18 March 1991 (OJEC L 78 of 26 March 1991).

⁵ Directive No 91/692/EEC of 23 December 1991 (OJEC L 377 of 31 December 1991).

⁶ Directive No 2006/12/EC of the European Parliament and Council on Waste of 5 April 2006.

The European Community adopted a directive in 1999 (Directive No 1999/31/EC of 26 April 1999) aimed at encouraging *reductions in the amounts* of waste kept in storage facilities. The aim was to provide for measures, procedures, and guidelines to reduce the negative effects of landfills on the environment. It set technical specifications for different categories of managed landfills, along with definitions of the types of waste allowed and not allowed in landfills. This directive effectively set quantitative targets for biodegradable municipal waste that could be disposed of in landfills. In a nutshell, their amount (in weight) is supposed to be cut 35% from the baseline of all biodegradable municipal waste produced in 1995. It prohibited the disposal of whole tyres in landfills as of 2003 and of ground-up tyres as of 2006. The 2000 directive on end-of-life vehicles⁷ promotes their recycling. When it comes to waste electrical and electronic equipment from households, the Waste Electrical and Electronic Equipment (**WEEE**) Directive of 2003 sets a minimum recovery target of 4 kg per capita per year.

Two European Directives on packaging, one on packaging, the other on packaging waste, were adopted in December 1994 and February 2004, respectively. They concerned household, industrial and business/commercial packaging and set quantitative targets and deadlines for recycling, especially energy recovery rates and material recycling rates. For the first directive, the targets were supposed to be met by 2001 at the very latest. For the second directive, the deadline was 2008 for the EU-12 and 2013 to 2015 for the new Member States.

In France, the *Code général des collectivités territoriales* (CGCT) or General Code of Local and Regional Authorities defines the *local authorities with powers* to collect, dispose of, and treat or process waste, that is, the municipalities and intermunicipal associations (*e.g.*, the intermunicipal cooperation agency or EPCI). It also spells out the *financing* schemes that the authorities may use to cover the costs of this public service. The Public Procurement Code establishes the scope and procedure for launching calls for tenders for public services. The Environment Code sets waste management policy priorities and provides for the establishment of departmental and regional waste disposal plans. It clarifies the nomenclature of the various classes of facilities for environmental protection and sets the procedures for issuing permits prior to operating waste treatment and storage facilities.

⁷ Directive No 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles (*OJEC* L 269, 21.10.2000, pp. 34–43).

The public waste management departments are organized by a set of texts, notably the law of 15 July 1975 on packaging waste that does not come from households, modified by the decree of 21 December 1999 and the decree of 13 July 1994; and the decree of 1 April 1992 on **waste resulting from discarded packaging**. A succession of texts regulated the disposal of waste in landfills, with different requirements for the different types of waste: HID⁸ in Class 1 managed landfills, household rubbish and ordinary waste in Class 2 managed landfills (MLFs), and inert waste in Class 3 MLFs. The law of 1992 stipulates that storage must be reserved for final waste only.

In order to have control over waste policy, the decree of 11 May 2000 requires every local authority to draft an **annual report on the price and quality of its public waste disposal service**. This report must contain technical indicators on collection (frequency of collection, number and sites of waste collection centres, separated rubbish pick-up that is proposed, etc.) and financial indicators describing how the disposal service is run, the overall annual amount of expenditures and financing solutions, and the annual amounts paid out to contractors for the main services provided. However, the circular of 17 January 2005 on the **decentralisation of disposal plans for household waste and the like (PEDMA)** spells out certain points on the transfer of the power to draft and revise these plans to the general council or, in the case of the Paris Region, the regional council. The circular of 25 July 2006 corresponds to the enforcement of the decree of 29 November 2005 concerning the PEDMA and the decree of 28 December 2005 concerning the **regional special industrial waste disposal plan (PREDIS)**⁹. The latter specifies the regional or departmental prefect's role and possibility to replace the relevant authority in drawing up and assessing these waste disposal plans. The circular of 25 April 2007 gives guidelines for drawing up the PEDMAs, especially when it comes to preventing waste, boosting recycling, and making use of the organic components of waste.

On another front, the decree of 20 July 2005 defines the composition, collection, pick-up, and treatment of **waste electrical and electronic equipment** (WEEE) from households and businesses. It provides for monitoring and inspection schemes and establishes the actions of the producer, distributor, or legal persons that are liable to criminal sanctions. The government issued some new orders (*arrêtés*) in 2008. These are the *arrêté* of 31/01/08 concerning the registry and annual reporting of polluting

⁸ Hazardous industrial waste.

⁹ Currently "PREDD": plan régional d'élimination des déchets dangereux (Regional Hazardous Waste Disposal Plan).

emissions and waste and the *arrêté* of 09/01/08 – the implementing order for Article R.543-46 of the French Environment Code – stipulating the environmental requirements that must be taken into account in designing and manufacturing packaging. These laws and orders are complemented by other laws¹⁰ concerning public service management, the operation of waste management services, and the financing of rubbish pick-up and treatment services.

