



2004
Activity
report



02

A public service

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**Sorting
and recycling**

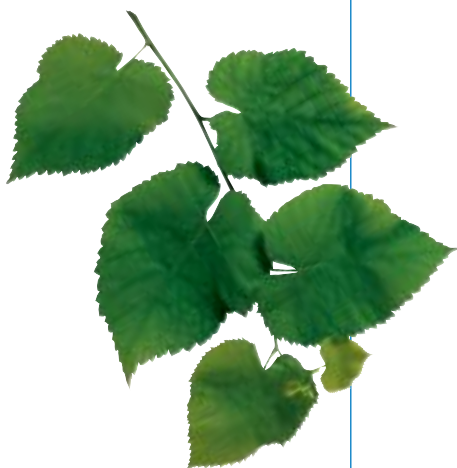


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Energy from waste

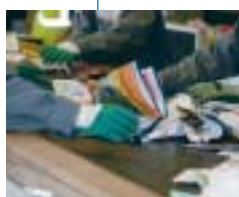
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**Resources for public
service delivery**

A committed strategy for reducing household waste

A key element of 2004 was SYCTOM's pioneering commitment to a strategy of waste prevention. The Syndicate's elected members and its 85 member municipal councils adopted the **objective to reduce the waste for incineration or landfill disposal by 300 000 tonnes per year over the next five years.**

This entails, in practical terms, the improvement of sorting performances of selective collection and bulky waste management. The challenge is to obtain more and better quality materials for sorting, to derive higher usage value by more efficient techniques. It involves also the development of biomethanization as a means of treating the fermentable fractions of household waste, with an initial project at the Romainville site East of Paris. Furthermore, the task means the mobilization of everyone to reduce refuse at source: replace plastic carrier bags by reusable shopping bags, limit the receipt of unsolicited advertising and publicity leaflets using a "Stop Pub" sticker, favour the use of tap water for drinking rather than bottled water, salvage and recycle textiles and old clothes, and so on. There is nothing inevitable about ever-increasing volumes of waste!

A study by the Paris urban area waste disposal observation office ORDIF forecasts a risk of a shortfall in processing capacity in that region in the short-term. It also brings into relief an uneven distribution of processing centres, with repercussions for truck traffic intensity.

SYCTOM, having already made this observation, is taking its responsibilities with a key investment programme: three additional sorting centres the first of which, Isseane, will be in the Hauts-de-Seine department close to Paris, and a biomethanization plant in Seine-Saint-Denis, on the North-East side. Substantial development of transport alternatives to road haulage is part and parcel of this set of measures.

The Ile-de-France Regional Council, which henceforth has the statutory authority to set the regional domestic waste elimination plan, is now to launch the consultation process with all parties concerned. On the basis of a common diagnosis, lines of policy will be decided. I suggest that they hinge on three major elements: waste and pollution prevention, diversification of processing methods, and the sharing of transfer installations and processing plants between the various syndicates and private operators.

SYCTOM, not content to wait, is already working to fulfil these objectives.

François DAGNAUD
Chairman of SYCTOM
of the Paris urban area



A public service provided for 5.5 million users



History

1896: construction of the Paris region's first domestic-waste processing plant at Saint-Ouen, soon followed by others at Romainville and Issy-les-Moulineaux.

1910: construction of the processing plant at Ivry-sur-Seine.

1984: setting-up of SYCTOM of the Paris urban area, which inherited all the facilities and equipment, at the time consisting of 60 member municipal councils.



A high-density urban area

With 85 member municipal councils in 2004, and 4 client municipal councils *, spread over 5 administrative departments, which makes up a catchment area with 5.5 million inhabitant, Syctom (*Syndicat intercommunal de traitement des ordures ménagères*, (Inter-municipal domestic waste processing syndicate)) of the Paris urban area deals with household waste disposal of the most densely populated and intensely urbanized in France (907 inhabitants./km²).

In this sector of operation, where high-rise housing predominates - nearly eight out of ten inhabitants live in apartment blocks -,

refuse production is higher than anywhere else in France: 500 kg per inhabitant per year, compared with a national average of 440 kg and an average for the Île-de-France region of 480 kg. This amounts to an annual production of 2.7 million tonnes of household waste. Urban ways of life and consumer habits result in a higher volume of packaging waste and a lower quantity of organic refuse than in the rest of the country.

Direct members and primary syndicates

The municipal councils that have joined

Syctom have done so either directly, or by way of primary syndicates set up before SYCTOM came into being in 1984. This is the case of SYELOM, which groups together 30 councils from the Hauts-de-Seine department (23 direct memberships and 7 indirect ones arranged via 2 inter-municipal authorities responsible for refuse collection), and of SITOM 93, which brings together 38 municipal councils from the Seine-Saint-Denis department (27 councils directly subscribed and 11 indirectly so through the membership of 2 inter-municipal refuse collection authorities). These two primary syndicates

delegate the responsibility for processing, recovery and recycling of waste to SYCTOM. They are special partners that play a role alongside their members, one of providing information, assistance with decision-making and monitoring their selective collection. SYCTOM has 17 municipal councils as direct members: the city of Paris, 3 in the department of Yvelines, and 13 in the Val-de-Marne (11 as direct members and 2 that are members via their participation in an inter-municipal refuse collection authority). In Seine-Saint-Denis, 9 member municipal councils have prior processing contracts still running. They therefore do not yet confer their household refuse treatment to SYCTOM, but only their selective collections (Clichy-sous-Bois, Coubron, Dugny, La Courneuve, Neuilly-Plaisance, Noisy-le-Grand, Pierrefitte, Stains and Vaujours). In 2004, 3 additional councils began sending their domestic refuse and bulky waste into the SYCTOM system (Livry-Gargan, La Garenne-Colombes, Villeneuve-la-



In Paris and its urban area, consumer habits generate ever increasing amounts of packaging.

Garenne). All the municipalities are eventually destined to become full participants feeding into the network. In any case, such councils already arrange for processing of the glass they collect directly on their territory, making a total of 101 011 tonnes in 2004.

SYCTOM characteristics

- > a catchment area of 5.5 millions residents, making up 9% of the population of France, over 5 departments: Paris, Hauts-de-Seine, Yvelines, Seine-Saint-Denis, Val-de-Marne;
- > 17 member municipal councils and 68 municipal councils with indirect membership via 2 primary syndicates;
- > 4 clients, ex-member municipal councils;
- > 6 inter-municipal authorities: Arc-de-Seine; Val-de-Seine; SEAPFA; Plaine Commune; Charenton-Saint-Maurice; Grand-Parc;
- > a "resource" of 2.7 million tonnes of household waste.

* 4 municipalities, members of SYELOM (Sceaux, Bourg-la-Reine, Le Plessis-Robinson) and SYCTOM (Châtenay-Malabry) left the Syndicate for administrative purposes in 2004 after joining the inter-municipal urban district of Hauts-de-Seine, which decided to join another processing syndicate. Their waste arisings were nevertheless treated by SYCTOM during 2004 under a temporary agreement.

The statutory framework from 1975

Four main texts govern the responsibilities of the different partners concerning household waste collection and treatment:

- the Act of 15 July 1975 conferred on municipal councils the obligation to collect and manage household waste;
- the Act of 13 July 1992, known as the "Royal" Act, reinforced these obligations and fixed new objectives: the recovery and recycling of waste, the prevention and reduction of their harmful properties, organization and minimizing of waste transport, and provision of public information. It also provided for the prohibition of dumping raw refuse from 1 July 2002. From this date, only the final "residual" wastes, i.e. those from which the recoverable and reusable fractions have been extracted or those which cannot be so treated given the conditions of the time, can be sent to landfill storage centres. The law also institutes the drawing-up of Departmental Plans for Domestic Waste Elimination: these fix the objectives for collection and treatment at department level. They also determine the means to be mobilized

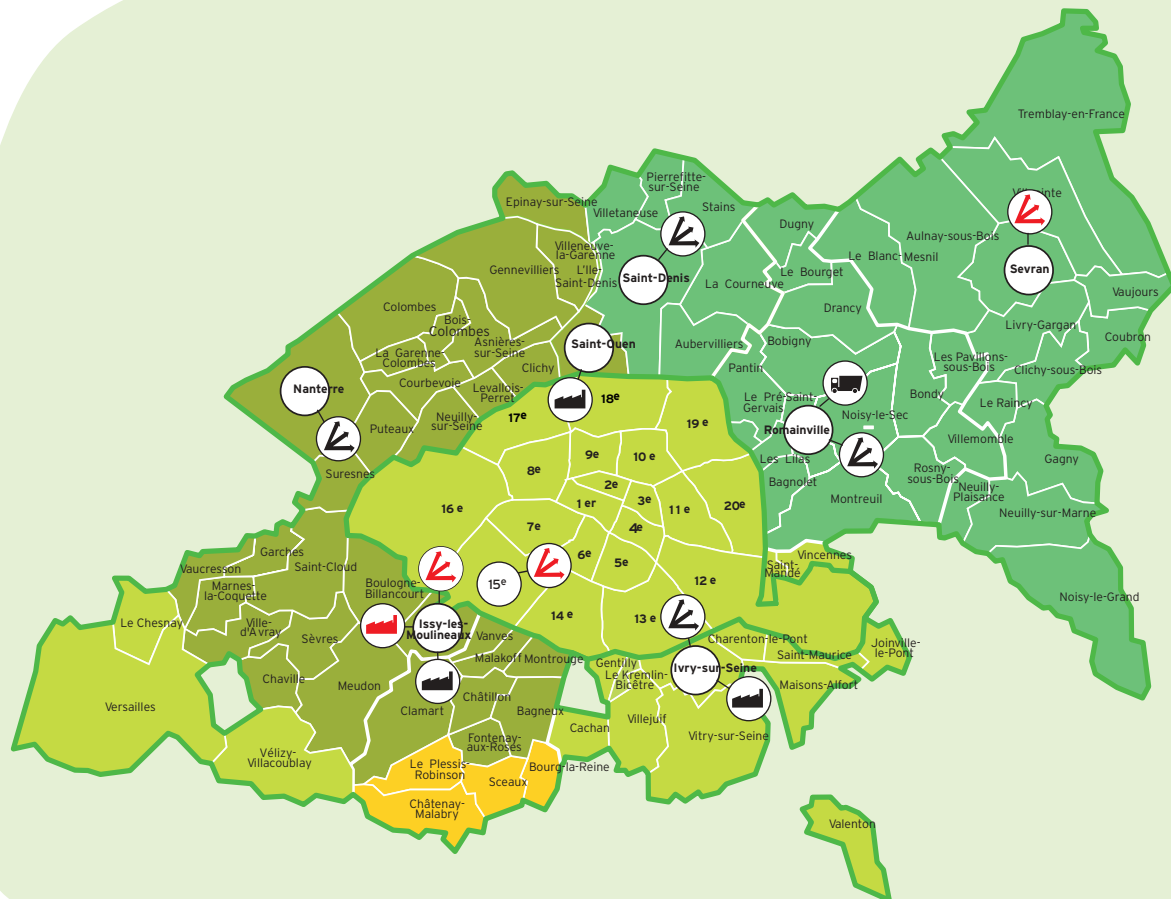
to accomplish it. SYCTOM must therefore comply with five distinct departmental plans;

- the circular of 28 April 1998, supplemented by the circular of 28 August of the same year, modifies the waste management policy by giving priority to materials recovery and recycling and prompted a review of departmental plans. A fifth text was added, complementing this legal and regulatory framework for the Ile-de-France Region (Paris and the surrounding area):
- the Act of 13 August 2004 relating to the liberties and responsibilities of local authorities makes provision for covering the Ile-de-France by means of a Regional Plan for the Elimination of Domestic and Related Waste (PREDMA). In an arrangement especially tailored for the Ile-de-France, this jurisdiction was conferred to the Region, which hitherto takes over the role from the Departments. The plan, which now depends on the initiative and responsibility of the Regional Council, will nevertheless be devised in consultation with the eight Departmental Councils.












A much strengthened legal and regulatory framework.

SYCTOM's area of operation and waste treatment sites



The municipal councils and primary syndicates forming the SYCTOM territory

-  Planned sorting centre
-  Planned Energy from waste (EfW) plant
-  Sorting centre
-  EfW plant
-  Sorting and transfer centre

-  17 direct member municipal councils
-  30 municipal councils with membership via Syelom (intermunicipal syndicate for the Hauts-de-Seine department)
-  38 municipal councils with membership via SITOM 93 (primary syndicate for the Seine-Saint-Denis department)
-  4 client municipal councils
 - 5 departments: city of Paris, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne, Yvelines
 - 5.36 millions residents
 - 2 525 379 tonnes of household waste directly processed by SYCTOM in 2004 (out of 2 710 387 tonnes collected over the operational area, with municipal councils not yet sending waste to SYCTOM, and glass, which is not handled by SYCTOM)

Five sources of non-processed waste

The waste collected by the member municipal councils and syndicates comes from five distinct sources:

- so-called traditional domestic waste collection concerning mixed non-recyclable waste, thrown in a bin by the user.
This waste is channelled to incineration

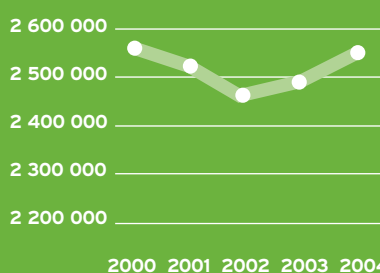
centres equipped with furnaces for energy recovery;

- selective collection concerns recyclable materials that the user has separated beforehand: plastic bottles, cardboard packets, food cartons, food cans, glass bottles and jars, newspapers, advertising brochures and magazines. The user throws this kind of waste into specially designated bins. It then goes to specialist centres, where it is sorted mechanically and by hand before being passed on to recycling operators for materials recovery and reuse. The only exception is glass, which does not go to SYCTOM installations, but is retrieved directly by glass manufacturers

(except for two municipal councils which send glass to the Nanterre sorting centre);

- bulky waste consists of household objects: used furniture, mattresses, electrical appliances and so on. They cannot be taken by standard collection because of their weight and volume. After sorting, certain items are used as a source of materials for recovery, reuse and recycling;
- The waste brought to the processing site includes the bulky objects, small quantities of toxic material (the Ivry centre accepts small batteries, paint, solvents and used motor oil) and diverse waste (rubble, wood and so on) not handled by household waste collections or selective collection owing

**Trends in quantities
of waste processed by SYCTOM
(in tonnes, all types included)**



SYCTOM's area of operation produces more household waste than in the rest of France, and the quantity of waste processed is constantly rising.



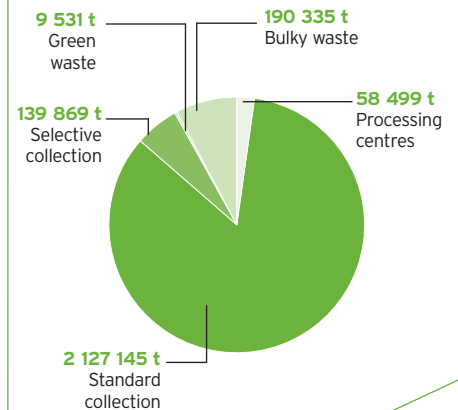
to their weight, volume or toxicity. These categories, put in separate containers, are then channelled for recycling or for elimination via specialist services, then in special burial sites;

- green waste products result from



garden and open space upkeep and maintenance: grass cuttings, leaves, branches and so on. They come from municipal councils that provide a specific collection service or are brought by users straight to waste treatment centres.

Breakdown of the different categories of collection 2004



SYCTOM's projects for the Paris urban area

The year 2004 is crucial for the Syndicate, which is committed on several fronts, working to the overall principle of sustainable development: use a variety of methods of processing and recovery, cut pollution and develop the use of modes of transport alternative to road haulage, and moreover to reduce the quantities of waste to be processed in the first place.

In order to fulfil its mission, SYCTOM is currently equipped with:

- three sorting and recycling centres to handle selectively collected waste, at Nanterre, Romainville and Ivry-Paris XIII;
- two bulky object sorting centres at Romainville and Saint-Denis;
- three incineration centres with Energy from Waste plant, at Saint-Ouen, Ivry-Paris XIII, and Issy-les-Moulineaux, where a new plant under construction, Isseane, will replace the present installation in 2007;
- a transfer centre at Romainville which regulates the flow of waste between the different processing centres;
- three waste processing sites, at Romainville, Ivry-sur-Seine and Saint-Denis.

