

Annual Report 2 0 0 1





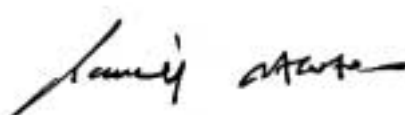
t

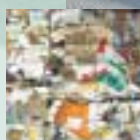
he publication of the 2001 Annual Report coincides with the expiry of the 10-year deadline imposed by the 1992 "Royal" act, arising out of the EC Landfill Directive, which provides for an end to the landfill disposal of unprocessed waste. This report therefore pursues a dual objective: making the challenges we face easier to understand, and providing the necessary elements on which to base plans for the future with the greatest possible clarity.

For our part, we can say without exaggeration that the massive 640 million net investment programme voted through by the Committee in December 2001 to cover the capital spending that will be required over the next few years reflects our dedication to succeed in the task of public service entrusted to us by the municipal councils. Success achieved not at any price, but as part of what is now a widely-accepted process of sustainable development in the interests of the local populations we serve.

I hope that this report will be another brick added to the edifice we are patiently seeking to construct: an efficient waste management policy in which everyone shares.

François DAGNAUD
Chairman of SYCTOM





Facts & Figures

- p. 6-10 • Areas served by SYCTOM
- p. 11-17 • Waste processing methods
- p. 18-21 • Waste processing units and centres
- p. 22-29 • Throughputs
- p. 30-32 • The Syctom budget



Strategy & Actions

- p. 34-35 • Current status and outlook
- p. 36-43 • Syctom projects
- p. 44-46 • A duty of information and transparency



Organisation & Services

- p. 48-60 • Decision-making bodies
- p. 61 • Partners
- p. 62-63 • Key figures



Facts & Figures

*Providing a public service
to 5.5 million users,
processing 2.9 million tons
of waste.*

The most densely in France

In the areas served by Syctom, eight out of ten residents live in apartment blocks. The generation of domestic waste is also higher than the national average.

the Syctom (Syndicat intercommunal de traitement des ordures ménagères, or inter-municipal domestic waste processing syndicate) for the Paris urban area is responsible for processing the domestic waste generated by the residents of its 90 member municipal councils and 1 client municipal council, spread over five administrative departments. This represents a population basin of 5.5 million residents (over 9% of the French population) and close on 3 million tons of domestic waste arisings annually.

This area also includes the most densely populated and highly urbanised region of France (907 residents per square km), where housing is particularly dense and concentrated and where multi-storey housing predominates. Some eight out of ten residents live in apartment blocks. Their lifestyles and consumption habits have a direct influence on the volume and nature of the domestic waste they generate.

Waste production is thus higher in the Syctom area than in the rest of France and the Ile-de-France region (surrounding Paris): 520 kg/resident/year* compared to a national average of 440 kg and 481 kg/resident/year in the Ile-de-France region (Ordif 2000).

Residents in the Ile-de-France also generate more packaging waste but less organic waste than the national average.

● Member municipal councils and primary syndicates

Municipal councils are members of Syctom, either directly or through the agency of primary syndicates established before Syctom itself was founded: Sielom (92) and Sitom 93. The city of Paris, three municipal councils in the Yvelines department, one in the Hauts-de-Seine and thirteen in the Val-de-Marne are direct members of Syctom, and one municipal council is a client.

Sielom, which covers 34 municipal councils in the Hauts-de-Seine department, is responsible for the introduction and development of selective waste collection within its area.

Sitom 93 covers 38 municipal councils in the Seine-Saint-Denis department. Sielom and Sitom

93 also provide support services to their members in the form of information, aid in decision-making and with the pursuit of selective collection. These two primary syndicates work closely with Syctom as privileged partners. ■



The selective collection.

1896: THE FIRST WASTE PROCESSING PLANT IN SAINT-OUEN

By the late 19th century, the city of Paris had begun building waste processing plants in the inner suburbs to handle the domestic waste produced by Parisians. The first of these, in Saint-Ouen, was completed in 1896. The Romainville and Issy-les-Moulineaux plants followed shortly after. The last in the series, in Ivry-sur-Seine, dates from 1910. Though demolished and rebuilt at regular intervals, the plants still stand to this day on or very near the historic sites of the



first installations. When Syctom was created in May 1984, it inherited the responsibility for these sites, and so its history is closely entwined with that of domestic waste processing for the Paris urban area. Syctom is also grounded in a tradition of inter-municipal pooling of resources.