3. THE ORGANIZATION OF WASTE POLICY POWERS IN FRANCE

On the national level, the *Ministry of Ecology, Energy, Sustainable Development, and Regional Planning and Development* has primary responsibility for national environmental policy. It was created in the early 1970s under a name that has varied over the years. The ministry sets waste management objectives, issues the standards to meet in line with European regulations, and gives official approval to the bodies in charge of managing the various recycling industries. Article 1 of Decree 2001-594 of 5 July 2001 provided for the creation of the **National Waste Council** within the ministry in charge of the environment. The Minister has the power to put all waste-related questions to this Council. The Council may be consulted about draft legislation and regulations having impacts in this area. It is also empowered to examine all waste-related issues. The other body is the environment and energy control Agency *Agence de l'environnement et de la maîtrise de l'énergie* (ADEME). This is an industrial and commercial state Agency that is accountable to both the Ministry of Ecology, Energy, Sustainable Development, and Regional Planning and Development and the Ministry of Higher Education and Research. ADEME has jurisdiction over energy, air quality, noise pollution, environmental management, waste, and soil. Within the field of waste it intervenes in the limitation of waste arisings, waste disposal, energy and material recovery, and soil protection and the remediation of polluted sites. It has a complementary or limited role in financing operations.

The local waste management services are accountable to their respective general council (of the *département*) and regional council. The *départements* are supposed to draw up and revise the *PDEDMs* by virtue of the law of 13 August 2004 concerning the local freedoms and responsibilities given to the *départements*.

¹⁰ For example, customs law for everything concerning the exportation and importation of waste.

The Regional Council is responsible for drawing up the Regional Special Industrial Waste Disposal Plan (PREDIS). It has had this power since 2002¹¹. In the interim, the plan has become the Regional Hazardous Waste Disposal Plan or PREDD. The waste concerned by this plan is hazardous waste generated by economic activity and the health care sector.

Other regional representatives of the State also play very important parts in overseeing waste management. The *prefects* are responsible for issuing the operating permits for waste treatment units. They are in charge of setting up local information and surveillance committees (*commissions locales d'informations et de surveillance*) or CLISs. In addition to these bodies, the Regional Directorate for Industry, Research and the Environment (*Direction Régionale de l'Industrie, de la Recherche et de l'Environnement*) or *DRIRE* is involved in monitoring waste disposal. In other words, the DRIRE has police powers in this area and penalties apply in the event of violations.

In this paper, the local level refers to two structures with local waste service powers, namely, the municipalities taken singly and the intermunicipal consortia that are set up to carry out a group of municipalities' tasks. The municipalities are also responsible for disposing of other types of waste, which they may collect and treat without any special technical constraints, given the nature and amounts of such waste arisings. This includes ordinary industrial and business waste and the like (CGCT Article L.2224-14).

In 1999, the Chevènement Act¹² on strengthening and simplifying intermunicipal cooperation defined two activities linked to the public waste management service, namely, waste collection and waste treatment. The municipalities then gradually transferred their “waste” powers to the EPCIs (intermunicipal cooperation agencies), but transfers between EPCIs also exist. Currently, the municipalities continue to be in charge of collecting waste from technical services and keeping the streets, signs, and urban amenities clean (removing unauthorised posters, graffiti, and so on). In a document on the intermunicipal consortium and waste management, ADEME's Directorate for Municipal Waste describes the EPCIs' various powers. The latter revolve around four activities, namely, traditional pick-up, selective pick-up, waste collection and recycling centres, and treatment.

¹¹ Article 109 of Law No 2002-276 of 27 February 2002 on local democracy transferred responsibility for drawing up the regional special industrial waste disposal plans (PREDIS) to the Regional Councils.

¹² Law No 99-586 of 12 July 1999 on reinforcing and simplifying intermunicipal cooperation.

A 2002 survey of the mayors of France's large cities¹³ concerning local public services showed that 63% of these cities had transferred waste treatment to consortia of towns and that waste collection was shared between the municipalities (43%) and EPCIs (57%). In contrast, the breakdown of responsibility for its treatment was 10% for the municipalities, 63% for the consortia, and 27% for mixed associations. More than 22.5% of the consortia relied on integrated waste management (traditional collection of residual household rubbish, separate collection of sorted waste, transport, sorting, transit, and treatment) between 1998 and 2001, with the waste being collected by the municipalities themselves or an intermunicipal structure to which they belonged. In contrast, they contracted the treatment activities out to larger associations or consortia.

4. HOW THE PUBLIC WASTE MANAGEMENT SERVICES OPERATE

A public service must correspond to a general interest activity, attached in some way or another to a legal person governed by public law, *i.e.*, a government entity. This attachment may take various forms. The most obvious one is having a public legal person in charge of it directly. Since the 1999 Chevènement Act, which reorganized the transfers of powers between local authorities, the various official establishments of intermunicipal cooperation are involved in this public service. The French lawmakers defined two categories of public service, namely, SPAs and SPICs. The *SPA* (for *service public administratif* or administrative public service) is governed by administrative law. Nevertheless, public legal persons, *i.e.* government bodies, can nevertheless make use of private law procedures (private law contracts) in managing SPAs. Private persons may manage SPAs. SPA contracts are administrative contracts, provided that they meet substantive and organic criteria. The organic criterion is being managed by a public legal person or on behalf of a public legal person or by a private person with an explicit brief from the public legal body delegating this power. The substantive criterion is being a matter of general interest or containing an overriding clause of ordinary law. *The industrial and commercial public service or SPIC (service public industriel et commercial)* is defined by three criteria that must all be met, to wit:

¹³ 37 cities and 32 consortia were surveyed. See: http://www.grandesvilles.org/IMG/etude_sves_pub.pdf

1. The purpose of the service, which must be production, distribution, or trade operations carried out under the conditions of a private individual.
2. The origin of the resources: If the resources come mainly from subsidies/tax revenue, the administrative nature of the service is clear. Otherwise, the SPICs' resources come mainly from a price paid by the user.
3. The material and organic criteria apply to the SPIC and SPA in the same way. Whilst most SPIC contracts are private law agreements, an SPIC can sometimes conclude an administrative contract.