Isseane, a multiprocess centre

In order to replace the present energy recovery plant at Issy-les-Moulineaux, where



Developing alternative modes of transport to cut down road traffic and opening a multiprocess centre (Isseane).

incineration is planned to cease at the end of 2005, SYCTOM is building a sorting and EfW centre, at quai Roosevelt in that municipality. Called Isseane, this new facility will treat the

household waste from a catchment area taking in 17 municipal boroughs of the Hauts-de-Seine, 3 in the Yvelines and 3 arrondissements of the west part of Paris. This represents 1.1 million residents (Bagneux, Boulogne, Chaville, Châtillon, Clamart, Fontenay-aux-Roses, Garches, Issy, Malakoff, Marnes-la-Coquette, Meudon, Saint-Cloud, Sèvres, Suresnes, Vaucresson, Vanves, Ville-d'Avray, Le Chesnay, Vélizy, Versailles, Paris XVth, XVIth and XVIIth). This project was declared of general public interest in March 2000. It forms part of the Departmental Plan for Waste Elimination (PDED) in Hauts-de-Seine.

From 2007, when it will come into service, Isseane will process 460 000 tonnes of non-recyclable waste by means of energy recovery, which will provide heating for 80 000 homes and generate a saving worth 110 000 tonnes of oil-equivalent. The centre will also process 20 000 tonnes of packaging and deal with 30 000 tonnes of bulky products for retrieval and reuse of materials, thanks to its sorting centre. A charter of environmental quality, signed on 20 December 2000 with Issy-les-Moulineaux council, guarantees the conditions of quality, safety and environmental protection during the four years of works and 40 years of operation.



Artist's impression of the future sorting centre in the XVth arrondissement of Paris (view from the ring road). The centre will have an average annual capacity of 15 000 tonnes, and should be in service by the end of 2007.

Two sorting centres, at Sevran and Paris XVth arrondissement

These new sorting centres, devoted exclusively to multi-material selective collection (recyclable packaging and newspapers/magazines), are part and parcel of the SYCTOM's policy of diversifying household waste processing methods, in particular for materials recovery and reuse, alongside development of selective collection. The first sorting centre, with an annual operational capacity of 10 000 tonnes, will see light of day at Sevran. Construction works are planned to begin in autumn 2005 with the objective of bringing it into service

in spring 2007. This new facility will process waste from selective collections taken from a catchment area of 11 municipal councils in the Seine-Saint-Denis department, making up a population of 350 000 (Aulnay-sous-Bois, Le Blanc-Mesnil, Clichy-sous-Bois, Coubron, Le Raincy, Livry-Gargan, Les Pavillons-sous-Bois, Sevran, Tremblay, Villepinte, Vaujours). The other sorting centre, with a capacity of 15 000 tonnes per year, will be built in the XVth arrondissement of Paris, rue Henri-Farman, between the heliport and the ring road. Works will start in the second half of 2006. It is due to be operational by the end of 2007.

Three other projects for sorting sites within the city of Paris are at the preliminary survey stage : at Batignolles (XVIIth arrondissement), Bercy (XIIth) and Evangile (XVIIIth).

An environmental quality charter will be signed with the councils of the municipalities hosting these first two sorting centres, as has been the case for SYCTOM's previous installations. These projects demonstrate the determination of SYCTOM of the Paris urban area to continue the setting-up of neighbourhood sorting centres in order to limit the distances travelled by refuse collection vehicles and hence lower greenhouse gas emissions as well as costs to the municipal councils.

Methanization plants in the Seine-Saint-Denis department

Methanization is a waste recovery method that produces biogas, which can be used for generating electricity, urban heating systems or as fuel. It contributes to the reduction of greenhouse gases and to the preservation of fossil energy reserves. In line with the Seine-Saint-Denis Departmental Plan for Domestic Waste Elimination and the wishes of the elected members SYCTOM of the Paris urban area, two waste methanization plants, with an overall capacity of 200 000 tonnes, are planned. These are to be sited in the Seine-Saint-Denis department, one at Romainville to be in service by 2009. Only two plants for this sector of waste recovery are currently in service in France, at Amiens and Varennes-Jarcy (Essonne), but it is a method that is to be developed.

Investments per projet in 2004 (exclusive of tax)

Isseane: 92 millions euros for a total budget of 528 millions euros;
Saint-Ouen: 16 millions euros (smoke treatment);
Ivry-Paris XIII: 12 millions euros (smoke treatment);
Nanterre: 7 millions euros;
Romainville: 201 000 euros;
Paris XV: 96 000 euros (studies stage);
Sevran: 15 000 euros (design and construction study costs).

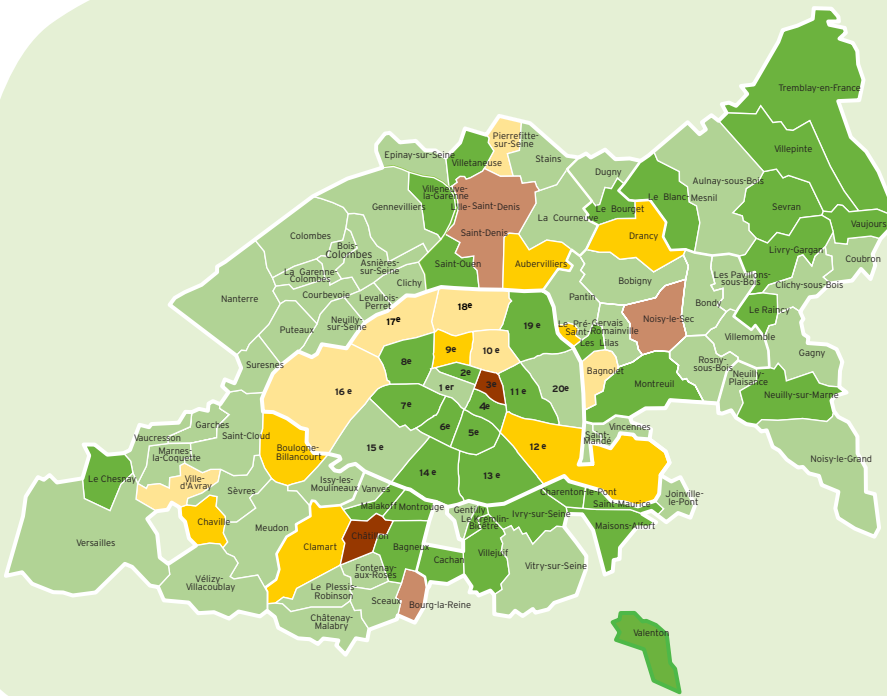


The future sorting centre at Sevran (architect's view of the site entrance) is set to come into service in spring 2007.

Trends in tonnes of arisings between 2003 and 2004: a large increase in selective collection

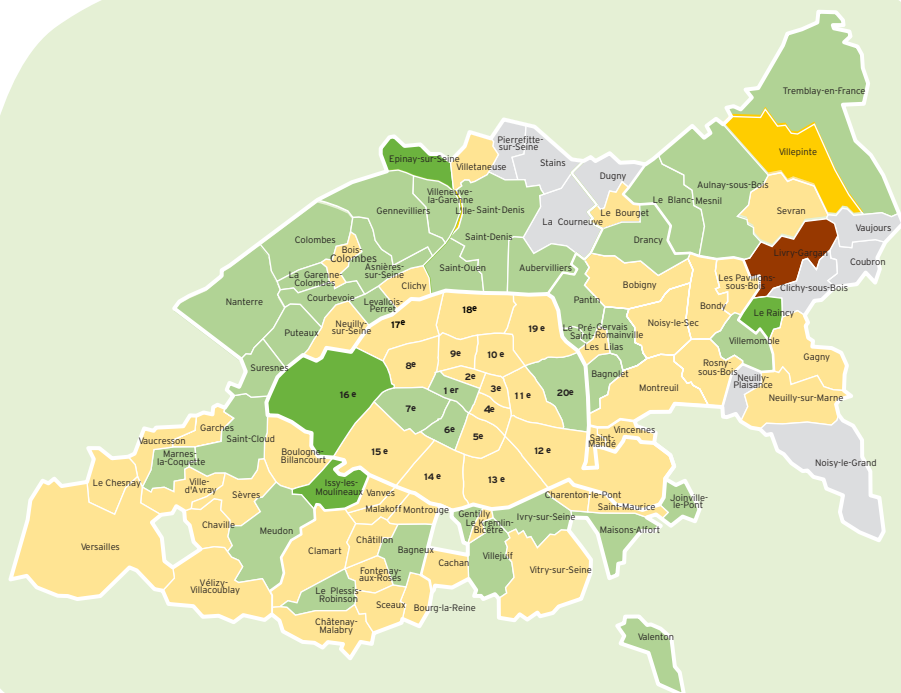
Selective collection tonnages per municipal council between 2003 and 2004.

- Decrease by more than 10%
- Decrease by 10% to 0
- Increase by 0 to 10%
- Increase by 10% to 50%
- Increase by 50% to 100%
- Increase by more than 100%

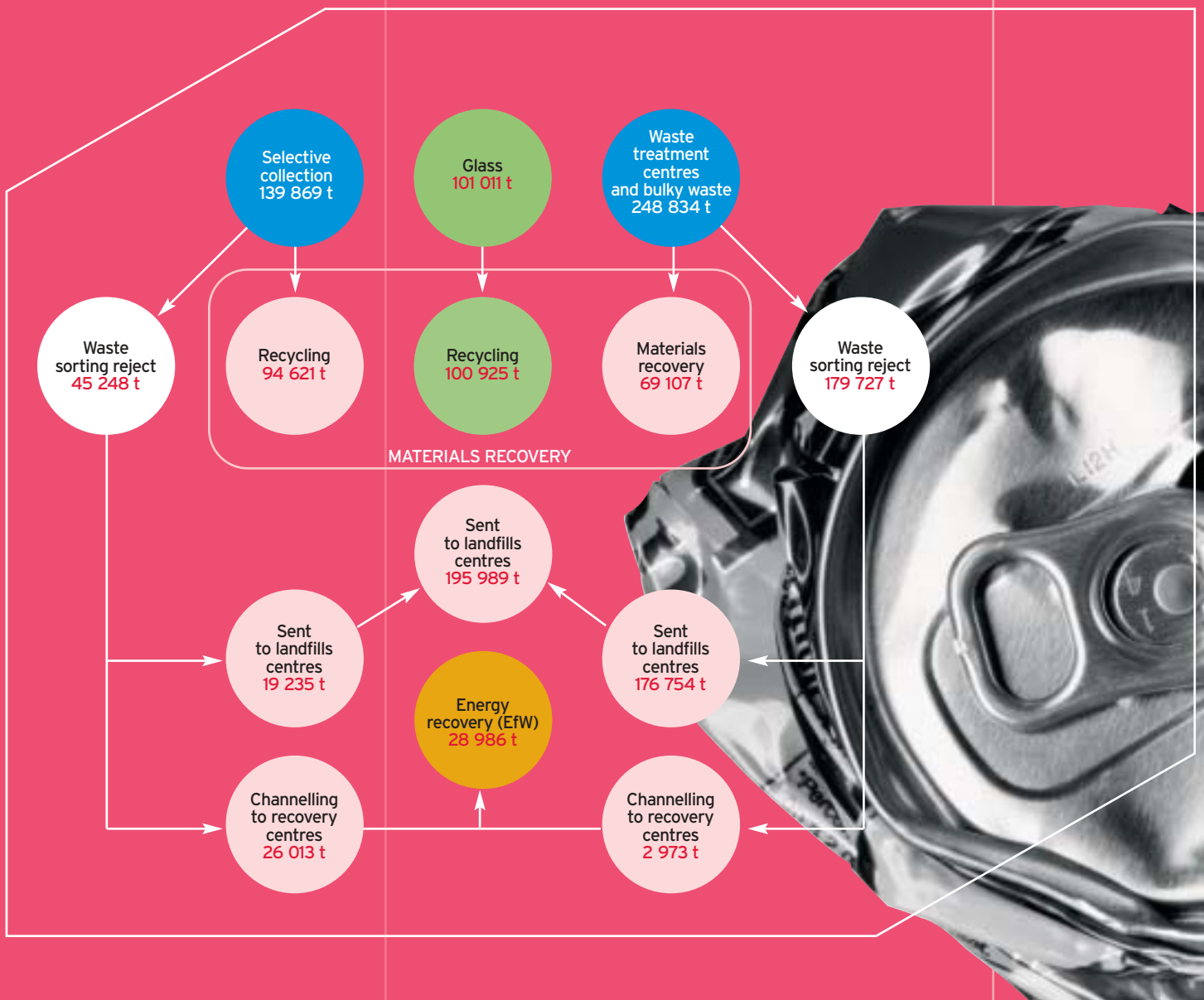


Household waste tonnages per municipal council between 2003 and 2004.

- Decrease by more than 10%
- Decrease by 10% to 0
- Increase 0 to 5%
- Increase by 5% to 10%
- Municipal council sending waste to SYCTOM since 2004
- Municipal council not sending waste to SYCTOM



Sorting and recycling From waste back to raw materials...





68%

Recovery rate from selective collection (all selective collection sorting centres included).

22%

Recovery rate for bulky items (all bulky waste sorting centres included)

■ **note:** tonnages received at centres = 190 335 t (total recovered = 42 088 t).

46%

Recovery rate for non-processed waste received at treatment centres

■ **note:** tonnages received = 58 499 t (total recovered = 27 019 t).



A steady growth in materials recovery

More than 52% of selective collections since 2001

It is SYCTOM's policy to increase materials recovery and reuse, in tandem with the development of selective collection systems. The Syndicate gives incentives for municipal councils to increase selective collection in the form of assistance amounting in 2004 to 45.73 Euros/tonne of selectively collected waste, plus exemption from payment of the usual service charge of 71.34 Euros/tonne. Such aid represents in 2004 a total saving for municipal councils of 117 Euros/tonne of selectively collected waste.

Recycling, or the recovery and reuse of materials, consists in retrieving certain materials from the mass of waste deposits so they can be passed on to companies that can use them as raw materials. For instance, old papers collected can be reused for manufacturing new paper. The same goes for cardboard and glass.

In order to have good quality materials with reuse value, waste must first be sorted, then separated according to category. Development of this sector entails making selective collection standard practice everywhere and extending the network of waste processing centres, which are

indispensable for waste sorting and organizing flow of materials into separate streams.

Recovery and reuse of materials concern:

- waste channelled from selective collection (domestic packaging, newspapers/magazines);
- bulky items and waste brought into waste treatment centres (mainly metals, cardboard boxes, wood and rubble);
- incineration by-products: metal slag or clinker, steel and aluminium. Clinker is used in the construction of road base-layers; steel and aluminium are extracted from the slag and passed on to the steel industry for recycling. Waste products from selective collection are transferred in bulk to sorting centres.

Refined sorting is effected mechanically on the roughly selected waste and finished by hand. The different materials are then prepared and dispatched to industrial companies that take them to be recycled and can be used in manufacture of new products: Glass is collected via a separate channel, either brought in voluntarily by users or thanks to selective collection, in containers devoted exclusively for it. It is transferred directly to the system Verre Avenir for transformation into new material of sufficient value for manufacturing, without passing through the SYCTOM sorting centres.

Nevertheless, a minor proportion of the waste glass resource (a few hundred tonnes) is taken in at the Nanterre centre.

As for bulky items, collected by the municipal councils, they are dispatched to the various sorting centres equipped to handle them. Some waste that follows this route is unfit for use as good quality reusable material: organic waste, soiled packaging or packaging bearing a mixture of materials that cannot currently be recycled. These sorting rejects are sent to energy recover plants or considered as residual, non-processable, waste and buried as landfill.

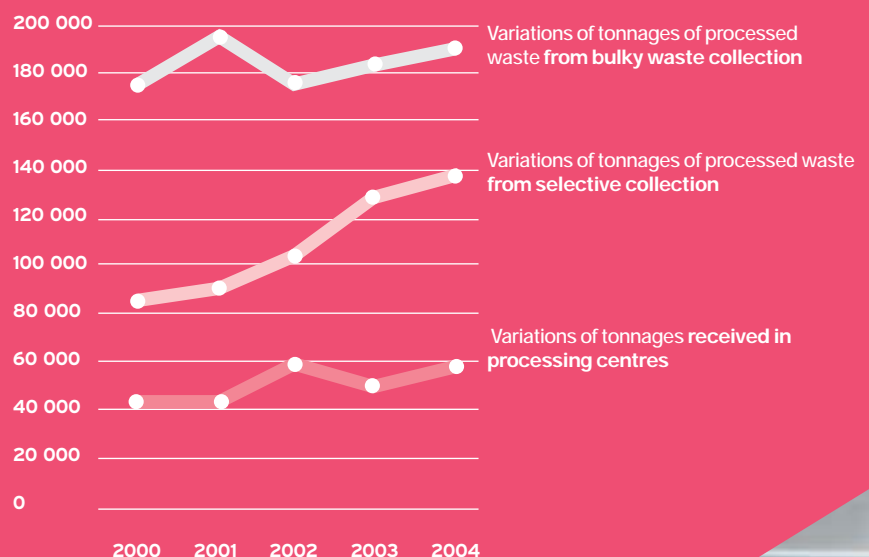
All collection methods on the increase

In 2004, almost all residents in SYCTOM's operational areas sort their waste. Selective collection has indeed been progressing steadily since the early 1990s. This trend is being confirmed year on year: the quantities collected have thus risen from 26 245 tonnes in 1994 to 139 869 tonnes in 2004. Such growth leapt by more than 23% between 2002 and 2003 with the implantation of selective collection in all the arrondissements of Paris. It continued significantly in 2004, increasing by 7.5%.