The initial 70 member municipal councils were several years in advance of the inter-municipal groupings that are now to be found all over France as a response to the technical and regulatory constraints affecting the sector.

(*) DW (domestic waste) + BDW (bulky domestic waste) + SW (selective waste + garden waste).

urban territory



KEY FIGURES

- 18 direct member municipal councils;
- 34 municipal councils with membership via Sielom (primary syndicate for the Hauts-de-Seine department);
- 38 municipal councils with membership via Sitom 93 (primary syndicate for the Seine-Saint-Denis department);
- 1 client municipal council;
- 5 administrative departments: Paris, Hauts-de-Seine, Yvelines, Seine-Saint-Denis, Val-de-Marne;
- 5.5 million residents;
- 2 540 000 tons of domestic waste processed by Syctom (2001);
- 2 904 000 tons total waste arisings.



Over 2 904 000 domestic waste

Mainly traditional collection, but also a constant increase in selective collection and in waste streams from municipal waste deposits.

In 2001, the total domestic waste arisings handled by Sycotom amounted to 2 904 000 tons, of which 87.3% (2 537 657 tons) was transferred directly to and processed in the various Sycotom centres. The bulk of the waste came from "standard" or "traditional" collection, and represented 81.8% of the initial waste arisings.



The volume of selective waste collection continues to rise.

In 1998, traditional collection represented 90% of the domestic waste arisings in France. Of an estimated total of 22 million tons, 2.2 million tons (approximately 10%) came from selective collection.



(Source: ADEME Municipal waste, the key figures.)

The figures below bear witness to the major efforts undertaken by local authorities to develop selective waste collection, and also to Sycotom's expansion of municipal waste deposit capacity. Waste from Paris alone accounts for close on 47.6% of the waste handled by Sycotom. The three key characteristics of the waste arisings in the area served by Sycotom can thus be summarised as follows: a high proportion of domestic waste, an increase in the proportion of sorted waste for subsequent recycling, and the high volumes of waste generated by the city of Paris.



● **Traditional collection:** : this is the traditional form of waste collection, where users co-dispose of all their waste in a refuse bin, bin-bag or wheelie bin.

● **Selective collection (domestic packaging and newspapers/magazines):** this applies to certain waste streams, selectively sorted at source by the user prior to disposal for specific processing or recycling. Selective collection is carried out in one of two ways: kerbside, where the waste is collected from outside the user's home, or bring-to-bank, where the user takes the waste to containers provided in public areas. The bottle-bank is the most common form of collection for glass. Between 1997 and 2001, the volume of selective collection excluding glass* handled by Sycotom rose by 116% from 42 176 tons to 91 375 tons.

Sources of waste handled by Sycotom centres in 2001 (tons)

Traditional collection	2 156 560	84,98 %
Selective collection	91 375	3,6 %
Bulky objects	172 841	6,81 %
Municipal waste deposits	55 950	2,2 %
NIW	53 181	2,1 %
Garden waste	7 750	0,31 %
Total	2 537 657	100 %

(*) No glass is handled at Sycotom facilities.

tons of generated in 2001



Bulky objects (domestic appliances, furniture).

● Bulky domestic waste:

items of domestic waste which, because of their weight and size, cannot be disposed of through traditional refuse collection. These tend to consist of articles such as domestic appliances, furniture, etc.

● Municipal waste deposits:

Syctom operates three municipal waste deposits to which users can bring waste that is not suitable for traditional collection (rubble, garden waste, wood, etc.), and also bulky domestic waste.

Intake rose from 19 603 tons in 1997 to 77 885 tons in 2001.



Another two categories of waste make up the waste arisings handled by Syctom:

● **Garden waste:** from the upkeep of gardens and grounds (grass cuttings, leaves, branches, etc.). Garden waste is generated by municipal councils which carry out a specific collection (although these municipal councils are not required to transfer this waste to Syctom centres).