The waste collection service is a special case: It is either an SPIC or an SPA, depending on how it is financed. The 1974 finance law permits two forms of financing of this public service: If the authority is financed by a household rubbish collection tax (TEOM) or the main budget, the service is an SPA; if the authority is financed by a bin tax (REOM), the service is an SPIC. At the current time, waste collection and treatment in France is managed in four ways, as follows:

- * **Direct management:** The authority and its departments take charge of the activity, which is carried out by its staff and equipment. This direct management is subdivided into two categories, based on its degree of financial independence from the authority:
 - **Simple or direct administration (*régie simple or régie directe*)¹⁴:** There is no autonomy, be it financial or administrative, from the authority. This type of management is, in principle, reserved for the SPAs only. It does not give rise to the creation of an auxiliary budget.
 - **Indirect or autonomous administration (*régie indirecte*):** Under such an arrangement, the service is financially autonomous and has its own managerial bodies that are separate from those of the authority, whilst the latter keeps its decision-making powers. The service's operating costs must be traced in an auxiliary budget that is separate from that of the local authority.

¹⁴ -> *Régie* (Corporation): An administrative body in France, sometimes having legal personality and financial autonomy, that the State or local authorities set up to run certain services. The *régie* can take various forms that correspond to so many management approaches: the *régie simple* or *régie directe* (simple or direct administration), which is devoid of legal personality and is run directly by the State or a local authority; the *régie autonome* (autonomous administration), which has financial autonomy without being separate from the authority to which it is accountable; the *régie intéressée* (third-party management or management on a cost-plus basis), which is entrusted to an administrator (*régisseur*) who is paid according to the turnover posted; and so on. The *régie* is a French institution that is not very widespread in other countries (Grand Dictionnaire Terminologique, Canada).

- * ***The state agency:*** This is a legal person governed by public law that is legally and financially separate from the authority that created it and to which it remains connected by a supervisory agreement (*document de tutelle*). These agencies are subdivided into administrative agencies (*établissements publics administratifs* or “EPAs”)¹⁵ and industrial and commercial agencies (*établissements publics industriels et commerciaux*), which go by the acronym of “EPICs”. They are run by a Board of Directors. Each agency is overseen by the government entity that creates it. The budget is not appended to that of the authority and is subject to government accounting rules.
- * ***Public procurement contract:*** This is an agreement (to perform works, provide supplies, or provide services) between the local authority and an enterprise covering all or part of a public service (whether administrative or industrial and commercial). The co-contractor receives payment for the work, service, or supplies that are provided.
- * ***Delegation of a public service:*** This is a contract whereby the authority entrusts the service’s operation to a third party under its oversight. The proxy is paid directly by the user. This payment is linked to the service’s operating profits and losses.

There are three possible public procurement contracts: one for waste collection, one for waste treatment and disposal services, and one for energy recovery and material recycling.

A. The waste collection service

This waste collection service concerns three major categories of waste:

- (1) public waste (including the waste from parks and gardens, cleaning, and the administrations);
- (2) household waste (bulky waste and hazardous waste on the one hand and the waste stemming from the households’ rubbish bins, including the selective collection of glass, paper, and packaging, as well as unsorted household rubbish, on the other hand);
- (3) waste produced by craftsmen and retailers that is put on a par with household waste and collected along with the latter.

The public waste collection service is primarily run directly by the local authorities (42% without financial autonomy and 15% via an auxiliary budget), followed by public procurement contracts (41%) and delegation of services (2%). This information comes from a 2002 report on public

¹⁵ For example, the associations of municipalities.

service by the mayors of France’s large cities that was published in March 2004. According to this survey concerning 37 cities and 32 municipal consortia or associations that was carried out by the Studies Department of Dexia-Crédit Local for the Association of Mayors of France’s Large Cities (AMGVF), 57% of the consortia/associations and 43% of the cities collected the waste themselves. According to another survey on waste collection by public services in France (this one conducted by ADEME in 2005 and involving 2,300 EPCIs and 500 independent municipalities with populations of more than 1,000 that had at least one power to collect waste or run a waste collection centre), a large proportion of waste material is collected by service providers. In contrast, household waste was collected by service providers in 53% of the cases and through a corporation in 45% of the cases.