The tonnage of bulky waste rose moderately, from 183 842 tonnes in 2003 to 190 335 tonnes in 2004, an increase of 3.5%, as had been the case between 2002 and 2003. However, after a slowdown linked partly to the economic situation but especially to the partial closure of the Romainville processing site in 2003, the tonnages of waste arisings brought to processing centres resumed their climb in 2004, with an increase of more than 12%: SYCTOM took 58 499 tonnes this year, compared with 52 182 tonnes last year. This is a rise that again confirms the constant growth, developing over the past ten years, in use of the service proposed by the processing centres.



Trends in tonnages of arisings treated by SYCTOM



Performances of selective collection to be improved

Strong disparities were observed in selective collection performances per inhabitant between different parts of SYCTOM's operational area. This heterogeneity in performance suggests that progress can be envisaged for municipal councils with the lower ratios. The quality of the selective collection fed into each centre strongly influences the quantity of materials recovered for reuse. This is why SYCTOM of the Paris urban area encourages municipalities to conduct collection monitoring, in parallel with their communication campaigns, with quality control in order to improve their selective collection results, both qualitatively and quantitatively.

Comparison of selected collections with or without glass

| 2004 | Lowest ratio | Highest ratio | Average ratio |
|---|---------------|----------------|---------------|
| Selective collection (not counting glass) | 5 kg/res./yr | 73 kg/res./yr | 26 kg/res./yr |
| Selective collection (glass included) | 14 kg/res./yr | 128 kg/res./yr | 45 kg/res./yr |



Saint-Denis: 70% of bulky waste taken away by waterway transport

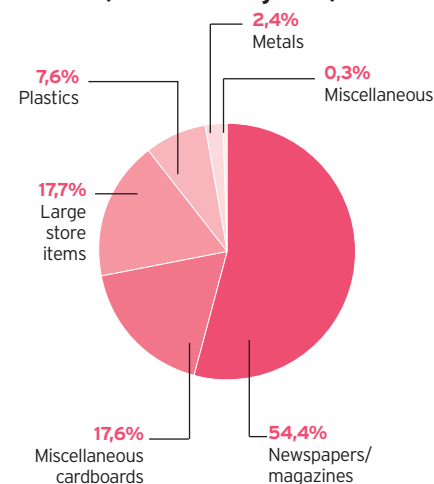
This single site groups together a waste processing centre and a sorting centre which receives the bulky waste collected by 20 municipal councils and some Paris arrondissements from their residents. Its annual capacity is 60 000 tonnes. In 2004 the site took in 60 588 tonnes of bulky waste, including 9 596 tonnes deposited in the waste processing centre directly by users.

In 2004 Syctom with the company Generis, its service provider, decided to reorganize the operations of the sorting centre in order to use waterways and improve the reuse value of materials recovered.

Since 1 January 2005, 70% of tonnages received, making up annually 43 000 tonnes of bulky waste, are transferred by river to the Bonneuil-sur-Marne sorting centre. The barge transport thus avoids traffic generated by an annual 2 600 truck journeys of about 26 km.



Proportional breakdown of materials sorted in selective-collection sorting centres (all centres together)



Tonnages received = 139 869 t
Total recovered for reuse = 94 621 t

Sorting capacities in full growth

Multi-material selective collection is increasingly significantly in SYCTOM's member municipalities. The Syndicate is therefore pursuing initiatives to expand its sorting capacities in order to meet the resulting increase in volumes.

Romainville, opened in 1993, is the first large-capacity mechanized sorting centre in France. Installed on the one site are a selective collection centre with an annual capacity of 45 000 tonnes, a bulky-waste sorting centre of 75 000 tonnes/year and a waste processing centre. In 2004, a total of 115 541 euros was invested in renovation of staff premises, thus completing modernization works taken on at the site in 2003.

Ivry-Paris XIII, operational since 1997, is the first multi-process centre of the Paris urban area. It consists of an Energy from Waste plant, a waste processing centre and a sorting centre, with an effective capacity of 30 000 tonnes/year. Process modernization work will be conducted in 2005.

The **Saint-Denis centre**, opened in 1984, comprises a waste processing centre and a sorting centre devoted to bulky waste, with an annual capacity of 60 000 tonnes.

The **Nanterre** selective collection sorting centre is the latest addition to SYCTOM's facilities. It came into service in June 2004. With a capacity of 40 000 tonnes per year, it processes the selectively collected waste of one million residents of the West part of Paris.



The Nanterre sorting centre began activities in 2004.

The centre is located in the Guillaumes ZAC development area, and building began in October 2002 according to principles of high environmental quality in line with the sustainable development objectives of SYCTOM of the Paris urban area (see part 5). Right from the design stages and like in any new project, Syctom ran an information and participation promotion campaign with the residents, the associations and different partners, which bore fruit with the signing on 14 May 2003, of a "charter of environmental quality", drawn up jointly with the Nanterre municipal council. This latest-generation

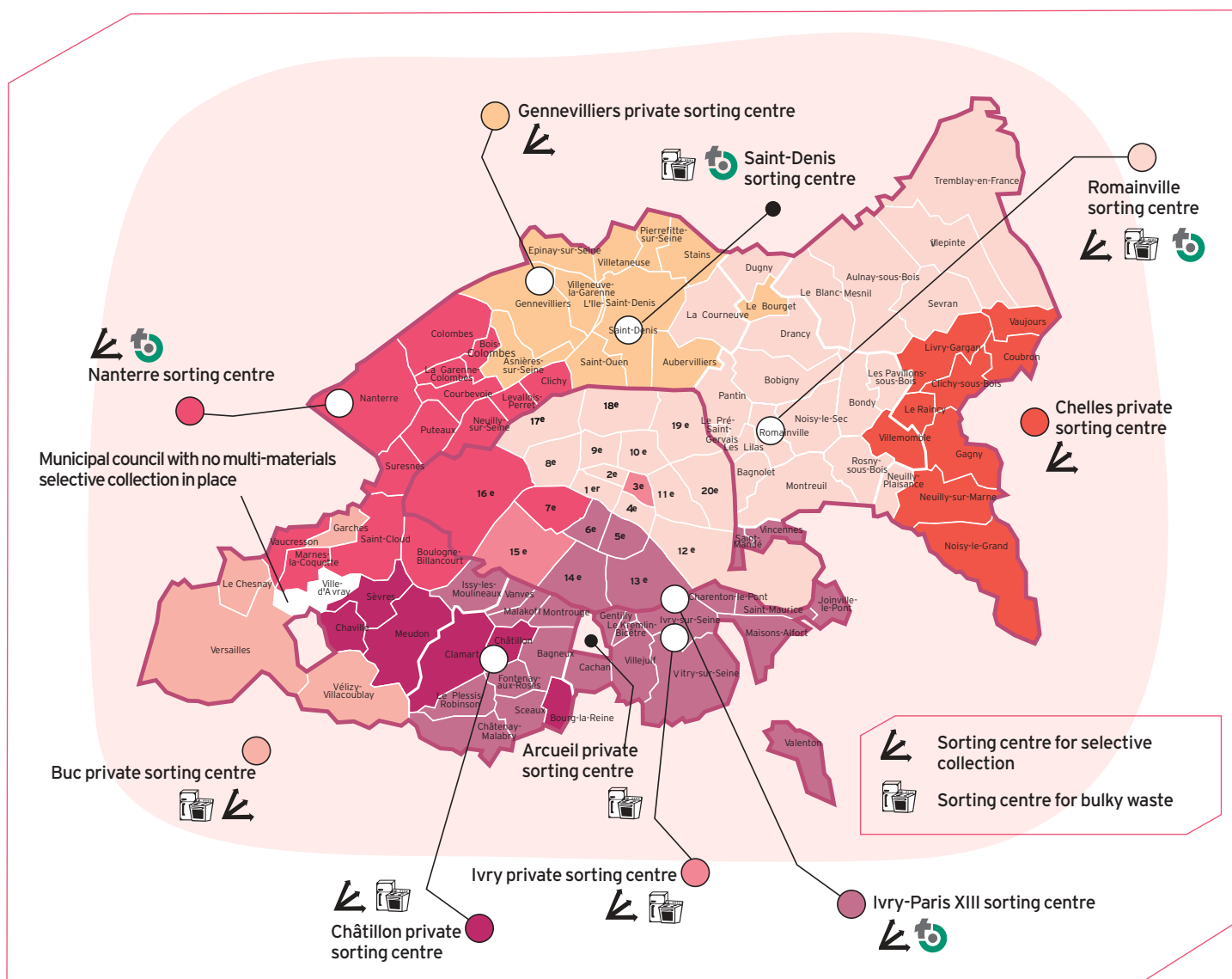
sorting centre, which represented a global investment of 22 million Euros, benefited from subsidies from the Ile-de-France Regional Council, (2.3 million Euros), the Hauts-de-Seine Department Council (460 000 Euros), ADEME (316 000 Euros) and the Ile-de-France regional health assurance department (*Caisse régionale d'assurance maladie*) (30 000 Euros). Nevertheless, in the face of the growth in selective collection, SYCTOM must have recourse to making public contracts with six private-sector sorting or transfer centres, at Arcueil, Buc, Chelles, Gennevilliers, Ivry-sur-Seine and Châtillon.

The main materials recovery agencies

| Waste type | Agencies designated by Eco-Emballages | Recycling companies |
|--|--|---|
| Papers (cereals packets washing powder, etc.) | REVIPAC | Papeteries de la Seine, Nanterre (92) |
| Food liquids alimentaires (ELA) (milk, fruit juice, soups cartons, etc.) | REVIPAC | Papeteries Dalle Hygiène Production, Nord (59) |
| Plastics (PVC, PET, PEHD) | VALORPLAST | <ul style="list-style-type: none"> • 75% treated in France (Verdun, Châteauneuf...) • 23% processed en Europe (Antwerp, Ireland) • 2% processed en Inde USINOR, Dunkirk (59) |
| Steel (food and drink cans) | ARCELOR Packaging International (API) | |
| Aluminium (food and drink cans) | France Aluminium Recyclage (FAR) | AFFIMET, Compiègne Oise department (60) |
| Glass (bottles and jars) | Chambre syndicale des verreries mécaniques de France (CSVMF) | SAMIN, Rosay-Saint-Albin (51) |
| Newspapers/magazines | UPM | CHAPELLE DARBLAY, à Grand-Couronne (76) |
| Bulky shop items | excluded Eco-Emballages contract | The operator of each sorting centre negotiates commercialization directly |



The sorting centres for selective collections and bulky waste mobilized by SYCTOM

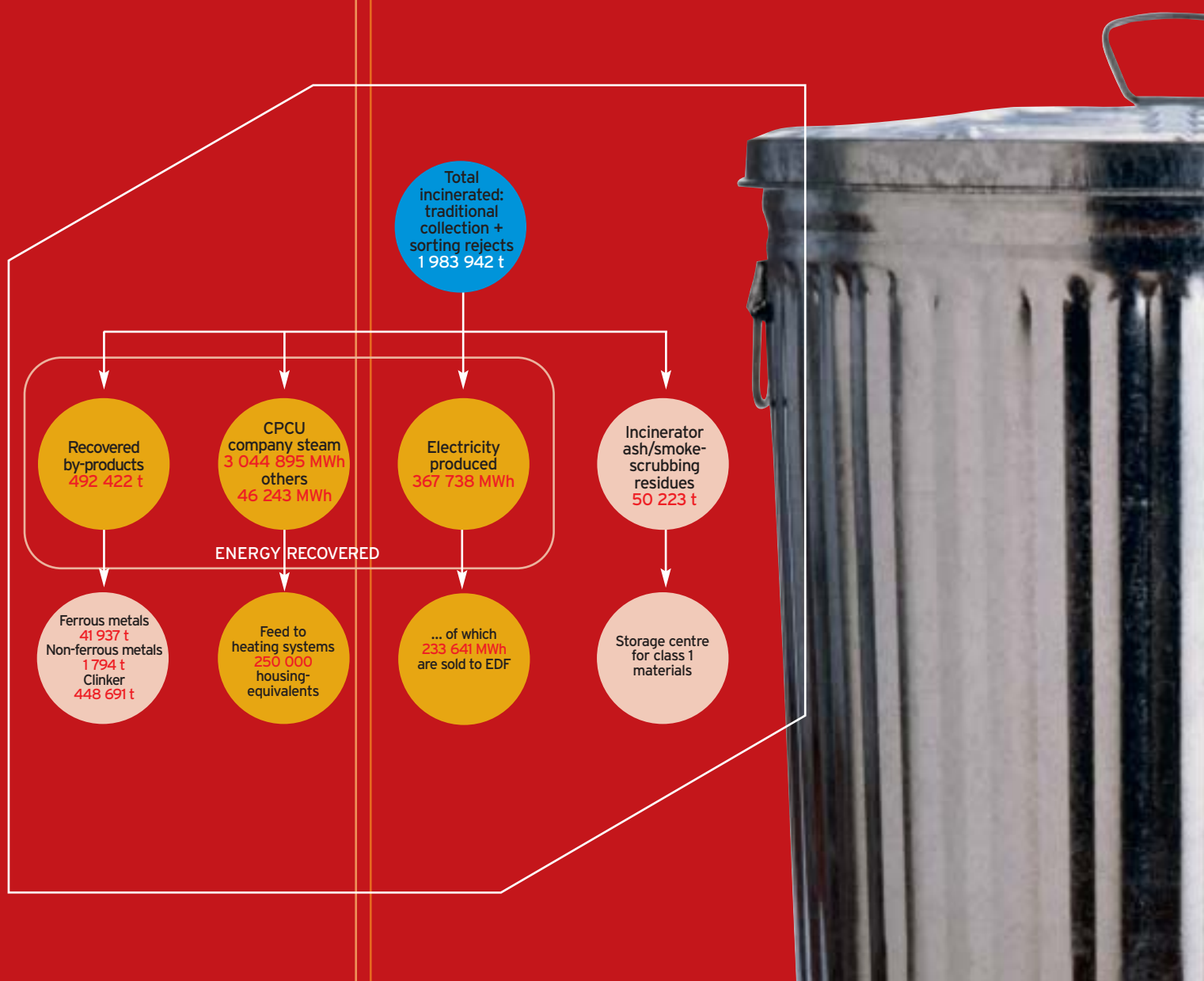


| Centres | Population served | Tonnage received | | | Tonnage recovered | | | Operators |
|-----------------|-------------------|----------------------|----------------|-------------------------|----------------------|---------------|-------------------------|------------------|
| | | Selective collection | bulky waste | waste processing centre | Selective collection | bulky waste | waste processing centre | |
| Arcueil | 1 023 089 inhab. | | 30 371 | | | 3 341 | | SITA |
| Buc | 156 814 inhab. | 7 928 | 11 349 | | 5 652 | 1 245 | | Nicollin |
| Chelles | 244 864 inhab. | 7 885 | | | 5 884 | | | Généris |
| Gennevilliers | 467 903 inhab. | 19 639 | | | 13 853 | | | SITA |
| Châtillon | 441 288 inhab. | 11 230 | 13 695 | | 8 055 | 3 357 | | Généris |
| Ivry-Paris XIII | 944 734 inhab. | 34 553 | | 11 554 | 26 206 | | 8 780 | TIRVED |
| Ivry | 171 533 inhab. | 7 561 | | | 3 447 | | | Valor Industries |
| Nanterre* | 890 195 inhab. | 8 682 | | | 6 784 | | | Généris |
| Romainville | 2 028 642 inhab. | 42 391 | 74 332 | 37 349 | 24 738 | 25 126 | 16 807 | Généris |
| Saint-Denis | 1 431 481 inhab. | | 60 588 | 9 596 | | 9 019 | 1 432 | Généris |
| Total | | 139 869 | 190 335 | 58 499 | 94 621 | 42 088 | 27 019 | |

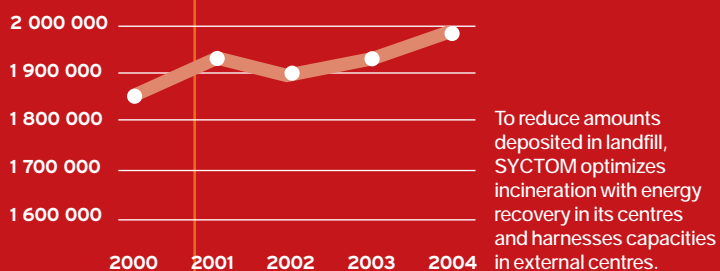
* Brought into service in July 2004

Energy recovery

Waste is packed with energy !