● **Non-hazardous industrial waste (NHIW):** Syctom handles some of the waste generated by the activities of small traders or small firms, which are collected along with domestic waste. Office waste paper, boxes and plastics are considered "equivalent" to domestic waste. ■





Tonnages of waste collected by member municipal councils, by department (tons)

	DW+BDW+SC +garden waste	Glass (not treated by Sycotm)	Total
Paris	1 209 035	29 194	1 238 229
Hauts-de-Seine	552 149	22 597	574 746
Seine-Saint-Denis	424 154	14 481	438 635
Yvelines	53 425	3 110	56 535
Val-de-Marne	188 806	7 293	196 099

Tonnages handled by Sycotm

	DW incomin	SW collected	Municipal waste deposits	BDW	Garden waste	Glass	NHIW	Total
1997	2 137 636	42 176	19 603	150 867	-	50 448	45 804	2 446 534
1998	2 104 392	55 837	21 538	166 384	-	56 206	48 580	2 452 937
1999	2 166 718	66 129	31 068	174 282	-	65 641	54 793	2 558 631
2000	2 190 214	85 820	45 216	176 684	9 080	73 118	50 812	2 630 944
2001*	2 156 560	91 375	55 950	172 841	7 750	76 675	53 181	2 614 332
2001**	221 405	678	21 937	29 717	16 816	-	-	290 553
Total 2001	2 377 965	92 053	77 887	202 558	24 566	76 675	53 181	2 904 885



(*) Waste sent to Sycotm centres.

(**) Waste sent by member municipal councils to non-Sycotm sites.

DW: Domestic waste, SC: Selective Collection, BDW: Bulky domestic waste, NHIW: Non-hazardous industrial waste.



View of the Romainville waste transfer centre.

Waste processing systems: overall results

22.7% of waste processed in the Ile-de-France region in 2000 went to landfill.

SYCTOM employs five processing methods: composting, recycling, EfW and storage in category 1 and 2 (hazardous/non-hazardous) landfills.

The processing of domestic waste falls within a regulatory framework designed specifically to promote the development of recycling, composting and recovery. We at Syctom have introduced a policy which seeks to comply with the targets set by law. At the same time, however, we must also take into account the specific context of the Paris urban area.



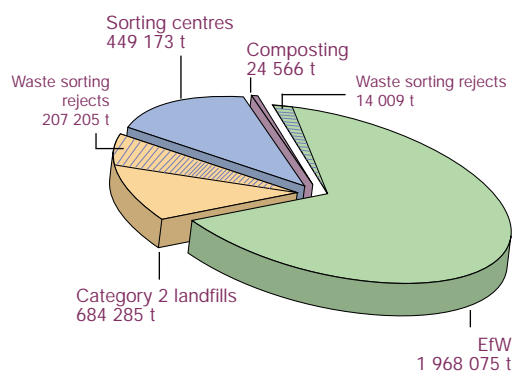
A sorting line.

In this respect, the processing situation in 2001, when close on 700 000 tons of domestic waste including not only unprocessed domestic waste but also waste sorting rejects were sent to landfill, can only be a temporary solution. This situation was very largely brought about by the forced abandonment of the Vitry-sur-Seine sorting centre and EfW plant and the halting of the Tremblay-en-France project, which would have avoided the landfilling of 684 285 tons of domestic waste.

Although the proportion of domestic waste landfilled by Syctom was considerable, it was still well below the national average. 50% of domestic waste in France is still sent to landfill without prior processing. In the case of Syctom, this percentage is an aggregate 16.2% for all the municipal councils served. The tonnage actually landfilled is higher, however, because of the waste sorting rejects (bulky domestic waste and selective collection waste) which have to be added to the raw domestic waste (Source ADEME: Municipal waste, the key figures). ■

(*) Source ORDIF 2000.

Processing of tonnages produced by Syctom municipal councils (*)



(*) Fewer than 480 000 tons of bulky domestic waste are sent direct to landfill in the area served by Syctom, i.e. 16.2% of the initial arisings of 2.9 million tons.

THE REGULATORY BACKGROUND - THE MAIN POINTS:

- 1) The law of 15 July 1975 required municipal councils to collect and process domestic waste.
- 2) The law of 13 July 1992 reinforced these obligations and set new targets for:
 - waste recycling/recovery;
 - preventing and reducing the harmfulness of waste;
 - organising and limiting transport;
 - informing the public.
- It also banned the landfilling of unprocessed waste as from 1 July 2002. From this date onwards, only so-called "residual waste", i.e. waste that has been pre-processed to remove any recoverable fractions or waste not amenable to processing, would be permitted to go to landfill disposal centres.
- The 1992 law also introduced departmental plans for the disposal of domestic waste, setting collection and processing targets for the department and defining the resources to be deployed in order to achieve those targets. Municipal councils and inter-municipal syndicates such as Syctom are required to follow these guidelines.
- 3) The circular of 28 April 1998 redirected domestic waste processing policy away from EfW and towards recycling, and led to a systematic review of all departmental plans. It was followed and supplemented by the circular of 28 August 1998.