Table 1: Waste collection schemes (%) in 2005

| | Service provider | Corporation (direct management) | Delegation |
|--|-------------------------|--|-------------------|
| Selective pick-up of dry materials | 66 | 32 | 2 |
| Selective pick-up of biological and garden waste | 60 | 40 | - |
| Selective pick-up of bulky items | 72 | 28 | - |
| Collection in waste collection centres | 38 | 62 | - |
| Pick-up of residual household waste | 53 | 45 | 2 |
| Selective pick-up of glass | 82 | 16 | 2 |

Source: ADEME 2005

B. Waste treatment and disposal

Treating waste is a complex operation due to the diversity of waste composition. In some cases the waste must be stored before being treated or disposed of. In other cases, the appropriate solution is to bury or incinerate it (with or without energy recovery). According to the same AMG VF survey, the management of waste treatment by the relevant authorities breaks down as follows: 47% through delegation of the public service, 34% through public procurement contracts, and 19% through a direct corporation (of which 16% without an auxiliary budget). It is treated in composting centres, waste collection centres, and incineration plants. The cases of delegated treatment or treatment through corporations with financial autonomy concern more particularly the sorting centres, which

have a different financing structure from that of collection *per se*, given that they generate revenue. The AMGVF survey of 2004 shows that, for the sample of 37 cities and 32 consortia, 63% of the waste treatment was done by the consortia, 27% by associations, and 10% by the cities themselves.

C. Material and energy recovery and recycling

The European Packaging Waste Directive of 2004 sets quantitative targets for recovery and recycling in line with the amounts released on the market. The two strands are:

- energy and material recovery, with a minimum of 60% and no maximum, and
- total recycling, with a minimum rate of 55% and a maximum of 80%.

These recycling rates are as follows by material: 60% for glass, 60% for paper, 50% for metals, 22.5% for plastic, and 15% for wood. These targets were supposed to be reached by 2008. It is worthwhile pointing out that France had already achieved and even surpassed the minimum recycling rates foreseen in this directive for 2008 in 2005.

The market for taking back sorted packaging materials is open to competition. Eco-Emballage, Adelphé, FNADE¹⁶, and Fédérec¹⁷ participate in it via a framework contract. Starting in 2005 the local authorities were able to choose from amongst three types of take-back scheme for their collected and treated waste, as follows:

1. ***The take-back guarantee:*** The take-back price of a treated material is the same for all authorities (a guaranteed minimum price). It is proposed by certified companies (Eco-emballages and Adelphé) via the materials industries:
 - Steel (Arcelor Packaging International),
 - Aluminium (France Aluminium Recyclage),
 - Paper & cardboard (Revipac),
 - Plastic (Valorplast), and
 - Glass (*Chambre syndicale des verreries mécaniques de France* - Mechanical Glassworks Union Chamber)

¹⁶ FNADE : Fédération Nationale des Activités de la Dépollution et de l'Environnement or National Federation of Remediation Activities and the Environment: It is composed of nine associations of service providers, builders, and the manufacturers of materials.

¹⁷ Fédérec : Fédération de la Récupération, du Recyclage et de la Valorisation or Federation of Material Recovery, Recycling, and Energy Recovery.

2. ***Guaranteed take-back:*** The price varies according to the material and local authority (it is negotiated). The waste is taken back by operators who are approved by the trade federations (Fédérec and FNADE). For example, FNADE signs binding contracts for each of the following:
 - FNADE and each approved company: Technical terms and conditions;
 - FNADE and its operators: Operator contract;
 - the local authority and the operator: Materials take-back contract.
3. ***Non-guaranteed or direct take-back:*** Under the sole responsibility of the local authority, which itself ensures that the waste is collected and recycled by industry.

5. PUBLIC WASTE MANAGEMENT SERVICES' FINANCING

In France, the local authorities in charge of picking up and treating waste have the sovereign right to choose from amongst the financing instruments allowed by law. The municipalities' diversity explains the heterogeneity of the financing instruments, with small entities opting for incentive fees whereas the large cities tend to choose a flat tax along the lines of the TEOM (residential sanitation tax) (M. Glachant, 2003).

A. The general budget

Close to 6% of France's municipalities chose to finance their public waste disposal services out of their general budgets in 2004. The municipalities' general budgets' income comes from the taxes that they collect: housing tax, trade tax, real estate tax on built-up property, and real estate tax on land that has not been built upon. This financing arrangement can be a complement to the rubbish collection and the special mandatory fee for the rubbish collection service provided to businesses, tradesmen, and other non-household beneficiaries. According to the National Waste Council's (CND) summary¹⁸, about 5,000 municipalities chose to use their general budgets to finance their public waste services in 2000, for a total income of the order of 1.5 billion euros.

¹⁸ Online summary "Le financement du service public d'élimination des ordures ménagères" at <http://www.ecologie.gouv.fr/Conseil-national-des-dechets,2478.html>

B. The residential sanitation tax (“TEOM”)

The residential sanitation tax (literally the “household rubbish collection tax”) is a flat-rate tax that is disconnected from the amount of waste that the household generates. It is based on the built property and is collected with the real estate tax. Its amount thus varies in line with the value of the dwelling or premises (for professional use). The sanitation tax is instituted in municipalities where a household rubbish collection service is set up and is collected from the users of this service. The municipalities, intermunicipal establishments with their own tax schemes (communities of municipalities, metropolitan communities, and urban communities), intermunicipal associations, and mixed associations are the authorities that have the right to finance their services via the residential sanitation tax in the territories under their jurisdictions (law of 12 July 1999 on strengthening and simplifying intermunicipal cooperation). If the sanitation tax revenue does not cover the cost of managing the household waste, the authority may dip into its general budget.