Trends in tonnages incinerated with energy recovery (EfW) by SYCTOM (all centres together)



The predominant household waste processing method

Energy recovery is achieved by means of burning non-recyclable household waste. The method uses their calorific power to produce energy, which is used in the form of electricity or steam to feed urban heating systems. Incineration also generates usable by-products: scrap metals, aluminium

and clinker (solid residues from incineration). Final residues of incineration, concentrated in ash and REFIOM (scrubbing of smoke from household waste incineration), are for the moment sent to Class 1 landfill sites especially designed to store this type of waste.

A favourable energy balance

In 2004, SYCTOM's three incineration centres with EfW systems (Issy-les-Moulineaux, Saint-Ouen and Ivry-Paris XIII) and the six private-sector centres processed 1 983 942 tonnes waste, from traditional collection (brought in directly or by transfer), waste sorting rejects, ordinary industrial waste, green waste and sweepings (waste coming from street cleansing).

The by-products generated in the year by this treatment are as follows:

- 41 937 tonnes of ferrous metals;
- 1 794 tonnes of non-ferrous metals (aluminium);
- 448 691 tonnes of clinker, from which a further 28 671 tonnes of ferrous metals are extracted. These clinkers are submitted to strict regulations. They can be revised as valuable raw materials for public works. Ferrous metals and aluminium are

recycled by metallurgical firms:

- 3 044 895 MWh of steam, sold to the CPCU (*Compagnie parisienne de chauffage urbain*), the Paris urban heating company, who have a licence to heat 210 000 housing-unit equivalents, bringing a saving of 312 000 TEO (tonnes equivalent of oil) and at the same time, a lower production of greenhouse gases;
- 46 243 MWh of steam, sold by the private incineration centres;
- 233 641 MWh of electricity, sold to the EDF.

Environmental balance: constantly improving

Energy recovery has for a long time been dominant in the Paris conurbation as the most appropriate processing method in this high-density urban area. Moreover, even if the maximum proportion of recyclable materials could successfully be extracted from household waste, the quantity of residual waste would still reach two million tonnes each year. The overall environmental balance from energy recovery remains the best today for processing the greater part of all



Clinker from the multi-process site at Ivry-Paris XIII is being used in construction of the track for the Paris tramway.

the standard collection of the Paris urban area and for complying with the objectives of the Royal Act which authorizes landfill deposit only for residual, non-processable, waste. In addition, reinforcement of European and national standards governing incineration guarantees a form of processing of household waste that

The centre at Issy-les-Moulineaux is the oldest of SYCTOM's EfW plants. It is to be taken out of service by the end of 2005, to be replaced by the multi-process centre Isseane.





respects the environment even more, in reducing drastically pollutant emissions. Furthermore, SYCTOM of the Paris urban area favours alternative transport rather than road transport to remove by-products (see Part 5) and continue to develop materials and organic waste recovery.



A more efficient smoke-scrubbing system

Measures have been taken to meet the requirements of the European Directive of 4 December 2000 on waste incineration, which comes into force on 28 December 2005. SYCTOM launched an extensive programme already in 2000 for improvement of the smoke scrubbing system at the Saint Ouen centre and, in 2001, for the Ivry-Paris XIII site. These works to bring systems up to the new standards represent an investment of 28 million Euros (exclusive of tax) in 2004 for a global budget of 74 millions Euros (exclusive of tax).

These new systems are planned to be in service in mid 2005 at Saint-Ouen and by the end of 2005 at Ivry-Paris XIII. They will have the capacity to treat smoke to a standard better than the statutory obligation: emissions of nitrogen oxides will be reduced to below the new threshold (70 ng/m³ instead of 200), the dioxins will be cut by 90% and the emissions of sulfur oxides reduced by 65%. Environmental quality charters have been signed, in order to guarantee now and in the future the operational conditions for these centres. The parties involved are the municipalities, SYCTOM of the Paris urban area and the companies operating the sites, the company TIRU SA for this case of the energy recovery centres. They illustrate the shared determination to respect the commitments made to minimize nuisances, environmental protection and improvement of our environment. This tool, which brings the municipal councils, SYCTOM and its operators into a perspective of sustainable development, defined also the necessary partnership between SYCTOM, its operators and the municipal councils hosting these classified facilities.



EfW and materials recovery in 2004 in the SYCTOM facilities and private-sector centres

| | quantity |
|--|---------------|
| Steam sold | 3 091 138 MWh |
| Electricity sold | 233 641 MWh |
| Slag/clinker | 448 691 t |
| Ferrous metals sold | 41 937 t |
| Non-ferrous metals sold | 1 794 t |
| REFIOM (HWI household waste incineration and smoke scrubbing residues) | 50 223 t |



Three SYCTOM centres and six private-sector centres

SYCTOM possesses three incineration plants with EfW facilities, the running of which is conferred to a private operator:

- **The Issy-les-Moulineaux centre**, established in 1965, is SYCTOM's oldest energy recovery plant. It was also the first in France to have been equipped with a system for large-scale recovery of energy. Its activity will cease from 28 December 2005. The new multi-process centre Isseane, currently under construction, will replace the old unit;
- **The Ivry-Paris XIII centre** was constructed in 1969 and renovated in 1997. It was the Paris conurbation's first multi-process centre (with a sorting centre, household waste processing centre and EfW plant on the one site). It receives unsorted domestic waste from traditional collections from a catchment of 1.4 million residents, waste from transfer stations and sorting rejects. It is the largest energy recovery plant in France, with an annual capacity of 730 000 tonnes. It is capable of processing up to 100 tonnes of waste per hour for energy recovery. Since 1995, almost all the centre's clinker production, amounting to 164 000 tonnes per year, is conveyed by waterway towards the processing centre at Lagny-sur-Marne. This keeps an annual equivalent of 7 500 heavy haulage trucks of the roads of the Île-de-France region. An examination has been initiated in close consultation with Ivry-sur-Seine municipal council of the future of this installation and several prospective studies have been launched;



By 2009, SYCTOM plans to have switched from road haulage to waterway transport for dispatching 50% of the materials that emerge from the centres.

- **The Saint-Ouen centre**, constructed between 1984 and 1990, has a processing capacity of 630 000 tonnes per year. In 2001 a multimodal platform for clinker transfer was added: a 12-wagon rail convoy, with a 720 tonnes carrying capacity, leaves the de Saint-Ouen site daily for the clinker maturing plant at Saint-Ouen-l'Aumône (Val-d'Oise). This saves about 60 return trips by heavy haulage trucks per day. In order to complement its EfW capacity

and reduce the need to send waste for landfill in the outer zones of the Paris region, SYCTOM has since 2002 been calling on the services of six private-sector centres, located at Massy, Saint-Thibault-des-Vignes, Rungis, Monthyon, Saint-Ouen-l'Aumône and Argenteuil. In 2004, these centres received 99 249 tonnes of household waste coming from SYCTOM's member municipal councils.

Air pollution control - figures for campaigns run in 2004

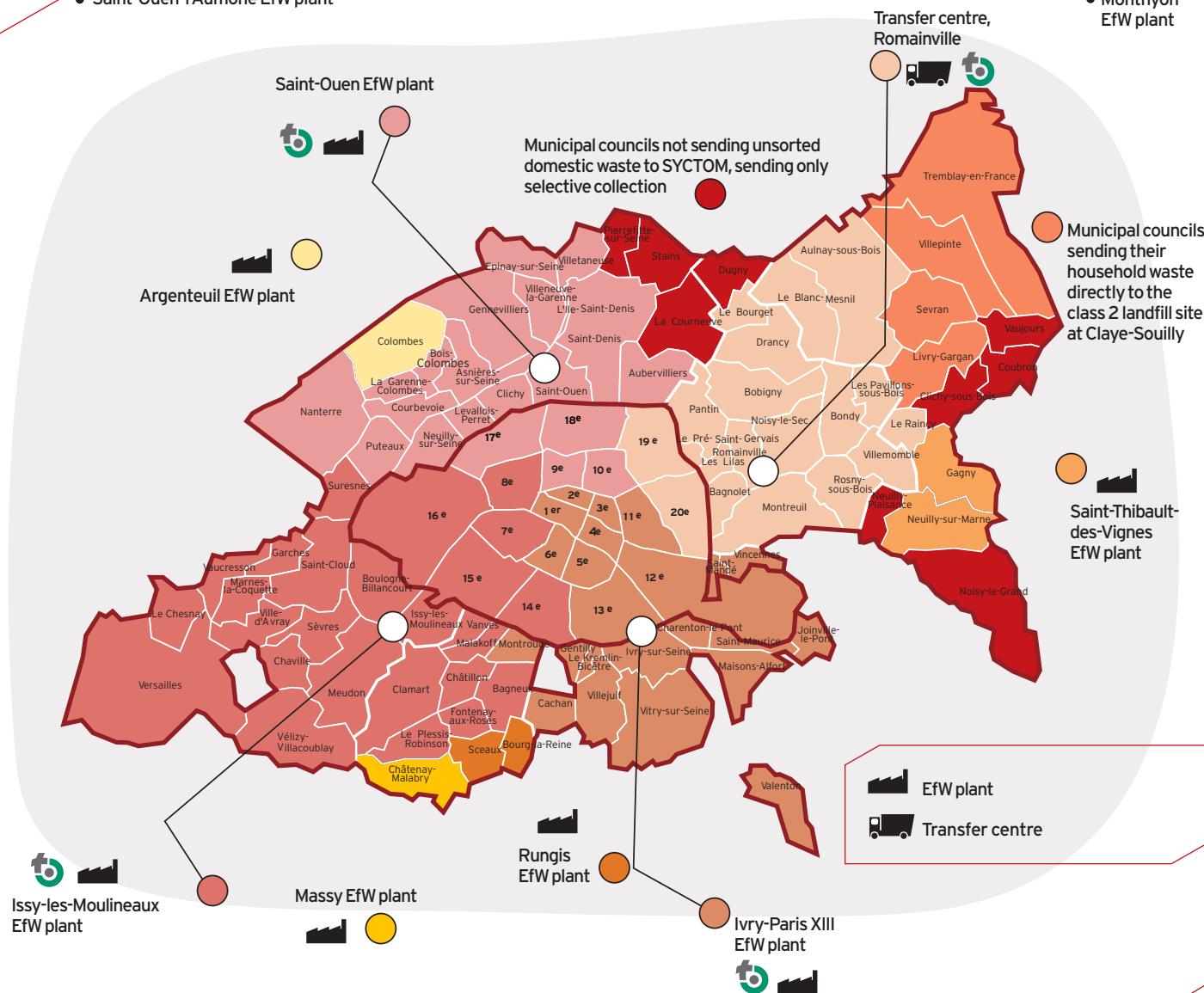
| Nature of emission | Ministerial order of January 1991 * | | Ivry-Paris XIII | | | | Saint-Ouen | | | | Issy-les-Moulineaux | | | |
|--------------------------------------|-------------------------------------|---------------|-----------------|-------|-------|-------|------------|-------|-------|-------|---------------------|-------|-------|-------|
| | Weekly average | Daily average | | | | | | | | | | | | |
| Dust | 30 | 39 | 19.4 | 2.7 | 22.0 | 27.0 | 17.5 | 12.0 | 9.7 | 3.3 | 23.5 | 22.6 | 10.3 | 8.4 |
| Hydrochloric acid | 50 | 65 | 0.24 | 0.45 | 4.95 | 4.75 | 2.12 | 1.88 | 9.10 | 6.07 | 0.48 | 0.40 | 3.73 | 2.28 |
| Hydrofluoric acid | 2 | | 0.34 | 0.65 | 0.05 | 0.23 | 0.30 | 0.30 | 0.37 | 0.21 | 0.63 | 2.10 | 0.11 | 0.05 |
| Sulfur dioxide | 300 | | 33.5 | 1.6 | 35.6 | 76.0 | 83.8 | 45.1 | 54.0 | 68.0 | 44.3 | 41.1 | 41.1 | 22.7 |
| Heavy metals | | | | | | | | | | | | | | |
| Lead + chromium + copper + manganèse | 5 | | 0.9 | 0.3 | 0.5 | 0.5 | 0.2 | 0.2 | 0.1 | 0.1 | 0.3 | 0.4 | 0.2 | 0.1 |
| Nickel + arsenic | 1 | | 0.013 | 0.010 | 0.000 | 0.000 | 0.043 | 0.020 | 0.002 | 0.002 | 0.044 | 0.011 | 0.001 | 0.001 |
| Cadmium + mercury | 0.2 | | 0.057 | 0.021 | 0.048 | 0.037 | 0.023 | 0.024 | 0.033 | 0.019 | 0.084 | 0.037 | 0.084 | 0.021 |
| Dioxins** | 10 | | 2.10 | | | | 2.21 | | | | 2.85 | | | |

* Limit values fixed by the Order of 25/01/1991, in milligrams per cubic metre (mg/Nm³)

** Limit value fixed by the minister, in nanograms per cubic metre (ng/Nm³)

- Saint-Ouen-l'Aumône EfW plant

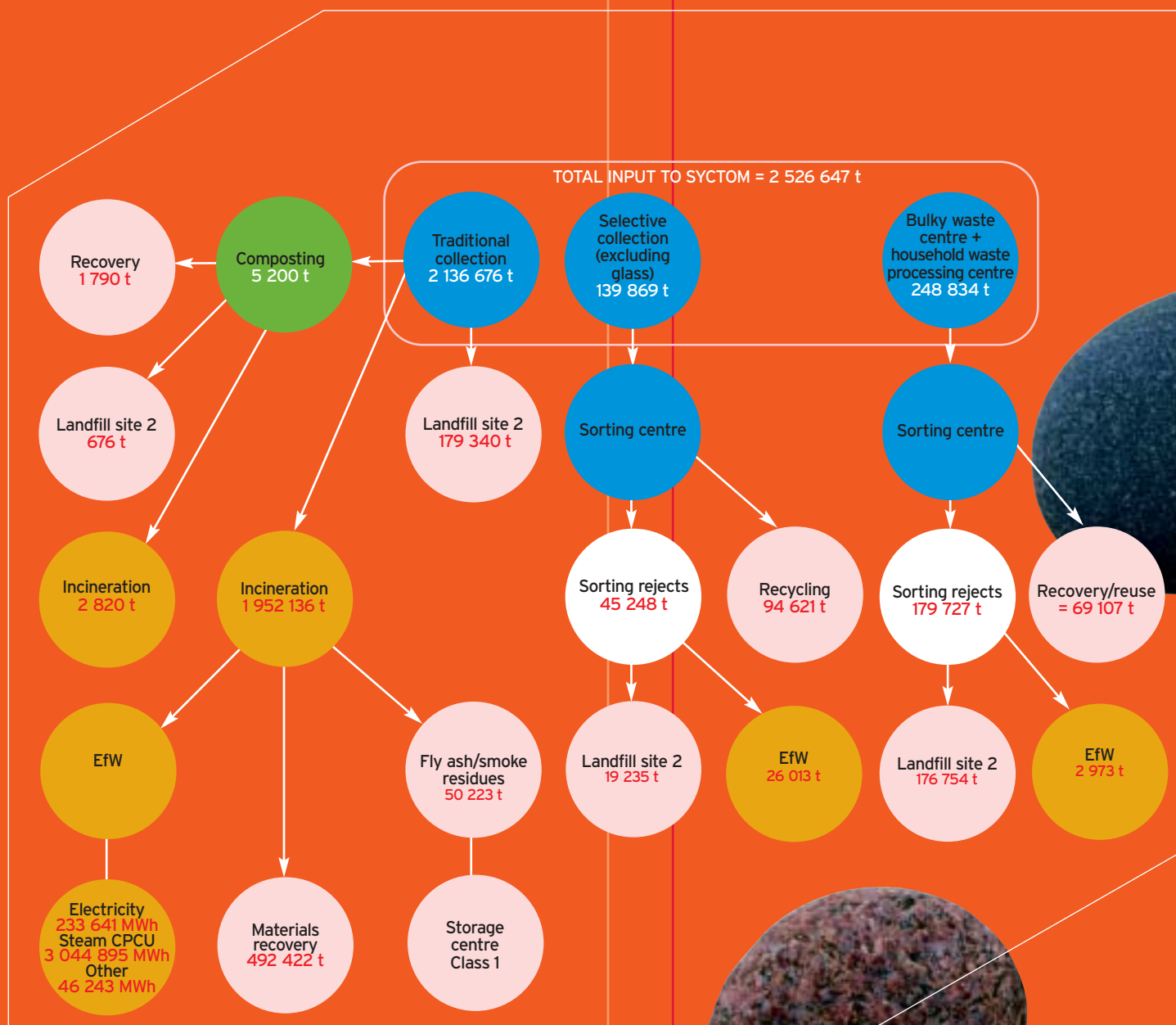
- Monthyon
EfW plant



| Centres | Population served | Tonnage received | Recovery | | | | Operators |
|---------------------------|-----------------------------|------------------|------------------|------------------------|-------------|-------------------------|-----------|
| | | household waste | steam (MWh) sold | electricity (MWh) sold | clinker (t) | ferrous metals (t) sold | |
| Argenteuil | 77 184 inhab. | 35 552 | 15 045 | 5 818 | 9 515 | 705 | Novergie |
| Issy-les-Moulineaux | 1 280 784 inhab. | 538 477 | 752 839 | 75 028 | 121 631 | 12 112 | TIRU |
| Ivry-Paris XIII | 1 128 194 inhab. | 699 250 | 978 787 | 124 857 | 158 079 | 15 206 | TIRU |
| Massy | 30 919 inhab. | 8 622 | 12 037 | | 2 164 | 161 | Curma |
| Monthyon | Romainville transfer centre | 3 531 | | 949 | 970 | 53 | Généris |
| Romainville | 1 001 701 inhab. | | | | | | Généris |
| Rungis | 38 347 inhab. | 10 549 | 12 000 | | 1 928 | 111 | SIEVD |
| Saint-Ouen | 1 376 098 inhab. | 639 869 | 1 313 269 | 24 610 | 145 573 | 12 914 | TIRU |
| Saint-Ouen l'Aumône | Romainville transfer centre | 10 908 | 7 112 | 1 785 | 2 693 | 171 | Généris |
| Saint-Thibault-des-Vignes | 69 751 inhab. | 29 071 | 49 | 594 | 6 138 | 503 | Novergie |
| Total | | 1 975 829 | 3 091 138 | 233 641 | 448 691 | 41 937 | |

Landfill

Only for residual, non-processable waste



Landfill sites with ISO 14001 certification

The landfill sites SYCTOM uses receive the household waste from 4 million residents and some waste from industrial companies. They are equipped so as to stop all nuisances associated with fluids and gases emanating from the waste. They are certified to ISO 14001, the standard which concerns environmental quality and is the guarantee that a special series of measures are applied: compliance with statutory obligations, permanent monitoring to ensure that environmental regulations are being

applied on the sites, the identification and overcoming of technological risks and danger from accidental pollution that landfill activities could generate in order to minimize the environmental impact, continuing definition and adjustment of objectives for improvement of the management of combustion incidents and emissions and compliance with these objectives with the aid of indicators, that all personnel are fully informed and trained with regard to the environmental impacts linked to their activity.