Recycling: over 680 000 tons of waste



*32.6% of waste recycled in the Ile-de-France in 2000**

paper, cardboard, metal, glass, plastic: waste contains massive quantities of materials suitable for recovery and recycling into new products. Waste paper can be used to make new products, as can both cardboard and glass. Before such materials can be recycled, however, the waste must be sorted and segregated. If this processing system is to be expanded, selective collection will need to become more widespread and the network of municipal waste deposits will need to be extended as essential preliminaries to waste sorting and to the segregation of waste streams by material.

After opening the first high-capacity mechanical sorting centre in France in 1993, Syctom has continued to expand its

sorting capacity in response to the increasing use of selective multi-material collection. In 2001 this option was available to close on 4.5 million residents of the area served by Syctom, and collected 91 375 t of recyclable waste (not including glass). The bulk of this tonnage was made up of newspapers and magazines.

It is not only waste from selective collection that is suitable for recycling, however. The metal slag produced by incineration, waste from sorting centres and bulky domestic waste are also candidates for recycling. Added to this is the clinker which is a by-product of EfW plants and which can be used as a substitute for natural aggregate in building and construction. Syctom centres produced 454 481 t of clinker in 2001, of which 419 061 t were sold on.

Recycling: tonnages treated by Syctom

	1994	1996	1998	2000	2001
Municipal waste deposits	9 535	13 760	21 538	45 216	55 950
Selective collection*	25 662	30 270	54 455	85 820	91 375
Bulky domestic waste	194 156	173 174	166 384	176 684	172 841
Total	229 313	217 204	242 377	307 720	320 166

* Not including glass.

(*) Source ORDIF 2000.

Recycling: overall results for 2001

	Total tonnages incoming	Treated by Syctom		
		in a Syctom centre	in private centres	not treated by Syctom
Glass	76 675	-	-	76 675
deposits	77 887	55 950	-	21 937
BDW	202 558	117 004	55 837	29 717
Selective collection	92 053	66 576	24 799	678
Sub-total (all selective collection)	449 173	239 530	80 636	129 007
Clinker	470 307	-	454 481	15 826
Total recycling (including clinker)	919 480	239 530	535 117	144 833



recycled

Syctom does not recycle glass

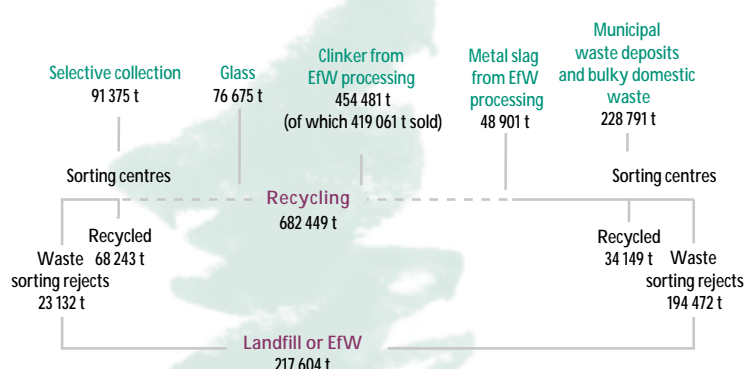
Syctom is not involved in glass recycling, although several hundred tons of glass (only a fraction of the total glass arisings) come into Syctom centres. This glass is sent to a subsidiary, Verre Avenir, for recycling.

Glass is the type of waste most commonly recycled in France. In the Paris urban area,



76 675 tons of glass were recycled in 2001 out of estimated potential arisings of 118 500 tons, giving a recycling rate of 65%. All in all, including all the waste from the different systems of selective collection and EfW, the total volume of waste processed by Syctom and sent for recycling amounted to 682 449 t. ■

Recycling: synopsis of waste streams processed by Syctom (results for 2001, in tons).



This diagram illustrates the key stages in recycling and the different tonnages involved. It also shows that some of the waste entering sorting centres or waste deposits and which cannot be recycled is sent either to EfW plants or to landfill. Recycling results thus depend to a great extent on the quality of sorting carried out by the user at source prior to disposal through selective collection.