France’s lawmakers have introduced two notions regarding the sanitation tax’s enforcement, namely, zoning and smoothing:

- **Zoning** is a system whereby different sanitation tax rates are adopted, by a vote, for the different urban areas. This rate must be proportional to the service rendered in line with its cost and performance conditions.
- In contrast, **smoothing** is the system that provides for modulating the sanitation tax rates within a consortium of municipalities to cope with the increase in the members’ fees that are linked to harmonising the service’s financing systems across the municipalities. Smoothing is limited to a maximum period of ten years starting on either 1 January 2005 or the date that the sanitation tax was instituted or the municipality joined the consortium, if this date is later than 1 January 2005.

For 2004 and 2005, a survey of thirty-four EPCIs, five “urban communities”, and five cities that was published by the town halls of France’s big cities in December 2005 revealed that the EPCIs were responsible for household rubbish pick-up in 88% of the cases, thirty-eight EPCIs collected the residential sanitation tax (TEOM), and the tax contribution per resident was highly variable from one company to the next (from 25 to 150 euros per person). This way of financing the public household rubbish pick-up service concerns some 70% of France’s municipalities and 90% of its population, according to ADEME¹⁹. About

¹⁹ See <http://www2.ademe.fr/servlet/KBaseShow?sort=-1&cid=96&m=3&catid=17432>

17,500 municipalities, or some 46 million people, opted for the sanitation tax in 2000, for a financial product of the order of 2.9 billion euros (CND, 2002).

The sanitation tax must be complemented by a special fee (*RS* for *redevance spéciale*) to cover the service rendered to non-households. The *RS* is instituted by authorities that have not adopted the general household rubbish pick-up fee (REOM) and collect and treat non-household waste (generated by businesses or administrations). Article L.2224-14 of the CGCT stipulates that the local governments should be the entities that dispose of the waste, as soon as they can collect and pick up the waste without any special technical constraints, given its characteristics and the amounts generated.

C. The household rubbish pick-up fee (REOM) or “bin tax”

The REOM or bin tax is linked to the service rendered. The waste’s producer pays a fee in line with his/her actual use of the service, which is usually calculated according to the number of people in the household in the case of a household and according to the size of the bin in the case of public establishments and businesses. As a rule, this amount is linked to the mean amount of waste generated by each type of user and one speaks of a “general or classic fee”. The amount of the conventional REOM does not vary in line with the user’s efforts to reduce the amount of waste (by reducing production at the source, sorting, or composting). If, on the contrary, this fee is linked to the amount of waste generated, it is called an “incentive fee”. Some 14,000 municipalities, or about 10 million people, adopted the REOM in 2000 for revenues of the order of 332.34 million euros.

The incentive fee or *RI (redevance incitative)* is a household rubbish collection fee that varies according to the user’s actual use of the service. This fee applies to all users (households, businesses and public establishments, tradespeople, retailers, services, administrations, schools whose waste is usually collected by the local authority, and so on), unless they choose to call upon a private service provider. The aim of this fee is to encourage the generation of less waste and optimal material and energy recovery from household waste (increasing the amounts of waste that are channelled to recycling and composting). In this way, it aims to throttle the rising costs linked to the public waste service and improve its transparency. The incentive fee is composed of a fixed fraction that covers the expenditures that are not linked to the amount of waste collected, and a variable fraction linked to the amount of waste generated by the user. The

local authorities in France have four ways to calculate the amount of the variable part, as follows:

- counting the number of times the “grey bin” is picked up;
- weighing the “grey bin” when it is picked up;
- according to the “grey bin’s” size; the smaller the bin that the user chooses, the less he/she pays;
- paying for a special bin liner or sticker: The residual household rubbish is collected only if it is in bags sold by the local authority or bearing stickers sold by the authority.

In one municipality in 2006, for example, the fixed part was €75 and the variable part €0.44 for emptying the bin, €0.213 per kg of waste, plus a rental fee for the bin: €10.36/120 litres, €12.95/240 litres, or €50.30 /770 litres (ADEME, 2006).

The waste service’s financing is supplemented by contributions paid by the producers or distributors of goods. In this category we find financing from approved companies such as Eco-Emballage. Official subsidies (from the state, region, department, ADEME, and so on) and the sale of the products of the various waste treatment processes (selective sorting, reception and recycling centres, treatment centres, etc.) must also be added.

6. COMPETITION, CONCENTRATION, QUALITY, AND ACCESSIBILITY

Waste collection and processing services have attracted companies strongly through three different markets, to wit, waste collection, treatment, and recycling. According to ADEME, the number of calls to tender for all the contracts combined nevertheless began falling in 2004. However, it rose again after 2006 due to the many contracts that had to be renewed, as well as the creation of new waste incineration contracts.

In 2005, the Directorate-General for Competition, Consumer Affairs, and Fraud Control (DGCCRF) analysed competition on the waste treatment market. Its main observation concerned the presence of the same groups of operators throughout France, especially Veolia Environnement and Suez Environnement, and the concentration of contracts in a few hands. These two groups control close to 75% of the enterprises in the industrial waste sector. They are also leaders on the French household rubbish collection market. In some cases, Veolia and Suez have even created joint subsidiaries in the waste sector (for example, TRU in Lille).