The last-resort treatment solution 49% less household waste sent for landfill since 2001

Landfill, more commonly known as tipping or storage, is used for residual waste from waste processing centres, bulky objects unsuitable for recovery, sorting rejects and waste resulting from collections that SYCTOM cannot treat in its EfW centres.

Residual waste: a shifting and variable definition

Since 1 July 2002, landfill is used only for so-called "ultimate" waste, from which the recoverable, reusable fractions have been extracted or which cannot yield

reusable materials within acceptable bounds of technical or economic feasibility. This definition is deliberately kept an open one. On the ground it can differ considerably, as it depends much on local situations.

Thus, in an area where there is no EfW plant, the definition of residual waste must therefore be specified in each departmental waste management plan, even though it might vary within the same department.

The target date of July 2002 could in any case not be fulfilled over the whole of France. SYCTOM, in order to meet its statutory obligations, has implemented short-term and transitory solutions that can by 2007 significantly reduce the proportion of "non-residual" household waste sent to storage sites. The fall confirmed in 2004 stems from the efficiency of SYCTOM's incineration centres which have EfW facilities and from the conclusion of treatment contracts with externally-operated incineration units.

Three types of landfill site

- The landfill sites for Class 1 waste take only hazardous waste such as industrial waste or, in the case of SYCTOM, the REFIOM (scrubbing residues from smoke produced by household waste incineration) and sludges resulting from decontamination of water used to clean the smoke. These wastes are rendered inert and solidified before being stored in watertight compartments accurately recorded and mapped to ensure their traceability, in compliance with the statutory requirements. SYCTOM is conducting studies on the vitrification of fly ash, with a view to reducing the recourse to burial in Class 1 landfill sites.
- The Class 2 landfill centres receive waste considered as non-hazardous. They are nevertheless facilities that are controlled, whose operation is governed by draconian regulatory instructions concerning the recovery of biogas, rain water drainage, recovery and treatment of leachates, subsoil impermeability and groundwater quality monitoring.
- The Class 3 landfill centres take exclusively inert waste, such as rubble.

Sites outside the SYCTOM system

SYCTOM can only have available this type of facility for this treatment on the perimeter of its zone of operation, for evident reasons of urban density. It therefore has recourse to sites located outside its zone of authority, chosen by tender according to the quality of the services offered, the prices practised and whether the installations meet statutory environmental standards. Thus the security and efficiency of storage have been

improved continually: a bulk-breaking quay allows video monitoring of all waste received. The waste is confined in water-tight cells to protect the water-table, the liquid effluent is collected and processed, the biogas emanating from the decomposition of wastes is recovered and prepared for use; and the filled blocks are rehabilitated by putting them back into cultivation or reforestation. All the sites SYCTOM uses are certified ISO 14001 (see box):

- The Class 1 landfill site at Villeparisis (Seine-et-Marne) opened in 1995 and is operated by the company France Déchets. It is one of two storage centres for hazardous waste in the Ile-de-France region. In 2004, it received 47 607 tonnes of residual waste coming from SYCTOM, in the form of ash and sludge. A total of 50 223 residual waste were buried at this landfill site;
- The Class 2 landfill sites at Claye-Souilly (Seine-et-Marne) and Bouqueval (Val d'Oise), which are operated by the company SARM-REP. The Claye-Souilly centre has a capacity of 5 500 tonnes/day, amounting annually to 15 million m³. It received 311 000 tonnes of waste from SYCTOM; The Bouqueval centre, with a capacity of 3 600 tonnes/day, making 13 million m³ per year, used exceptionally in emergency, received 297 tonnes. Sorting rejects from private bulky-waste and selective collection sorting centres;
- The landfill site for Class 3 at Claye-Souilly, run by SARM-REP. This centre took 38 143 tonnes of inert waste, including 22 203 tonnes of rubble transited from the Romainville centre.



The France Déchets landfill at Villeparisis.

Burial in salt mines: an alternative discarded by SYCTOM

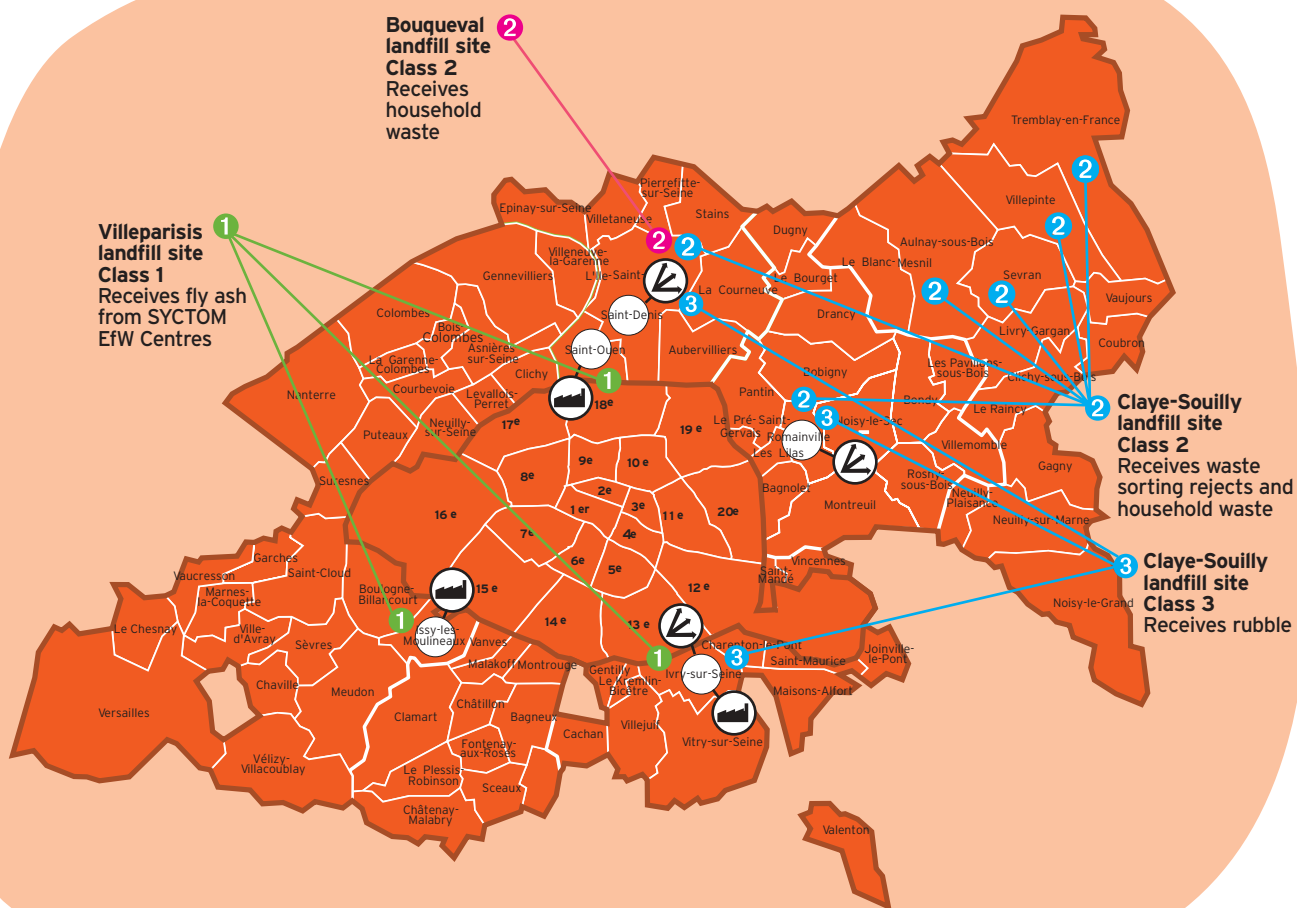
Salt mines would be an alternative solution to Class 1 landfill sites for storing sludges and incinerator fly ash produced by the household waste incineration plants.

This option, adopted by Germany, is in fact recognized by European legal authorities as a method for disposal of waste, in the same way as the landfill centres (European Communities Court of justice Order of 27/02/02), provided that the statutory requirements for conditioning and monitoring of the waste are met. In spite of the growth of the German sites in the European market for Hazardous Industrial Waste (HIW) treatment and incinerator fly ash, SYCTOM continues to favour storage of special waste in the Class 1 landfill centres located in French territory. This position is corroborated by the French authorities and specialist experts. It is motivated by two statutory obligations in force in France, which were decreed in the modified 1975 law and incorporated into the environmental code: the principle of proximity comes before that of recovery in order to limit the distance and the volume of waste transported; the party that holds the waste must prove that the operator who receives the waste has the capacity to ensure elimination in conditions which do not create hazard for human health or the environment. In the absence of an objective specialist study of the technical and environmental performances of salt mines and for the sake of precaution, SYCTOM maintains its decision to have fly ash stored in Class 1 landfill sites.



At Claye-Souilly, SARM-REP operates a Class 2 landfill site, on behalf of SYCTOM, as well as a Class 3 landfill site, both certified ISO 14001.

The landfill centres mobilized by SYCTOM



Tonnages sent to landfill centres under Syctom contracts

| Landfill site | Class | Waste sent from | Operators |
|-----------------|---------|---------------------|-----------|
| Villeparisis ① | Class 1 | Issy-les-Moulineaux | 12 433 |
| | | Ivry-Paris XIII | 15 852 |
| | | Saint-Ouen | 19 322 |
| Bouqueval ② | Class 2 | Saint-Denis | 297 |
| Claye-Souilly ② | Class 2 | 4 communes | 63 981 |
| | | Romainville | 187 189 |
| | | Saint-Denis | 59 841 |
| Claye-Souilly ③ | Class 3 | Romainville | 22 203 |
| | | Ivry | 7 676 |
| | | Saint-Denis | 8 264 |

Sustainable development

Reduce all sources of pollution and nuisance





Environmental quality charters: an eight-point commitment

These charters are signed between SYCTOM, the operators and the municipal councils and stipulate eight principles: reduction of visual and olfactory nuisance and noise; protection of the environment; management of natural risks; traffic organization; optimization of household waste management; public consultation; systematic provision of information; permanent technological surveillance. Four charters have been signed to date (Issy-les-Moulineaux, Nanterre, Saint-Ouen, Ivry).

A priority: the control of environmental impacts

SYCTOM is committed to favouring sustainable development. The Syndicate's objectives for this policy are: expansion of sorting and materials recovery capacities, development of process mechanization, alternative transport methods, environmental protection and public health, minimizing use of natural resources, waste prevention, public information.

A principle: high environmental quality for each new project

The concept of high environmental quality (HEQ) is an integral part of the Syndicate's sustainable development policy. It is applied to all SYCTOM's new constructions and set out formally in a charter signed with the host municipal council :

- a "reasoned" choice of construction processes and products (sound insulation, aesthetic quality of buildings, integration in the landscape, use of recyclable materials etc.);
- "rational" use of energy (installation of a computerized technical management system for the buildings, installation of solar panels -as at the Nanterre sorting centre where they ensure half of the centre's needs in hot water for personnel facilities- also photovoltaic cells) and water (consumption control, rain water capture for open-space maintenance in future sorting centres at Sevrans and Paris XV, and watering by drawing on the groundwater at Issy-les-Moulineaux);
- information provision for neighbouring residents, using a participatory approach, during construction works and throughout the operational period (visitors' information

room), educational trail for school children;

- improvement of working conditions (ergonomic studies of work stations, improvement of visual comfort by using natural light, noise reduction and dust control by installing better ventilation systems in the sorting workshops);
- and a social integration scheme with related organizations to provide jobs as part of solidarity measures (see box concerning Nanterre).

Development of alternative transport to reduce road haulage

The objective is to reduce air pollution and nuisance caused by road traffic (noise, congestion and so on). For the Issy-les-Moulineaux centre the scheme means a saving of 11 000 truck journeys each year and 50 000 during construction. Moreover, 380 000 tonnes, amounting to 45% of materials emanating from SYCTOM's waste processing installations, are now transported by waterway or rail freight services to recycling and recovery centres. Added to this are 1 000 000 tonnes of earth from the Issy-les-Moulineaux multiprocess centre, also dispatched by barge. Such systems save 18 600 truck journeys per year for removal from the

centres and 56 000 truck trips during the construction works. Looking to 2009, SYCTOM's objective is to bring the proportion of waste materials transit from processing centres by alternative transport to 65%.

- Since 1995 clinker produced by the EfW plant at Ivry-Paris XIII, amounting to 164 000 tonnes per year, are dispatched by waterway to the Lagny-sur-Marne processing centre. This arrangement keeps 7 600 truck movements off the roads each year.
- Newspapers and magazines emerging from selective collection sorting centres at Nanterre and Gennevilliers, making up 20 000 tonnes per year, have since January 2005 been taken away by river to a paper mill at Grand-Couronne, near Rouen. This represents traffic equivalent to 1 000 trucks per year.
- At the Saint-Denis sorting centre, a new system for bulky waste, starting in January 2005, involves preliminary sorting, then removal by barge of 70% of the bulky items, totalling 43 000 tonnes annually, to a more specialized bulky waste sorting centre at

Bonneuil-sur-Marne. This system takes 2 600 heavy haulage trucks off the road per year.

- Waterways transport is already being used during construction work for the future Isseane centre and will be an integral part of operations when the facility is in service (see box).
- Since October 2001, transfer of clinker from the Saint-Ouen plant to the clinker maturation centre at Saint-Ouen-l'Aumône (Val-d'Oise) has been effected by rail freight services, meaning a saving of 7 600 trucks per year.
- Finally, a more extensive transport project for paper between the Île-de-France and Grand-Couronne is being studied, jointly by ten partner organizations, including SYCTOM. The plan is for transporting by river an annual 75 000 tonnes of newspapers and magazines from the Paris urban area (including 50 000 tonnes per year from SYCTOM) and returning 75 000 tonnes of recycled-paper reels for printing daily newspapers.

Comprehensive prevention of pollution and nuisances

• Smoke scrubbing: air quality protection

SYCTOM's EfW plants are equipped to treat the smoke released when household waste is burnt, in compliance with national and European regulations.

In anticipation of the coming into force of the European Directive of 4 December 2000, transposed into French law by government order of 20 September 2002 and applicable from 28 December 2005, new measures will reinforce the smoke treatment systems in Saint-Ouen and Ivry-Paris XIII EfW plants. Scrubbing lines will be equipped during 2005 with catalytic reactors active both on dioxins and nitrogen oxides and at the same time reducing further the levels of other emissions. At the future Isseane facility, advanced technological systems will achieve an optimal degree of cleaning of smoke produced.