France recycles over 50% of its glass. Results for paper and cardboard are on the increase, but still below 20%. Less than 5% of the stock of recoverable plastic is collected for recycling.

Recycling: sectors concerned

Type of waste	Recycled products made	Company concerned
Food and drinks cans	Food and drinks cans, auto parts	Sollac
Food and drinks cans	Food and drinks cans, auto parts	France Aluminium Recyclage
Milk/juice/soup cartons...	Toilet paper, kitchen towel, egg-boxes	Revipac
Washing powder/cereal boxes	Cardboard boxes and packaging	Revipac
Plastic bottles and containers	Pipes, noise-barriers, textile & insulation fibres, bottles, packaging	Valorplast
Glass bottles and jars	Glass bottles for food and drinks	Verre Avenir
Newspapers/magazines	Newspapers/magazines	Chapelle Darblay





Energy from

EfW accounted for 44.7% of waste in the Ile-de-

W

aste incineration produces recyclable by-products (metal slag and clinker), as well as residual waste or "waste resulting from waste" which, for the time being, has to be disposed of in "category 1" landfill sites specially designed for the storage of hazardous wastes.

EfW is a means of transforming a body of waste into energy and re-usable material while concentrating pollution into the ash and scrubber residues. Syctom is also working on a new process for recycling these ashes and residues which will avoid the need to landfill. Once all the by-products of incineration are re-usable, EfW will generate virtually no residual waste whatsoever. The process will be operational before the end of 2005.

EfW, or energy recovery, involves using the thermal energy of domestic waste to produce energy in the form of electricity or steam.

● EfW: 2001 results

Syctom treated 1.9 million tons of domestic waste in its three EfW plants – Issy-les-Moulineaux, Saint-Ouen and Ivry-Paris XIII – in 2001, generating over 4.6 million tons of steam to heat over 210 000 homes in the process. Close on 288 000 MWh (megawatt hours) of electricity were generated. The total amount of energy recovered represented the equivalent of 320 000 tons of oil equivalent (TOE). EfW also produced 47 407 tons of metal slag, of which 99.8% was recycled, and over 454 000 tons of clinker recovered for use in building and construction.

● Syctom and EfW

There is general agreement amongst specialists that no process is inherently superior to another. Each has advantages and disadvantages which must be assessed according to context, which in turn is determined by the number of residents, density and type of housing, and the size of the area covered. A process which may be appropriate to an average-sized town is not necessarily suited to a major urban area.

Aggregate results for the three Syctom plants (tons)

Initial arisings		1 902 535 t
Steam		4 692 646 t
Electricity		287 849 MWh
Recovered by-products	<ul style="list-style-type: none"> • Metal slag • Clinker sold • Aluminium 	47 407 t 419 061 t 1 494 t
Residual wastes*		40 819 t

(*) Ash and scrubber residues.

(*) Scrubber residues.

Waste (EfW)

France in 2000

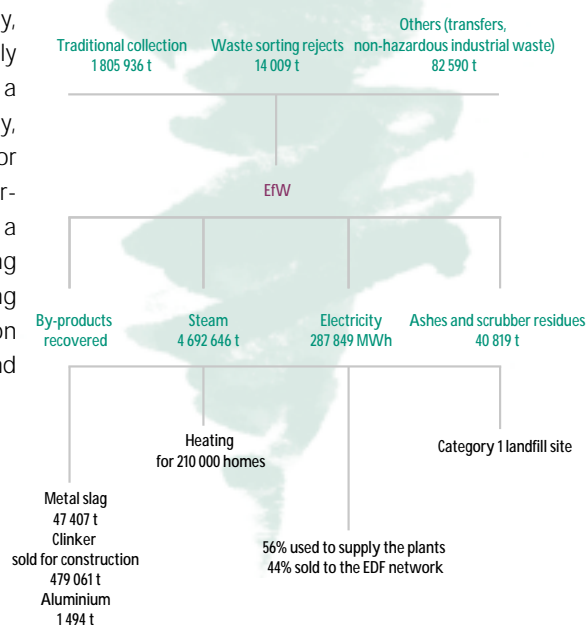
In the case of the Paris urban area, EfW became established as the logical solution some decades ago, elevating domestic waste to the status of a renewable energy source, of a sort. Even today, if we were to succeed in removing the maximum fraction of recyclable waste from the waste generated by each household, there would still be a residual volume of non-recyclable waste estimated to be at least 2 million tons. EfW avoids the need to landfill this waste. Vast new landfill sites would also be needed to cope with the volumes of waste involved, and these could only be located outside the area served by Sycotom. This in turn would mean adding the disadvantages inherent in the transportation of waste to those of landfilling. In view of the volumes of waste involved and the limits to recycling, EfW is a solution particularly well