Other operators nevertheless also compete in the sector. They include local enterprises and national enterprises (for example, the company Edinord Synergie Environnement in the Champagne-Ardenne Region and the Coved group). These operators have concentrated their activities in the household waste collection and treatment market. In contrast, the market for treating easily recoverable waste (paper, glass, and scrap iron) is characterised by a diversified supply of local and foreign operators. This does not apply to the recyclable household packaging market, which is largely dominated by enterprises from the materials industries. The Industrial Studies and Statistics Department (SESSI) indicates that in 2005 the 292 enterprises (with more than 20 employees) active in the recovery sector posted a combined turnover of 5.1 billion euros. According to the national economic statistics institute INSEE, the top ten household rubbish collection and treatment companies accounted for 25% of the sector's turnover in 2006, whilst the top fifty accounted for 69% of the turnover. The top ten accounted for 33% of the employees, whilst the top fifty accounted for 78%.

The waste collection and treatment companies are tending to develop oblique concentration. They are adopting a strategy of sectoral diversification, aiming for markets such as water and transport. What is more, they are concentrating their activities vertically so as to offer their customers a comprehensive service package (transport, pick-up, incineration, selective sorting, and so on).

As we see, the waste market is complex. On the one hand there is a market for providing services such as collection, and on the other hand a market to supply materials and equipment (especially bins and lorries). To this one must add a treatment facility and sorting centre operation market. According to an ADEME report on waste-related activity contracts published in March 2007, there was a general drop in the number of waste collection service and collection centre construction contracts. Similarly, the household rubbish treatment facility market slumped between 2005 and 2007, with incineration plants dominating the picture.

As for employment, INSEE set the number of paid jobs in the household rubbish pick-up and treatment sector at more than 65,000 in 2005. The National Union for Employment in Industry and Commerce, UNEDIC, counted 43,467 paid jobs in this sector in 2006, which was a 56.1% increase over 1996. There were 11,503 jobs in the sector for the disposal and treatment of the other forms of waste. This corresponds to a 97.8% increase between 1996 and 2006.

The **quality** of a waste service is linked to a great extent to the costs generated by this approach. To improve the service's quality, the local authorities have embarked on various spatial planning programmes, especially in the area of selective sorting. The IGD (Delegated Management Institute) signed a local public waste service charter with AMF, ADF, and ARF (the French associations of mayors, *départements*, and regions, respectively) in 2002 concerning the services' performance indicators. These indicators reflect such things as meeting the obligation to provide information, transparency vis-à-vis users and assessment of the public waste collection, disposal, and treatment services for household rubbish. The indicators are subdivided into two categories: major indicators and minor indicators. There are ten major indicators, namely,

1. The change in the amount of HHW and the like collected per capita.
2. The change in the amount of hazardous waste collected.
3. The percentage of the total cost that is covered by income from energy and material recovery.
4. Landfill disposal or storage rate.
5. Regulatory compliance of the various classes of treatment facilities.
6. Variation in the number of complaints.
7. Application of the special fee (RS).
8. Absenteeism.
9. Perpetuity of the major treatment facilities.
10. Net cost, all taxes included, of the public waste service per capita.

To these major indicators one can add the minor indicators, which refer to preventive measures, the density of waste collection and recycling centres (drop-off sites) with regard to the population, and so on.

In addition, Eco-Emballage and ADEME launched an initiative in 2008 creating a label²⁰ for public waste collection services. This scheme targets the municipalities with populations of more than 10,000 first and foremost. Its aims are to satisfy users, keep costs down, enhance performance, reduce environmental impacts, and improve the conditions of health and safety for the personnel. The IGD's indicators have been taken on board in this quality labelling scheme, which establishes two levels of quality:

²⁰ http://www.ecoemballages.fr/fileadmin/contribution/word/collectivites-locales/presentation-labellisation_.doc

- 1 QualiTri: The focus is on regulatory requirements and taking stock of the situation.
- 2 QualiPlus: The focus is on diagnosis, a plan of action, and a gradual improvement in the quality indicators.

In a press release, ADEME indicated that in 2007, sixty-five of the 162 local authorities that had applied for the QualiTri collection label got it.

Accessibility to the waste service is defined as the possibility for users to access the various services that are provided, such as waste collection, selective sorting means, and waste collection centres. An estimated 20.5 million tonnes of household rubbish, or 327 kg per head, was collected in 2005. The proportion of the French population that is served by door-to-door pick-up is 98%, with the remaining 2% being served by door-to-door and assembly-point pick-up. The frequency of collection rounds differs from zone to zone within the same EPCI. Rubbish is picked up weekly for 38%, twice a week for 34%, three times a week for 19%, and more than three times a week for 8% of users. One percent of the population sees the sanitation lorries less than once a week (ADEME, 2005).

According to IFEN's website, 17.6% of the population had door-to-door selective pick-up once a week and 6.6 more than once a week in 1997. In contrast, 58.2% of the population had no kerbside selective pick-up. That same year, 91.9% of the population had selective pick-up of glass, 68.3% selective pick-up of cardboard & paper, and 40.7% had selective pick-up of plastic. These rates have risen with the spread of municipal programmes or EPCIs over the past decade. ADEME estimates that 98% of the population (or 62,691,196 people) had access to selective pick-up in 2005: 93% for glass, 98% for dry materials, 30% for garden waste (excluding waste collection centres), and 55% for bulky waste (excluding waste collection centres).

In 2001, there were more than 2,856 waste collection centres on French soil. They serviced 21,180 municipalities (*i.e.*, 57.7% of the total) for a population of 43,6 million people (or 72.5% of the total). According to IFEN, 39% of the population had access to a waste collection centre within the confines of their municipality and 30% on the territory of another municipality. Close to 31% of the population thus did not have access to a waste collection centre at the time. ADEME repeated the exercise in 2005. This time close to 4,000 waste collection centres serving 91% of France's population, or some 57 million people, were totted up.