In addition, a smoke reheating system will eliminate the white plume that results from steam emission. Such a smoke scrubbing

27% of material from processing plants are now transported by waterway to recycling and recovery centres.



system guarantees atmospheric emissions 50% less than thresholds stipulated by European regulations.

• Using water with care

> Treatment of used water

Residual water and water coming from smoke scrubbing is treated at integrated treatment works, before being released into the Seine. The future Isseane multiprocess centre will not, however, reject any used water into the Seine. After usage, the city water for domestic users will be released directly into the department's sewerage system, whereas industrial used water, supplied from the Seine, will first pass through the effluent treatment station within the centre itself before being released into the general drainage network.

As for the water drawn from the Seine in order to cool the turbo-alternator, it will be sent back to the river at the statutory temperature. Finally, the liquid effluents will be controlled by the operator, as well as by SYCTOM and the public authorities.



Nanterre sorting centre: priority to social integration and local employment

At the Nanterre sorting centre, which employs 80 people, the operator company, Generis, has worked along with the local branch of the national employment agency ANPE, with Milona (local mission for the recruitment of persons needing employment insertion in Nanterre) and the local plan for economic insertion in order to recruit most of the employees. The result: since July 2004, 21 out of the 30 persons who benefited from insertion procedures, now have a firm open-ended contract. In parallel, the priority has been given to local recruitment: to date, nearly 60% of the personnel recruited on a firm open-ended contract live in Nanterre or neighbouring districts.



Isseane: alternative transport at work

The use of alternative transport for the construction works of the future Isseane centre began in 2004. Over ten months up to May 2005, 1 million tonnes of soil resulting from earthworks will be taken away by barge, avoiding traffic from 50 000 trucks. The same will be true for conveying waste-treatment equipment that will be installed in the centre. Once the EfW plant will be open, in 2007, an annual 120 000 tonnes of clinker will be transported by waterway, thus avoiding the use of 6 000 trucks.



• Radioactivity detection

In 2004 SYCTOM of the Paris urban area installed radioactivity detection gantries at the entrance of all its centres. This is a pollution and risk prevention measures, in compliance with the ministerial order of 20 September 2002 which fixed the deadline date for 28 December 2005.

In parallel, management procedures and information provision in case the detectors were triggered were devised with the centre operators and communicated to all the municipal councils. SYCTOM has arranged that if the radioactivity alarm goes off, a specialist company intervenes to isolate and treat the source.

In 2004, the Syndicate counted an average of one warning incident per week in the incineration plants and the Romainville transfer station. These were linked to the presence of radioactive fractions in the waste stemming from medical treatment (in dressings, handkerchiefs, nappies and so on).

• Noise abatement

Measures are always taken to reduce noise involving the isolation of noisy equipment and covering over unloading bays. The future Isseane processing centre will be constructed 30 metres down into the ground and will have an optimal anti-noise protection. All noise-generating equipment will be confined to the subsurface parts of the building. The wall of this building will indeed be constructed using absorbent insulating materials. The vehicle access ramp will also be covered over.

• Odour nuisance prevention

In all SYCTOM's installations, the waste handling and treatment operations are carried out in enclosed spaces, which thus limits the spread of odours.

In incinerator plants with EfW equipment, air in the household waste reception pit is conveyed



Studies show that tap water in the Ile-de-France region is one of the best-protected food products, whose consumption is strongly recommended as part of efforts for waste prevention.

to furnaces to feed the combustion of the waste, which leads to odour entrapment. Finally, the installation of innovatory odour-treatment device is planned in the old plant at Issy-les-Moulineaux, during the transition period in which it will be converted into a household waste transfer centre until Isseane comes into service.

A plan for preventing and reducing the quantities of waste to be treated

Between 1993 and 2003 the tonnages of waste per resident to be treated by SYCTOM of the Paris urban area have increased by more than 20%, going from 403 to 486 kg/year. SYCTOM aims to combat this constant growth. In order to do so, the Syndicate committed itself in 2004 to a policy of waste prevention. This is laid down formally in an

overall plan of actions, with the support and mobilization of its member municipal councils. This plan, approved unanimously by the Committee on 30 June 2004, aims to reduce by 300 000 tonnes the quantities of household waste currently processed in the incineration plants or landfill centres. This reduction is planned to be achieved as follows:

- 120 000 tonnes from methanization;
- 65 000 tonnes by progressing to 75% of recovery from selective collection;
- 35 000 tonnes by means of attaining 100% improvement in recovery of bulky waste;
- 15 000 tonnes via a 50% increase in recovery in household waste processing centres;
- 65 000 tonnes thanks to the waste prevention policy.

In order to achieve these objectives, the plan hinges on two main lines: first, improvement



of waste recovery and diversification of the process methods; secondly, change the behaviour of all parties (residents, administrations, companies) regarding the utilization of natural resources and for environmental protection.

Development of household waste processing centres and methanization

In order to improve materials recovery resulting from sorting, SYCTOM has decided, among other things, to raise the performance of its bulky waste sorting centres and the sorting capacities of selective collection with three new centres (Paris XV, Issé and Sevran).

The Syndicate supports the initiatives of its member municipal councils aiming to reinforce the network of neighbourhood waste processing centres in its area of operation. This it does via technical support and a specific subsidy of 15% of the total (excluding tax) of civil engineering work and equipment.

It is furthermore committed to developing systems which orient products at the end of their life away from elimination and which favour their reuse. It wishes, for example, to strengthen partnership with charitable bodies or social integration associations in order to favour reutilization of used clothes and recovery of material from them.

SYCTOM moreover intends to install special collection bins for toxic items in waste processing centres, to separate them from the mass of waste. Such containers will be for small appliance batteries, car batteries and health-care waste. Separation makes it possible for specialist industries to take back the relevant waste items, under contracts made for the purpose.

One element of the policy for diversifying the process methods used is SYCTOM's new commitment to methanization of fermentable and green wastes.

The Syndicate is furthering this by means of two projects for methanization plants in

Seine-Saint-Denis capable of receiving material from specific collections of fermentable wastes. It has thus approved the acquisition of land at Romainville, adjacent to its present sorting and transfer centre, in order to open a methanization plant by the second half of 2009.

Stop the use of plastic carrier bags and cut down unsolicited publicity material

The intention is to reduce waste at source. SYCTOM therefore seeks to change the behaviour of all publics. To incite them to make or use less polluting products, to sort items that can be recovered and not to throw away reusable items.

That is why SYCTOM is encouraging initiatives of member municipal councils that promote reusable shopping bags instead of plastic carrier bags. The latter amount to 8 000 tonnes at the scale of SYCTOM, which provides financial aid at 0.20 Euros per reusable shopping bag. In this scheme it will pay subsidies to municipalities of Gennevilliers, Saint-Mandé and Paris, which plan the free distribution of 217 000 reusable shopping bags to their residents.

For the same purpose, the Syndicate supports the campaign named "Stop pub", in order to reduce the tonnages (120 000 tonnes for Syctom's operational area) of unwanted publicity brochures and leaflets that have to be processed. Stickers with the "Stop-Pub" message are being distributed in member municipalities (1 450 000 have been issued).

On another aspect, the Syndicate is in partnership with the regional water

organization syndicate SEDIF (*Syndicat des eaux d'Île-de-France*), Eau de Paris and SITOM 93 for the promotion of tap water drinking instead of bottled water. Administrative authorities and bodies also have their part to play. SYCTOM's member municipal councils must indeed set a good example, so the Syndicate proposes that they sign charters stipulating objectives for the prevention and recovery of waste from administrations. It urges them also to make a commitment to selective collection in municipal, parks and open spaces for all categories (green waste, textiles, toxic waste, bulky objects, paper from offices). By the same token, SYCTOM wishes to forge partnerships with elements in the economy (companies and trades), and also the transport authority RATP. This would be to persuade them to limit consumption of raw materials (plastic bags, packaging) and to develop collection systems (for free newspapers, cardboard, wooden fruit boxes, DIB, fermentable wastes). Implementation of this plan will help limit the need for new processing capacity, reduce environmental impacts and control growth in treatment costs.

To encourage the use of reusable shopping bags instead of plastic bags, SYCTOM subsidizes initiatives of member municipal councils concerning this issue.

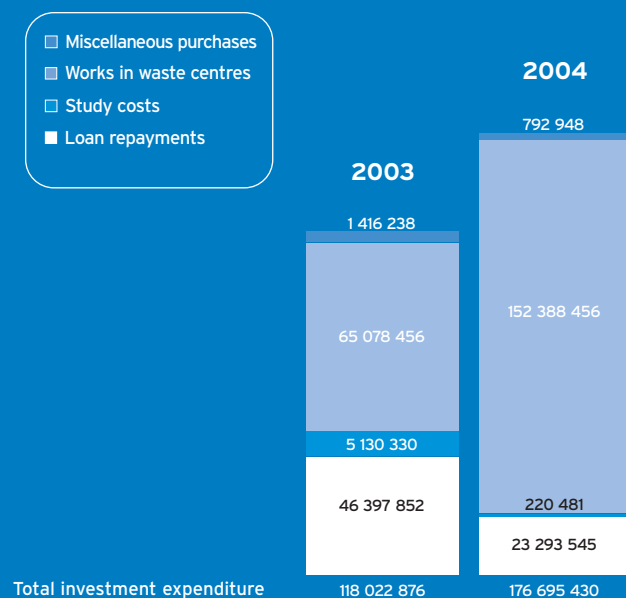


Resources for delivering a public service

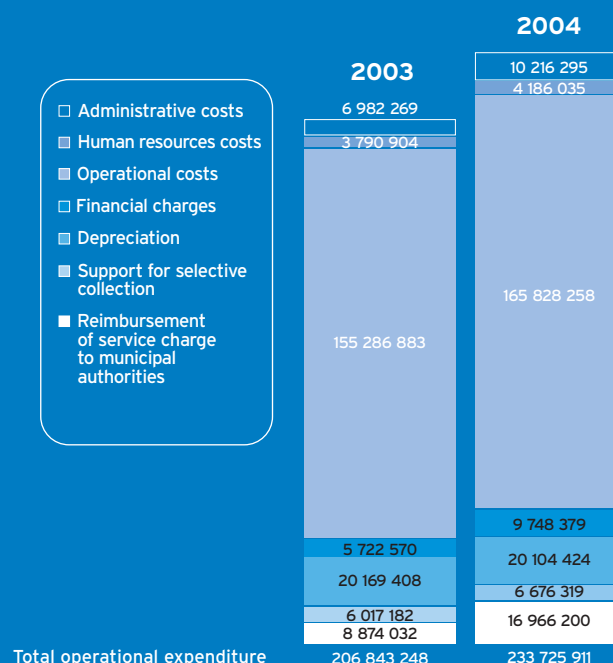
Continual investment, controlled expenditure, SYCTOM has the means to meet the challenge of this century.



Investment expenditure in euros



Operational expenditure in euros



A budget geared to investment

Operational expenditure: a controlled rise

SYCTOM's operational expenditure has risen, owing to the recourse to external centres and the considerable increase in tri-recycling systems, a more costly sector owing to its policy of supporting municipal councils. Expenditure in 2004 amounted to 233.7 million Euros, compared with 206.8 million Euros in the previous year. The largest budget item is the cost of operational contracts for the different waste treatment units, reaching 165.8 million Euros, nearly 71% of the total expenditure of this section. There was

an increase of 6.8% compared with 2003, resulting in particular from a growth in tonnages from selective collection to be processed. Consequently, SYCTOM's financial aid to municipal councils grew by 60%, from 16.3 to 25.8 million Euros. The third largest item represents the technical depreciation practised on the assets, with 20.1 million Euros, constituting a 0.32% fall. Financial costs, mainly interest on loans, represent 9.7 million Euros, a rise of 4.4 million Euros compared with 2003 owing to heavy new investment currently under way. Human resources costs reached 4.1 million Euros.

Projects moving forward with a strong increase in investment

The investment budget rose from 118 million Euros in 2003 to 176.7 million this year. The expenditure associated with works in SYCTOM processing centres make up the greater part of the investment item with 152.4 million Euros, way ahead of loan repayments (23.3 million Euros). The Isseane construction works needed an investment of 110.3 million Euros over the year. Then, for the work on the Saint-Ouen centre to bring it up to standard for 28 December 2005, 19.5 million Euros were invested to install additional smoke scrubbing systems,

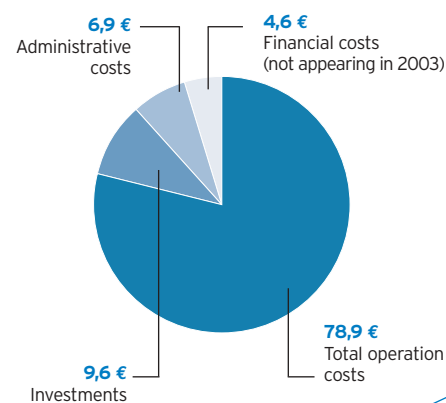
which continues in 2005, and a budget of 300 000 Euros is devoted to fly ash treatment. Similarly, at Ivry-Paris XIII, 14 million Euros were put into equipping the centre with additional smoke-scrubbing devices, the work for which is programmed until 2005. Moreover, 190 000 Euros were devoted to preparing the existing plant at Issy-les-Moulineaux into a waste transfer station. Incineration must cease there

by the end of 2005. The selective collection sorting centre at Nanterre (Hauts-de-Seine department), which opened in 2004, needed 8.1 million Euros, including 4 million just for the building. Launch of the project for the future sorting centre at Sevran (Seine-Saint-Denis) represented an investment of 2.2 million Euros. The Romainville sorting centre (Seine-Saint-Denis) benefited from

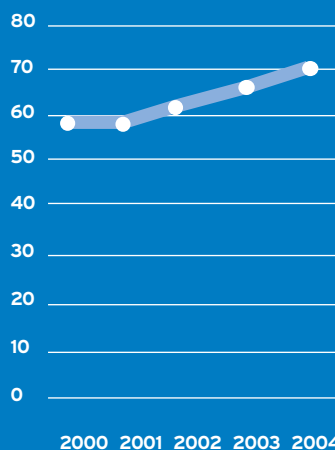
240 000 Euros for putting its electrical circuitry into conformity with the latest standards, arranging and landscaping the space around the plant and various improvement studies.

A sum of 460 000 Euros was spent on studies concerning the heliport site, in the XVth *arrondissement* of Paris, earmarked for establishing a new waste sorting centre, the first of four planned for the capital.

Expenditure breakdown for every 100 Euros of service charge



Service charge variations



The service charge paid by the member municipal councils enables SYCTOM to pursue its objective of household waste management and pollution reduction.

Revenue: 6% increase in the licence fee

The service charge is the price to pay for waste management while protecting the environment. It is paid by each of SYCTOM's member municipal councils and is the largest source of operational income, amounting to 209.7 million Euros, or 79% of the revenue. It is calculated on the basis of an average price per tonne, which in 2004 was 83.18 Euros per tonne and the contribution per inhabitant at 5.57 Euros, a 6% increase, in line with commitments made over the length of the mandate in order to smooth financial effort over that period. This progression enables SYCTOM, as part of its public service task, to modernize and diversify household waste processing methods and cut down pollution. This policy entails adaptation of installations to the strictest standards, improvement of smoke treatment, strong reduction in the need for the landfill solution, development of materials recovery, implementing alternative transport policy to reduce road traffic and improved working conditions for processing-centre staff. Energy sales make up the second largest revenue source for SYCTOM. They generated 39.41 million Euros (tax included) in 2004, which led to a 26% reduction in EfW centre operational costs. In addition, the financial support paid by Eco-Emballages, the third main source of income, and the deposits paid for returns (newspapers and magazines, marketing of by-products spin-off products) amounted to 12 million Euros in 2004.

Operational income

Administrative accounts 2004

| | |
|---|-------------|
| Contributions from member municipal councils | 209 710 749 |
| Allocations, subsidies (including Éco-Emballages) and contributions | 12 055 032 |
| Other products from running management including commercialization of sorted products | 8 696 700 |
| Exceptional products (VAT receipts-Vitry en 2004) | 20 011 218 |
| Résultat n-1 | 14 223 407 |
| Total operational receipts | 264 697 106 |

Debt and supplementary self-financing

On 31 December 2004, the debt outstanding amounted to an overall sum of 282 million Euros. During this year, SYCTOM concluded six loans, totalling 165 million Euros. The average duration of residual debt is 13 years, with an average interest rate of 3.8%. A proportion of 69% is on a fixed rate at average rate of 4.5% and 31% on a variable rate for an average of 2.3%. SYCTOM has pursued active management of the debt and of the cash funds, by way of an agreement concluded for a 70 million Euro cash line. This has enabled SYCTOM to practice arbitrages between variable and fixed rates according to the state of the market and to benefit from better rates for fresh loans or when negotiating. The proportion of complementary self-financing, coming in as a supplement to obligatory depreciations, fixed at 9.6 million Euros in the 2004 budget. This self-financing enabled SYCTOM to restrict the recourse to loans.