2 days' worth of energy consumption

287 849 MWh: the energy generated by the Sycotom EfW plants is equivalent to two full days' worth of energy consumption by the 5.5 million residents of the Paris urban area.

Sycotom is developing a radically new process for recycling scrubber residues. An alternative form of transport has been introduced for the removal of clinker. Great care is taken to design EfW plants that blend in with their environment. Finally, because EfW is only one aspect of a multi-process policy, Sycotom has also for many years vigorously pursued a policy of supporting selective collection, expansion of sorting capacity and creation of methanisation plants to ensure the growth of recycling and organic recovery. ■

Synopsis of the EfW process: tonnages processed by Sycotom



EfW provided heating for a total of 210 000 homes in the area served by Sycotom.

suited to densely-populated regions like the Paris area. Co-generation (providing heating for nearby housing and also generating electricity) is easy to implement. Scrubber systems to remove the pollutants produced by the incineration of waste have become much more efficient and depollution requirements will become even stricter from 2005 onwards with the implementation of the new European directive of December 2000. In addition,

Landfill: a transitional situation

23% of the waste treated by Syctom in 2001 – just under 700 000 tons – went to waste storage, commonly known as tipping or landfill.

Operation

A landfill storage site is a controlled facility. It is subject to draconian operating regulations and controls, particularly as regards biogas recovery, rainwater drainage, and leachate recovery and processing. A triple waterproof barrier also provides protection for the subsoil.

For clearly understandable reasons of density of occupation, Syctom is unable to operate the facilities for EfW processing within the area it deals with. Instead, it relies on sites outside its operating perimeter, sites selected for their quality of service, cost effectiveness and environmental compliance. All sites used by Syctom are ISO 14000 certified.

In addition, Syctom embarked in 1993 on a "zero unprocessed waste to landfill" policy, the keystone of which was the Vitry-sur-Seine sorting and EfW centre. Following the government decision to abandon the plan in March 2000, we have been obliged to come to terms with the new situation and to continue landfilling a considerable volume of domestic waste until alternative solutions can be found.

As of 1 July 2002, however, only residual waste (processed waste) may be landfilled. In order to comply with regulatory requirements, Syctom has implemented* short-term and necessarily transitional solutions in order to be able to make drastic reductions in the proportion of unprocessed domestic waste sent to landfill by 2007.

Residual waste

The law stipulates that residual waste is what is left after the recoverable elements have been extracted from waste, or waste not likely to be processed in the current economic and technical conditions. This deliberately open-ended definition reflects a reality that differs from one area to another, since the very concept of residual waste depends on local situations.

In an area with no EfW centre, residual waste consists of all waste not suitable for

material or organic recovery. A worn-out pair of trainers or an old umbrella would therefore constitute residual waste. Should the same items be produced as waste in an area with a EfW centre, on the other hand, they would not constitute residual waste



since here they could be used for energy recovery. For this reason, the concept of "residual waste" needs to be specified in each departmental waste plan. Indeed, the concept may even vary within the confines of a single department.