7. CASE STUDIES: PARIS, ROUEN, AND BESANÇON

To illustrate the foregoing, three different cases of waste management services in three French cities, namely, Paris, Rouen, and Besançon, will be examined.

A. Collection

The town hall is responsible for collecting waste in the city of Paris. Waste collection is managed through a corporation (*régie*), in a mixed organization, and through private service providers (Onyx-Veolia, Sita-Suez, and Nicollin). The city of Rouen transferred waste management to the *Communauté d'agglomération rouennaise* (Rouen Metropolitan Community) in 2002. Waste pick-up is subject to two different local public service management approaches, either directly by the municipal sanitation department (36.5% of the population), or by a service provider (63.5% of greater Rouen's population), in this case Coved and Onyx-Normandie. In contrast, the municipal sanitation department of Besançon was responsible for 100% of waste collection until 2006, after which the service contract was awarded to the Greater Besançon authority CAGB, which picks up 67% of the city's household rubbish, whilst the rest is contracted out to private companies (Nicollin, Sita).

B. Treatment

The city of Paris joined SYTCOM, which is the entity responsible for treating and recycling waste, directly. This work is done by private companies (Sita, Nicollin, Vador, Sievd, and so on) following calls for tenders. In contrast, the city of Rouen transferred waste management to the Rouen Municipal Community, which in turn delegated waste treatment to a larger intermunicipal consortium to which it belongs, Smédar. A mixed company was created in 2004 to optimise Smédar's treatment facilities. In the case of Besançon, waste treatment is entrusted to the Waste Treatment Mixed Association of Besançon and its Region ("SYBERT"), which is mainly in charge of the various tasks, *i.e.*, landfilling, incineration, industrial sorting, and composting. However, material recovery is done by private companies, which take charge of sorting the recyclable materials, notably the companies CFF Recycling ESKA, Sita Centre Est, and Nicollin, in addition to SYBERT. Three companies, namely, BIVAL, Nicollin, and Vermot, handle incineration.

C. Financing

Paris decided to finance its household and associated waste collection and treatment services by a residential sanitation tax (TEOM). The tax brought in 349 million euros in 2006 (Rapport d'activité, 2006). For Rouen, the residential sanitation tax (TEOM) is levied over the entire territory of greater Rouen in order to participate in financing household and associated waste management. The Rouen Metropolitan Community's council sets the amount of the tax by collection zone each year. The community has adopted the smoothing system for a ten-year period. In this way, the sanitation tax rate will be uniform over the entire territory of the metropolitan community (Rapport CAR, 2006). In 2007, the residential sanitation tax brought in a total of 29.13 million euros, up €1.73 million (a 6.3% increase) over 2006. In both cases, a special fee was applied to waste from businesses that is assimilated with household rubbish. There are also grants from Eco-Emballages, the Regional Council, and other sources.

The way of financing the public waste service that Besançon chose differs from those of Paris and Rouen. Besançon decided in 1999 to implement an incentive-based financing scheme via the bin tax ("REOM"). This scheme was extended to include all of the municipalities in Greater Besançon after waste collection responsibility for the 59 municipalities was transferred to the Greater Besançon authority (CAGB). This bin tax depends on the volume of waste generated by the household. The authority bills²¹ the household, joint ownership association, or rental agency (organisme bailleur). The bin tax brings in an estimate €13.8 million, which was 10.56% of the budget revenue in 2007. To ensure fair treatment of the population, the amount of the bin tax is calculated on the basis of the service rendered. Two methods have been applied. The first one, which was chosen by the city of Besançon proper, takes account of the number of bins, their unit volumes, and the time during which they must be made available. The second method, which concerns the municipalities that ring the city, involves a fixed part and a variable part according to the number of people in the household and the length of the service provided. The bin tax (REOM) covers the costs of waste collection, waste treatment, and structure costs (G. Besançon, 2007). The amount of this bin tax is thus based on a relationship between the bin volume and the frequency of the weekly rubbish pick-up. When the bin volume and frequency of pick-up rise, the amount of the tax rises as well. This increase is proportionate to the frequency and less proportionate to the increase in volume. The

²¹ CAGB sent out more than 90,000 bills in 2006.

amount of the bin tax ranges from 212 to 1331 euros. Here we see the bin tax's role as an incentive. It can effectively have three types of impact:

- 1- Environmental impacts: These are reflected in an increase in the effects of sorting by users and an increase in the amounts of waste recycled (40,791 tonnes of residual waste was collected in 2007 compared with 41,300 tonnes in 2006 and 10,791 tonnes of recyclable waste in 2007 compared with 10,600 tonnes of recyclable waste in 2006).
- 2- Economic impacts: These are directly related to the environmental impacts, for an increase in sorting and selective waste collection will engender increases in the costs of these operations. On the other hand, the costs linked to unsorted household rubbish collection will fall. Overall, the operating expenses will rise once the local authority takes charge of managing the tax rolls (less than 8% of the treasury costs in the case of the residential sanitation tax). The city of Besançon is estimated to have saved €5.25/inhab/yr.
- 3- Social and organizational impacts: These impacts are seen in a change in residents' behaviour, as they adjust to the waste collection system, especially the frequency of pick-up, and adopt greener consumption habits, engage in individual composting, and re-use or recycle things. All of this leads to a change in the service's internal organization.