Investment income

Administrative accounts 2004

| | |
|-------------------------|-------------|
| Loans | 141 704 790 |
| Subsidies | 70 776 174 |
| FCVAT | 1 174 542 |
| Depreciation of assets | 20 104 424 |
| Assets | 9 870 |
| Reserves and result n-1 | 5 042 960 |
| Total investment income | 178 812 758 |

Investment programme per site

| Site | Nature of programme | Investments (exc tax en MEuros) | Period of realisation | Works financed 2003 | Works financés en 2004 |
|--------------------------|---------------------|---------------------------------|-----------------------|---------------------|------------------------|
| Isseane | Processing centre | 527.76 | 1998-2007 | 35.91 | 92.29 |
| Saint-Ouen | Smoke scrubbing | 34.37 | 2001-2005 | 10.37 | 16.30 |
| Ivry-Paris XIII | Smoke scrubbing | 40.13 | 2003-2005 | 0.83 | 11.73 |
| Ivry-Paris XIII | Processing centre | | 2003 | 0.34 | 0.03 |
| Nanterre | Sorting centre | 18.57 | 1999-2004 | 10.38 | 6.82 |
| Romainville | Sorting centre | 0.84 | 2003-2004 | 0.63 | 0.20 |
| Sevran | Sorting centre | 11.00 | 2003-2006 | 0.07 | 0.01 |
| Paris XV | Sorting centre | 16.72 | 2004-2007 | 0 | 0.09 |
| Studies and misc ; works | | | | 0.11 | 0.03 |
| Total | | 649.39 | | 58.64 | 127.52 |

Loan organizations

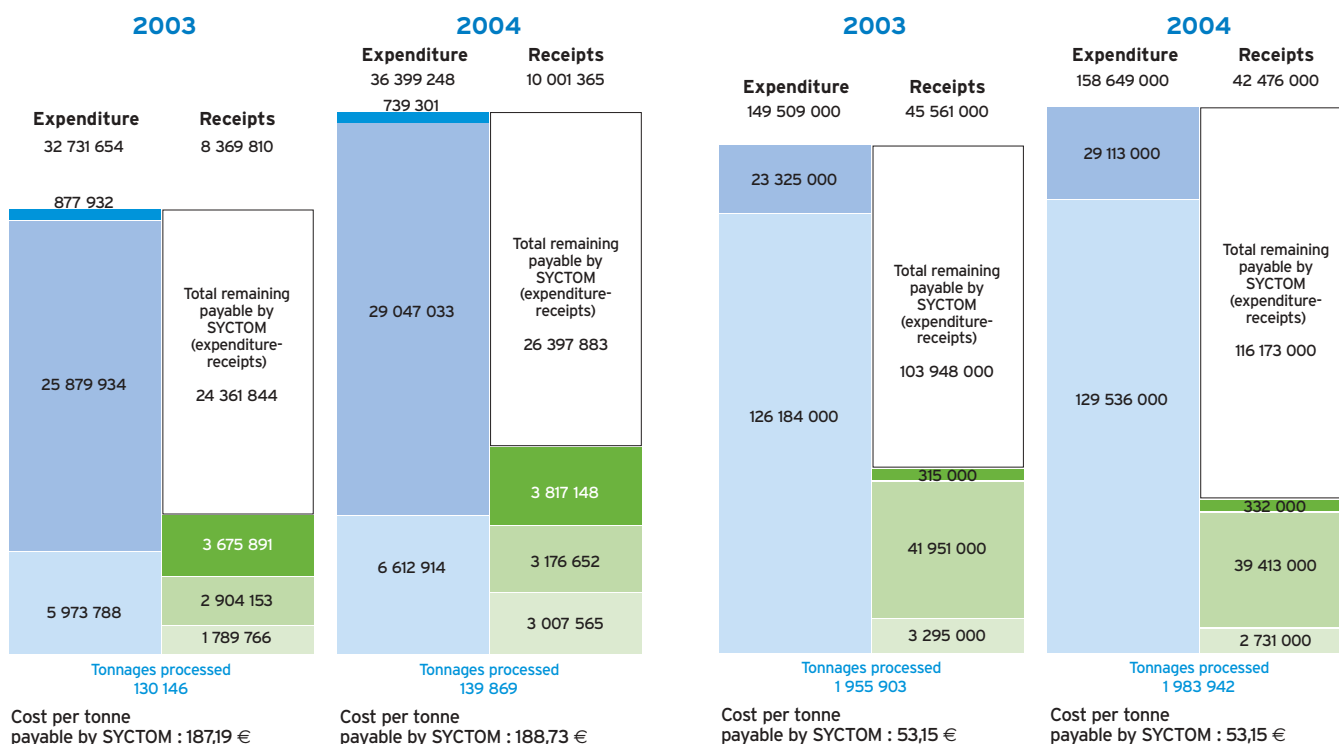
| Loan organization | Outstanding at 31/12/2003 in Euros | | Outstanding at 31/12/2004 in Euros | |
|-------------------------------|------------------------------------|--------|------------------------------------|--------|
| CLF/DEXIA | 46 468 560.76 | 27.92% | 102 396 030.82 | 36.29% |
| Société Générale | 23 822 560.29 | 14.31% | 17 911 915.68 | 6.35% |
| WestLB | 5 000 327.77 | 3% | 3 750 245.83 | 1.33% |
| Caisse d'Épargne | 20 000 000 | 12.01% | 56 395 924.00 | 19.99% |
| Crédit Agricole | 12 382 015.9 | 7.44% | 9 333 333.33 | 3.31% |
| Calyon | 0 | 0% | 20 000 000.00 | 7.09% |
| Crédit Lyonnais | 4 573 470.72 | 2.86% | 4 065 307.33 | 1.44% |
| Depfa Banque | 0 | 0% | 20 000 000.00 | 7.09% |
| Natexis Banque Populaire BFCE | 4 065 307.32 | 2.44% | | 0% |
| Agence de l'Eau | 122 412.83 | 0.001% | 100 693.50 | 0.04% |
| CDC IXIS | 10 000 000 | 6.01% | 9 230 769.23 | 3.27% |
| Crédit Foncier de France | 40 000 000 | 24.03% | 38 947 368.42 | 13.8% |

Processing costs in 2004 (Estimates)

$$\text{Average gross cost of waste processing} = \frac{\text{Total operational costs} * 2004}{\text{Total tonnages processed in 2004}} = 92,55 \text{ Euros/tonne}$$

Cost of processing selective collections (Euros, current rate)

Cost of incineration with EfW (Euros, current)



Expenditure

- Support (45,73 Euros/tonne) and abatements for municipal councils
- Operational costs (Tax inc.) (including sorting rejects management)
- Depreciation and financial costs

Receipts

- Sale of packaging materials to industries
- Sale of newspapers/magazines
- Support from Éco-Emballages

Expenditure

- Operational costs (tax inc.) (including processing of residues and clinker)
- Depreciation and financial costs

Receipts

- Support from Éco-Emballages for EfW (tax inc.)
- Energy (tax inc.), sale of steam and electricity
- Recovery of clinker by-products (tax inc.)

Moreover, in 2004, the cost of treatment of bulky waste was **107 euros per tonne (tax included)** and the cost for landfill site delivery was **87 euros per tonne (tax included)**.

* AA

A collegiate organization that more broadly associates the elected members

New constitution

The Syndicate Committee is SYCTOM's permanent policy-making body, with authority to vote the budget and decide what projects and works to engage in. After unanimous approval by the member municipal councils, SYCTOM's constitution was modified by prefectorial order on 10 June 2004. The objective of this reform is to have better representation of member municipal councils of the five departments, to readjust the balance between Paris and the two primary syndicates (SYELOM and SITOM 93) and take into account inter-municipal groupings. This conforms with commitments made by the syndicate's Chairman François Dagnaud, at the beginning of his mandate. From now on, more than one in two municipal councils (48 out of 85) take part in SYCTOM's work. The number of elected members sitting on the committee has almost doubled, rising from 38 to 68 members:

- 24 representatives of Paris City Council;
- 14 delegates from SYELOM (Hauts-de-Seine department);
- 14 delegates from SITOM 93 (Seine-Saint-Denis);
- 13 delegates representing municipal councils in Val-de-Marne;
- 3 delegates representing the municipal councils of Yvelines.

The composition of the Board of officers which prepares the Committee's meetings was also enlarged to 36 members, against 24 previously, with parity of the number of Vice-Presidents between the two primary syndicates and the representation of municipal councils in Yvelines.

The Committee's major decisions in 2004

In 2004 the Syndicate Committee met five times and took several strategic decisions. All the deliberations were adopted unanimously. First, the development of materials recovery from waste was confirmed. That objective was furthered by the launch of the construction project for the **first selective collection sorting centre in Paris**, in the XVth arrondissement, the modernization and fitting-out of the Seine-Saint-Denis bulky waste sorting centre and the conclusion of a new sales

contract with the company UPM-Chapelle Darblay for recycling 50 000 tonnes of paper per year, the transit of which will gradually be switched to river transport from 2005.

Next, the procedures for **transitory management of the existing Issy-les-Moulineaux plant** were defined in order to ensure the continuity of the waste processing service before Isseane opens in 2007. The elected representatives decided to **convert Issy 1 into a transfer centre for processing waste in 2006 and 2007**, without altering the organization and cost of municipal councils' collection contracts and in order to limit traffic. The corresponding public contracts were attributed at the end of the year.

The third major measure: at the session on 30 June 2004, SYCTOM's representatives decided to embark on a **policy of waste prevention and 300 000 tonnes reduction of waste for incineration and landfill** per year between the present and five years' time (see part 5). This Five Year Plan was presented and discussed during the installation session for newly elected members in application of the Syndicate's new constitution.

Finally, the representatives confirmed a rigorous budgetary and financial management plan for a period of several years. The administrative accounts for 2003 were approved at the meeting of 30 June 2004. The overall surplus for the year-end closure for 2003 (16.1 million Euros) enabled SYCTOM to finance the extra budget for 2004, carried on the same day, and to put together a reserve to prepare finance for extra costs linked to the transitory management of Issy 1 in 2006-2007. Prepared at the committee

meeting of the 27 October 2004 on the budget strategy, the provisional budget for 2005 was adopted during the meeting of 8 December 2004. A 6% increase in the municipal council licence fee for 2005 was decided, in conformity with the engagement made with respect to the municipal councils, with a concern for spreading costs over time. The Committee also approved an **agreement between SYCTOM, TIRU and the CPCU on energy recovery from waste** processed in the three incineration plants, after three years of difficult negotiations conducted under the aegis of Raymond Roux, Vice-President of SYCTOM. This agreement, concluded for the period 2005-2007, will over the long term help stabilize the syndicate's receipts from EfW.

Sessions of the Tenders Committee

SYCTOM's programme is also punctuated by meetings of the Tenders Committee, which operates under the authority of the Chairman and consisting of five members elected by the Committee. Its role is defined by the Public Contracts Code and consists in checking the validity of applications and offers before attributing contracts. The Committee met 14 times in 2004. The representatives of the *Recette générale des finances* and the DCRF (the Competition and Fraud Control Department), each having one consultative vote, were invited and attended each meeting, although this is no longer an obligation in virtue of the new Public Contracts Code.



| | | | |
|---|--|---|--|
| *  François DAGNAUD Chairman (75) | |  Alain LE GARREC Councillor for Paris (75) | *  Christiane BAUDAT Assistant to the Mayor of Suresnes (92) |
| | *  Yves CONTASSOT Vice-Chairman Assistant to the Mayor of Paris (75) |  Pierre MANSAT Assistant to the Mayor of Paris (75) |  Christine BOURCET Assistant to the Mayor of Nanterre (92) |
| *  Nicole AZZARO Vice-Chairman Councillor for Paris (75) | *  Jérôme COUMET Councillor for Paris (75) |  Géraldine MARTIANO Councillor for Paris (75) |  Michel de LARDEMELLE Assistant to the Mayor of Levallois-Perret (92) |
| *  Jean-Charles BARDON Councillor for Paris (75) | *  Roxanne DECORTE Councillor for Paris (75) | *  Sophie MEYNAUD Vice-Chairman Councillor for Paris (75) |  Jean-Paul GAUDIN Councillor for Ville-d'Avray (92) |
|  Jean-Didier BERTHAULT Councillor for Paris (75) | *  Laurence DOUVIN Councillor for Paris (75) |  Christophe NAJDOVSKI Councillor for Paris (75) | *  Jacques GAUTIER Mayor of Garches (92) |
| *  Geneviève BERTRAND Councillor for Paris (75) |  François FLORES Councillor for Paris (75) |  Cécile RENSON Councillor for Paris (75) | *  Alain JULIARD Councillor for Boulogne-Billancourt (92) |
| *  Michel BULTE Vice-Chairman Councillor for Paris (75) | *  Pierre GATIGNON Vice-Chairman Councillor for Paris (75) | *  Gérard REY Vice-Chairman Councillor for Paris (75) | *  Dominique LAFON Assistant to the Mayor of Fontenay-aux-Roses (92) |
|  Jeanne CHABAUD Councillor for Paris (75) | *  Brigitte KUSTER Councillor for Paris (75) |  Pierre SCHAPIRA Assistant to the Mayor of Paris (75) | *  Hervé MARSEILLE Mayor of Meudon (92) |
| *  Lyne COHEN-SOLAL Assistant to the Mayor of Paris (75) |  Élisabeth LARRIEU Councillor for Paris (75) | *  Jean-Pierre AUFFRET Vice-Chairman Assistant to the Mayor Clichy-la-Garenne (92) | *  Olivier MERIOT Vice-Chairman Assistant to the Mayor of Gennevilliers (92) |



Jean-Loup METTON
Mayor of Montrouge (92)



Bernard LABBE
Vice-Chairman
Councillor for
Aulnay-sous-Bois (93)



Jean-Marie BRETILLON
Mayor of
Charenton-le-Pont (94)



Dominique PICARD
Councillor for
Saint-Mandé (94)



André SANTINI
Vice-Chairman
Member of National
Assembly - Mayor of
Issy-les-Moulineaux (92)



Jean-Philippe MALAYEUDE
Assistant to the Mayor
of Neuilly-Plaisance (93)



Christian CAMBON
Mayor of
Saint-Maurice (94)



Michel PRA
Councillor for
Gentilly (94)



Hervé SOULIE
Assistant to the Mayor
of Saint-Cloud (92)



Claude PERNES
Vice-Chairman
Mayor of
Rosny-sous-Bois (93)



Séverine de COMPREIGNAC
Assistant to the Mayor
of Joinville-le-Pont (94)



Jean-Michel SEUX
Assistant to the Mayor
of Vincennes (94)



Daniel BERNARD
Assistant to the Mayor
of Bagnolet (93)



Michel PRIN
Assistant to the Mayor
of Sevran (93)



Pierre GOSNAT
Vice-Chairman
Mayor of
Ivry-sur-Seine (94)



Daniel TOUSSAINT
Mayor of Valenton (94)



Josiane BERNARD
Assistant to the Mayor
of Bagnolet (93)



Henri REIN
Assistant to the Mayor
of Neuilly-sur-Marne (93)



Roger JOUBERT
Vice-Chairman
Councillor for
Maisons-Alfort (94)



Gérard MEZZADRI
Delegate
of Grand-Parc
Inter-municipal
District (78)



Danielle BRICHOT
Assistant to the Mayor
of Stains (93)



Sylvain ROS
Councillor for
Aubervilliers (93)



Jean-Yves LE BOUILLONNEC
Mayor of Cachan (94)



Guy RECHAGNIEUX
Assistant to the Mayor
of Chénay (78)



Jean-Pierre COMTE
Assistant to the Mayor
of Drancy (93)



Alain ROUAULT
Vice-Chairman
Assistant to the Mayor
of Saint-Ouen (93)



Jérôme LE GUILLOU
Assistant to the Mayor
of Kremlin-Bicêtre (94)



Raymond ROUX
Vice-Chairman
Assistant to the Mayor
of Vélizy-Villacoublay (78)



Michel DEBAILLY
Councillor for
Drancy (93)



Gérard SAVAT
Vice-Chairman
Assistant to the Mayor
of Pantin (93)



Franck PERILLAT
Assistant to the Mayor
of Villejuif (94)



Gérard GAUDRON
Vice-Chairman
Mayor of
Aulnay-sous-Bois (93)



Alain AUDOUBERT
Mayor of
Vitry-sur-Seine (94)

75 Paris
92 Hauts-de-Seine
93 Seine-Saint-Denis
94 Val-de-Marne
78 Yvelines

* Members of the Board

Professional teams

The various departments of SYCTOM of the Paris urban area have 112 salaried staff, technical and administrative officers drawn from local government and the civil service or Paris City Council. Staff are deployed in three General Divisions, all under the authority of the Director-General of Services: Division of Finance and Administration, responsible for the organization and day-to-day management of the Syndicate; the Division of Operations and Waste Prevention which oversees the proper functioning of SYCTOM's centres and follows up the operational contracts; and the Division of Technical Services, responsible for the construction of new SYCTOM centres, the installation of new facilities and the maintenance of the whole system of installations. Three other Divisions are attached to the Director-General's office: Communication; Contracts and Legal Affairs; Information Technology and Telecommunications.

Our partners: wide cooperation between public and private operators

In order to favour the success of its missions, SYCTOM of the Paris urban area works in liaison with many different partners. These are State departments, public bodies, local authorities and private companies:

- **the European Union** defines the key objectives for waste treatment and environmental protection, by means of directives which are transposed into national law by the State. SYCTOM is currently in negotiation with the European Investment Bank in order to obtain loans at attractive interest rates.
- **the Ministry of Ecology and Sustainable**



SYCTOM's future waste sorting centre at Sevrans will be devoted entirely to multi-material selective collections and will comply with the principles of high environmental quality.

Development sets the main principles governing waste management and the standards that must be complied with according to the European directives. It also determines the financial resources of Ademe.

- The French Environment and Energy Agency **Ademe** (*Agence de l'environnement et de la maîtrise de l'énergie*) is a public body, under the joint supervision of the Ministries of Ecology, Industry and Research. Its mission in this sector is to help local authorities set up systems for waste management.

- The **Prefectures** deliver the permits to operate to the waste processing centres. Depending on the case, they set up CLISs (Local Commission for Information and Surveillance) whose objective is to promote provision of information for the public concerning the conditions and the operating results of the waste processing installations submitted for approval (two CLISs monitor the SYCTOM centre at Issy-les-Moulineaux and Ivry-Paris XIII). They also determine the composition of a Consultative Committee (Prefecture,



Department Council, municipal councils, devolved Government services, Ademe, consular chambers, professional organizations, associations), with the task of devising and implementing the Departmental Plan for the Elimination of Wastes.

- The **Region** is an essential partner for SYCTOM. The law of 13 August 2004 concerning local liberties and responsibilities provides for the production of a Regional Waste Elimination Plan covering the Île-de-France region.

This is to be drawn up on the initiative and under the responsibility of the Chairman of the Regional Council. In accordance with the law, public establishments such as SYCTOM will be involved in devising the plan. The Departmental plans will remain applicable during the transition period. The Region contributes to SYCTOM's investments as part of the contract called "Terres vives", with which Ademe is also associated: the overall support arranged in this contract amounts to 57 million Euros.

- SYCTOM has the support also of **SYELOM** and **SITOM 93**, two member primary syndicates which take its actions in hand in the departments of Hauts-de-Seine and Seine-Saint-Denis. They put to work their own skills and resources for these (waste processing centre network, communication activities).
- The **Department Councils** (*Conseils généraux*) take part at their request in the drafting and revision of Departmental Plans for Elimination of Household Waste, which define at the scale of each department the governing principles and means to mobilize for household waste management. They can grant aid towards investments by local authorities.
- The Île-de-France **Regional Waste Observatory (ORDIF)** is an association which conducts studies at the regional scale to extend knowledge on waste management, with a view to passing findings on to the different parties concerned.
- **Éco-Emballages** is a company, operating under private company law, approved by the State and set up on public authority initiative (decree of 1 April 1992). Its task is,

throughout the country, to assist and support the setting-up and development of systems of selective collection, sorting, recycling and energy recovery concerning household packaging. It receives a financial contribution from companies which manufacture and sell packaged products for domestic consumers. The funds raised is then redistributed to local authorities so that they can finance their investments for selective collection and recovery of household packaging and their communication campaigns to encourage the public to sort their domestic waste.

- The company **UPM-Chapelle Darblay**, on a contract with SYCTOM since 1995, buys back for a guaranteed price newspapers and magazines sorted in all the centres operated by or on behalf of the Syndicate.
- The company **CPCU** buys steam produced by SYCTOM's three household waste incineration units. This is fed into heating systems for 250 000 apartment equivalents.
- All the Syndicate's centres are run by private companies: **TIRU** operates the three EfW plants; **Generis** operates the sorting centres at Romainville, Saint-Denis and Nanterre; and from 2005 **SITA** will run the Ivry-Paris XIII sorting centre.
- SYCTOM also calls on the private sector for certain services such as the delivery of waste to Class 1 landfill centres, and for clinker recovery and waste incineration: **SITA France Déchets** runs the Class 1 landfill centre at Villeparisis, and the companies **Novergie**, **SIEVD** and **Curma** operate EfW plants used by the Syndicate at Argenteuil, Saint-Thibault-des-Vignes, Rungis, Massy, Monthyon and Saint-Ouen.

Key figures for 2004

Tonnages brought to the different processing centres

Total tonnage
of household waste
in SYCTOM's
territory
2 710 387 t
(2 701 224 t)

Waste processed
by SYCTOM
2 525 379 t
(2 493 409 t)

Annual budget: 410.42 MEuros

Service charge: 71.34 Euros
per tonne treated

Human resources
on 31/12/2004
SYCTOM: 100 agents
Private operators
of processing centres:
710 agents
including
TIRU SA: 370
Généris: 270
TIRVED: 70

Plus 5 345 000 residents
practising selective
collection in 88 municipalities.

Selective collection
sorting-recycling
139 869 t
(130 146 t)

Bulky waste sorting
190 335 t
(183 842 t)

Waste processing centres
58 499 t
(52 182 t)

Composting
5 200 t
(5 589 t)

Direct to EfW deposits
1 736 961 t
(1 734 737 t)

Including HW unsuitable
for incineration
1 715 t

Romainville transfer centre
direct deposits
330 328 t
(321 868 t)

Household waste to landfill
64 187 t
(65 045 t)

Glass
101 011 t
(95 100 t)

Glass not handled by the
SYCTOM system : 100 123 t
Quantity transiting via
SYCTOM : 888 t

Waste from municipal councils
not sending not sending their
refuse to SYCTOM system
83 997 t (112 715 t)

Not transiting via
SYCTOM

Figures for 2004
(figures for 2003)



Biogas

Gas produced by the degradation of organic matter, in the absence of air. Similar to fossil gases used as energy sources, its components are methane and carbon dioxide.

Bulky waste

Household waste too large to put in the bin (electrical appliances, furniture, mattresses etc.).

Classified installations

Installations that can be the source of hazards or pollution and whose use is regulated.

Two types of such site are distinguished: those depending on a declaration of the Prefecture and those subject to permission from the Prefecture after a public inquiry, as is the case for waste processing facilities.

Clinker or slag

Non-combustible residues produced in the incineration furnace. After maturation, they are used in road works.

Cogeneration

Production of steam and electricity from heat produced by waste combustion and collected for use as energy.

Dioxins

Generic name for a family of toxic compounds which belong to the halogenated polycyclic aromatic hydrocarbons (HPAHs). They are made up of atoms of carbon, hydrogen, oxygen and halogens (chlorine, bromine, iodine, fluorine)

Direct deposit

Selective collection method whereby the resident takes sorted materials for recycling, placing them in appropriate containers located in public places (this is often the case for glass collection).

EMR

Food cartons in fine light cardboard (cake boxes, external packaging of yoghurts etc.).

Energy recovery (EfW)

Recovery of energy by using the calories contained in the waste by burning to capture the energy in the form of steam or heat (Energy from Waste).

Fly ash

Fine ash produced during waste incineration and contained in the gases liberated from the heating furnace exit.

They are captured in an electrofilter along with dust at the first level of incineration smoke treatment or scrubbing.

Heavy metals

Metals which are hazardous for human health if allowed to accumulate in the environment. They include lead, cadmium and mercury.

HDPE (high-density polyethylene)

Opaque plastic material used in manufacture

of fabrication of packaging such as domestic product bottles. It can be recycled in the form of piping, shoe stiffeners, plastic bottles and cans, etc.

Household waste (HW)

Waste produced from day-to-day domestic activity (domestic refuse, bulky items, special harmful waste, garden waste, motor-vehicle waste).

Waste produced by daily domestic life that can be handled by traditional collection.

HWIU

Household waste incineration units.

Incineration

Waste processing method by burning (technologies and temperatures differ depending on the type of waste) and involving smoke treatment or scrubbing. It generates three kinds of residue: clinker, ash and smoke-scrubbing residues.

The heat produced by incineration can be recovered as usable energy.

Leachates

Waters which percolate through waste stored on a site and become charged with bacteria and chemically-loaded substances. They are pollutants and must be treated before possible ejection into the natural system.

LFC

Packaging for food liquids such as cartons for milk or fruit juice.

Materials recovery

Recovering a value for waste by using its constituent materials, like the reconstitution of used oil, recycling of newspapers and magazines and packaging material.

Methanization

A process which activates the production of biogas by controlled anaerobic degradation of organic waste. It is an energy source that can be recovered and used by burning.

Non-hazardous industrial waste (NHIW)

Waste resulting from industries. These can be processed in the same installations as household waste.

Organic materials recovery

Recovery of green and organic waste for reuse, in composting for example.

PET (polyethylene terephthalate)

Plastic material used in particular in the manufacture of transparent bottles (water, drinks). It is recyclable as new bottles, containers, textiles, filling for duvets, pillows, anoraks and soft toys.

Recovery

This consists in rendering waste material valuable by reuse of the product (deposit), recycling, composting, regeneration (production of a new raw material) or in the form of energy.

Residual waste

Non-recoverable wastes, residues from waste processing "which are no longer able to be treated under the current technical and economic conditions, notably by extraction of the recoverable part or by reduction of their polluting or hazardous nature" (law of 13 July 1992).

Recycling

The reintroduction of materials from waste into its own cycle of production (glass, plastic, steel and so on...) in order to substitute completely or partly for virgin material.

Residues from smoke-scrubbing after household waste incineration

Residues from household waste incineration plants which carry the residues from dust removal and smoke-scrubbing. They undergo stabilization before being deposited at Class 1 landfill centres.

Rubble

Debris resulting from demolition work.

SEA

Small electrical appliances.

Selective collection

Collection of waste already sorted by users for the purposes of recycling (packaging, newspapers/magazines, glass).

Sorting centre

Installation where waste from selective collection is sorted more finely in order to separate by type of material.

Sorting rejects (undesirables)

Packaging in the sorting centre which is too soiled or materials unsuitable for recovery for recycling. They are extracted by materials sorters sent to the recycling sectors.

TOE (tonne of oil equivalent)

Measure which allows inter-comparison of types of energy, by reference to oil. Example : 1 200l of fuel = 1 TOE.

Waste

Any residue from a process of production, transformation or utilization, or any abandoned substance, material, product or movable object or which the owner wishes to throw away.

Waste processing

Treatment of waste after collection to reduce its polluting potential and reduce the flow of waste by composting, regeneration (production of new raw material) with energy recovery.

Special waste recycling centre

A specially developed central collection point with free access for users, where bulky waste, special or hazardous household waste can be deposited (oil, solvents, paint, batteries, etc.).

Draft annual report on the cost and quality of the public waste elimination service*

Financial and technical indicators

| Number of municipals in SYCTOM area | Number of residents in SYCTOM area | Tonnages (gross) of delivered waste | | | Selective collection | | | | | Service charges | |
|---|---------------------------------------|---|---|-------|-------------------------------------|--|-----------------------------------|----------|----------------------------|--------------------|-----------------|
| | | Household waste, sweepings, green waste | Bulky waste | NHIW | Newspapers & Magazines | Multi- materials | Papers & cardboard | Glass | HW processing centre | Part population | Part tonnage |
| 85 member municipal councils + 4 councils under temporary management agreement | 5 360 446 | 2 135 925 t, i.e. 398.6 kg/ res/year | 190 335 t i.e. 35.50 kg/ res/year | 751 t | 2 312 t i.e. 0.4 kg/ res/year | 136 896 t i.e. 25.5 kg/ res/year | 510 t i.e. 0.1 kg/ res/year | 887.68 t | 58 499 t | 5.57 Euros | 71.34 Euros |

Processing centres and location

Location of SYCTOM processing centres: 3 HWIU, at Issy-les-Moulineaux (capacity: 565 000 t; quantities 2004: 538 477 t), Ivry-sur-Seine (capacity: 730 000 t; quantities 2004: 699 250 t), Saint-Ouen (capacity: 600 000 t; quantities 2004: 639 869 t); 3 selective collection sorting centres, at Nanterre (capacity: 30 000 t; quantities 2004: 8 682 t), Ivry-sur-Seine (capacity: 30 000 t; quantities 2004: 34 553 t), Romainville (capacity: 45 000 t; quantities 2004: 42 391 t), 2 bulky waste sorting centres, at Saint-Denis (capacity: 60 000 t; quantities 2004: 60 588 t), Romainville (capacity: 75 000 t; quantities 2004: 74 332 t), one transfer centre at Romainville (capacity: 350 000 t; quantities 2004: 330 328 t), 3 HW processing centres, at Ivry-sur-Seine (quantities 2004: 11 554 t), Saint-Denis (quantities 2004: 9 596 t), Romainville (quantities 2004: 37 349 t).

Location of private units used by SYCTOM: HWIU at Massy (Curma), Rungis (SIEVD), Argenteuil, Saint-Thibault-des-Vignes, Monthyon; sorting centres at Arcueil, Ivry (Revival), Gennevilliers, Buc (Nicolin), Blanc-Mesnil, Chelles; composting unit at Triel/Seine.

Household waste processing

| | |
|--|--|
| Operation organization of waste elimination service entrusted to SYCTOM of the Paris urban area | Public contracts |
| Total annual expenditure for waste management by SYCTOM (Operations section of administrative accounts 2004) | 210 119 079 Euros |
| Source of financing of global waste management service | Contribution from municipal councils and aid from Éco-Emballages for selective collection |
| Basis for calculation of special service charge for elimination of similar materials | N/A |
| Annual total of main paid services under contract in MEuros (Tax inc.): TIRU SA: 63.7 MEuros - Generis: 24.1 MEuros - REP: 20.9 MEuros - SITA: 21.7 MEuros - SARM/REP/Generis: - 1.3 MEuros - Novergie: 6 MEuros - TIRVED: 7.3 MEuros - Valor Industries: 3.2 MEuros - Nicollin: 1.2 MEuros - YPREMA: 3.8 MEuros Revival: 1.5 MEuros - SIEVD: 0.8 MEuros - Curma: 0.7 MEuros - MRF: 4.1 MEuros. | 160 354 856 MEuros |
| Overall cost per tonne of waste removed, of bulky waste elimination service (processing or storage) | 107.40 Euros per tonne |
| Transport and landfill storage of sorting rejects included | |
| Products from admission fees at processing and storage centres where the municipal council is owner for related wastes | N/A |
| Sums paid back in support of selective collection | 45.73 Euros/t multi-materials (without glass), newspapers/magazines, office papers, 30.49 Euros/t multi-materials with glass |
| Itemized amounts of aid received from approved bodies: support by tonne sorted | 7.83 MEuros |

Processing-Recovery

| | | | | | |
|---|---|--|---|--------------------------------------|---|
| Incineration-derived recovery: Electricity: 233 641 MWh, Steam: 3 091 138 MWh, Clinker: 448 691 t, Ferrous metal sold: 41 937 t, Non-ferrous metal sold: 1 794 t | Multi-materials recovery: 94 621 t of plastics, paper-cardboard newspapers & magazines, steel and aluminium | Bulky waste recovery: 42 088 t of wood, scrap metal, large format cardboard | Recovery in processing centres: 27 019 t | Recovery composting unit: 1 790 t | Recovery Class 2 landfill centre: 376 005 t |
| Itemized total of income received from recovery: | | | | | |
| Recovery materials other than from approved bodies | | | | | 4.57 MEuros (Tax inc.) |
| Efw | | | | | 39.41 MEuros (Tax inc.) |
| Measures taken during the year for prevention or alleviation of harmful effects on human health and the environment: Continuation of works to bring 3 HWIUs into conformity with ministerial order of 20 September 2002. | | | | | |

* In application of Decree n°2000-404 of 11 May 2000. This document will be submitted to the vote of the Committee of SYCTOM of the Paris urban area, at its meeting of 29 June 2005.

In ten years, waste tonnages per resident that SYCTOM has to process have risen by over 20%.

Is this growth inevitable ?

Not at all. That is why in 2004 the Syndicate launched a waste prevention policy, formulated in a General Action Plan.

The objective: a sustainable reduction of volumes of waste to be processed, while controlling the environmental impacts of waste management