D. Some indicators for comparison

| | Paris | Rouen | Besançon |
|---------------------------------|--|--|--|
| <u>Population</u> -Collection | 2 166 200 | 412 587 | 170 696 |
| -Treatment | 5 582 837 | 565 483 | 215 353 |
| <u>Cost</u> -Collection | €217/T | €171,94/T | - |
| -Treatment | €89/inhab 117.27€/T | €99.58/inhab €66.89/T | €33.46/inhab €48.3/inhab |
| TEOM | 159€/inhab | 72,57€/inhab | - |
| REOM | - | - | €66.5/inhab |
| HHW generated (kg/inhab/yr) | 373 | 327 | 337 |
| <u>Jurisdiction</u> -Collection | Municipality (Paris) | Intermunicipal consortium (CAR) | Intermunicipal consortium (AGB) |
| -Treatment | Intermunicipal consortium (SYTCOM) | Intermunicipal consortium (Smédar) | Intermunicipal consortium (SYBERT) |

CONCLUSIONS

Local public waste services have undergone some major changes in recent years in the wake of recommendations from the European Commission aimed at liberalising and increasing the effectiveness of such services in a more competitive market. New organizational and governance schemes have been developed, triggering in turn reactions by the local authorities. The State and its decentralised bodies continue to play an important part in the waste sector when it comes to defining the various parties' responsibilities. Monitoring the public waste service and ensuring compliance with the applicable environmental standards continue to remain full powers of the State, which exercises them through its decentralised bodies. On the local level, the municipality or associations of municipalities supervise the services provided by private companies.

In France, the municipalities are required to collect waste and keep the towns clean. Intermunicipal cooperation has boomed over the past decade. Some groups of municipalities are specialised in waste collection and financed by taxation; other, larger, groups are in charge of waste treatment and receive fees paid by the member authorities. The local authorities that are responsible for waste management choose from amongst various ways of managing this most complex service, *i.e.*, direct provision of the service, provision through a public agency, public procurement contracts, and delegation. In this context, the enterprises that are specialised in this sector are expanding, concentrating their action on treatment and recycling and, more particularly, on ordinary industrial waste (OIW). More generally, public waste services in France are managed to a large extent by private companies that are awarded contracts after calls for tenders, especially in the areas of incineration, composting, and storage, as well as for the pick-up and transport of waste. The authorities try to avoid being too dependent on a single private operator with a monopoly over the services. In the case of Paris, the city itself continues to collect its waste. In contrast, Rouen and Besançon have transferred waste collection to associations of municipalities (their metropolitan communities). As for waste treatment, this power has been transferred to an intermunicipal cooperation agency (EPCI) in all three cases.

The legal structure of the local public waste service is variable. The municipalities tend to prefer the intermunicipal consortium with its own tax powers. This tendency is due to the specific ways in which waste management services are financed (residential sanitation tax, bin tax, and special fee). However, rural areas are characterised by a preference for traditional associations (multi-purpose or single-purpose intermunicipal

associations, abbreviated as “SIVOM” and “SIVU”, respectively) or “communities of communes”. In contrast, the EPCIs, urban communities, and metropolitan communities predominate in urban areas.

Financing the waste service through a local tax (residential sanitation tax or TEOM) does not cover all of the expenses. Consequently, the municipalities’ general budgets fill the gap. In the cases of Paris and Rouen, the TEOM is supplemented by the general budget. Relying on a bin tax (REOM) is not yet widespread in France, although it has the advantage of making households more responsible for their waste output and thus getting them to cut their waste production at the source. The revenue trends for the TEOM and REOM are good indicators of the transformations that the public service’s financing is undergoing. This revenue is supplemented in all cases by aid and subsidies that are designed more to set up selective sorting mechanisms and awareness-raising campaigns. The costs of managing the sanitation and bin taxes are 8% for the sanitation tax (TEOM) and 3-6% for the bin tax (REOM). Keeping the waste treatment costs down is achieved by economies of scale. The associations of municipalities are tending to cover larger territories so as to increase the amounts of waste that are treated.

Privatisation raises questions about market concentration, for a small number of multinational corporations have divided up the various waste management segment markets. These companies are also waging oblique concentration strategies to diversify the sources of their profits as well as vertical concentration strategies to control the supply upstream and distribution downstream from collection and treatment. Groups such as Veolia and Suez are well ensconced on the Parisian and Rouen markets through their subsidiaries Onyx and Sita.

The waste service and its various segments are moreover creating more and more jobs. The development of selective sorting and recycling has been accompanied by a great surge in the number of jobs, especially for unskilled workers and people in back-to-work schemes.

To increase the quality and accessibility of the services provided, the authorities are trying to develop selective pick-up and sorting in the home and to increase the number of waste collection centres so that users will not be more than a ten-minute drive from a collection site. Individual composting is considered the new challenge for local authorities. Indeed, the sanitation officials in all three cases examined above (Paris, Rouen, and Besançon) envision actions to promote composting at home.

The work done by environmental associations to raise people's awareness and inform them nevertheless remains crucial in order to get them to adopt green consumption habits, to sort their rubbish, and to re-use materials.

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- Agence de l'environnement et de la maîtrise de l'énergie (ADEME) www.ademe.fr
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- CAR <http://www.agglo-rouennaise.fr/>
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