Synopsis of the landfill storage sector

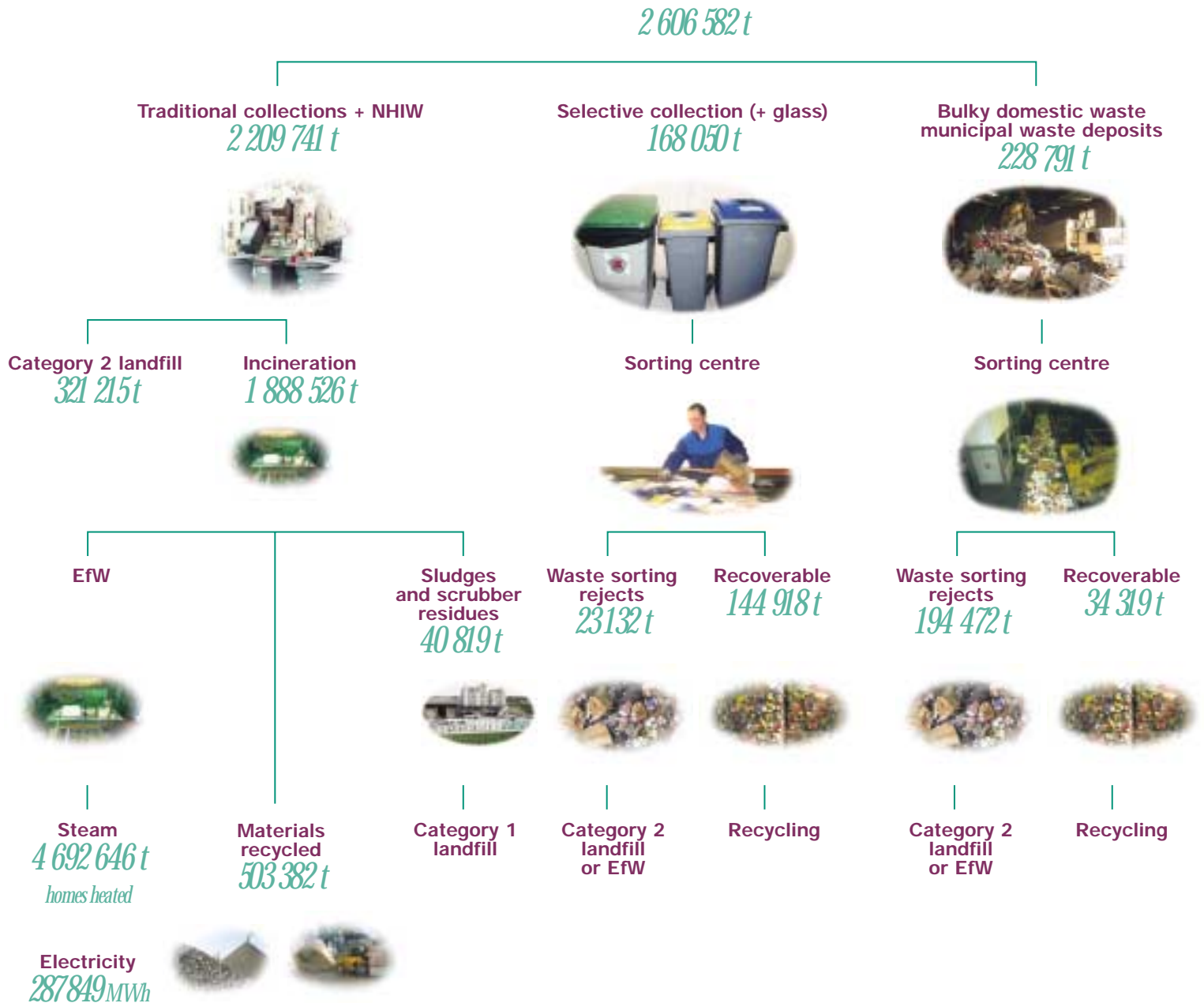
Landfilling is used for the storage of municipal waste deposit rejects, non-recoverable bulky domestic waste, waste sorting rejects and the domestic waste arisings from traditional collection that Syctom is unable to process in its EfW centres. ■

(*) In addition to the €640m net investment programme.



The Claye-Souilly centre in the Seine-et-Marne department.

The waste cycle





Syctom

A network of high-capacity facilities covering the entire area served

Syctom operates waste sorting and transfer centres, municipal waste deposits and EfW plants across the area it serves. These represent a total of 75% of the processing capacity required. Over the past ten years, however, Syctom has invested heavily in sorting facilities which currently treat close on 91 375 tons of waste from selective collection (packaging, newspapers and magazines) and some 172 841 tons of bulky domestic waste



Waste basins: the logic of proximity

Processing centres must be as close as possible to the sources of waste arisings. This commonsense requirement, which seeks thereby to keep the transport of waste to a minimum, was imposed by the law of 1975. In response, Syctom has organised its processing of domestic waste on the principle of geographical proximity, dividing the area it serves into four large zones known as waste basins, each associated with one of the four major processing centres: Ivry-Paris XIII, Issy-les-Moulineaux, Saint-Ouen and Romainville. ■

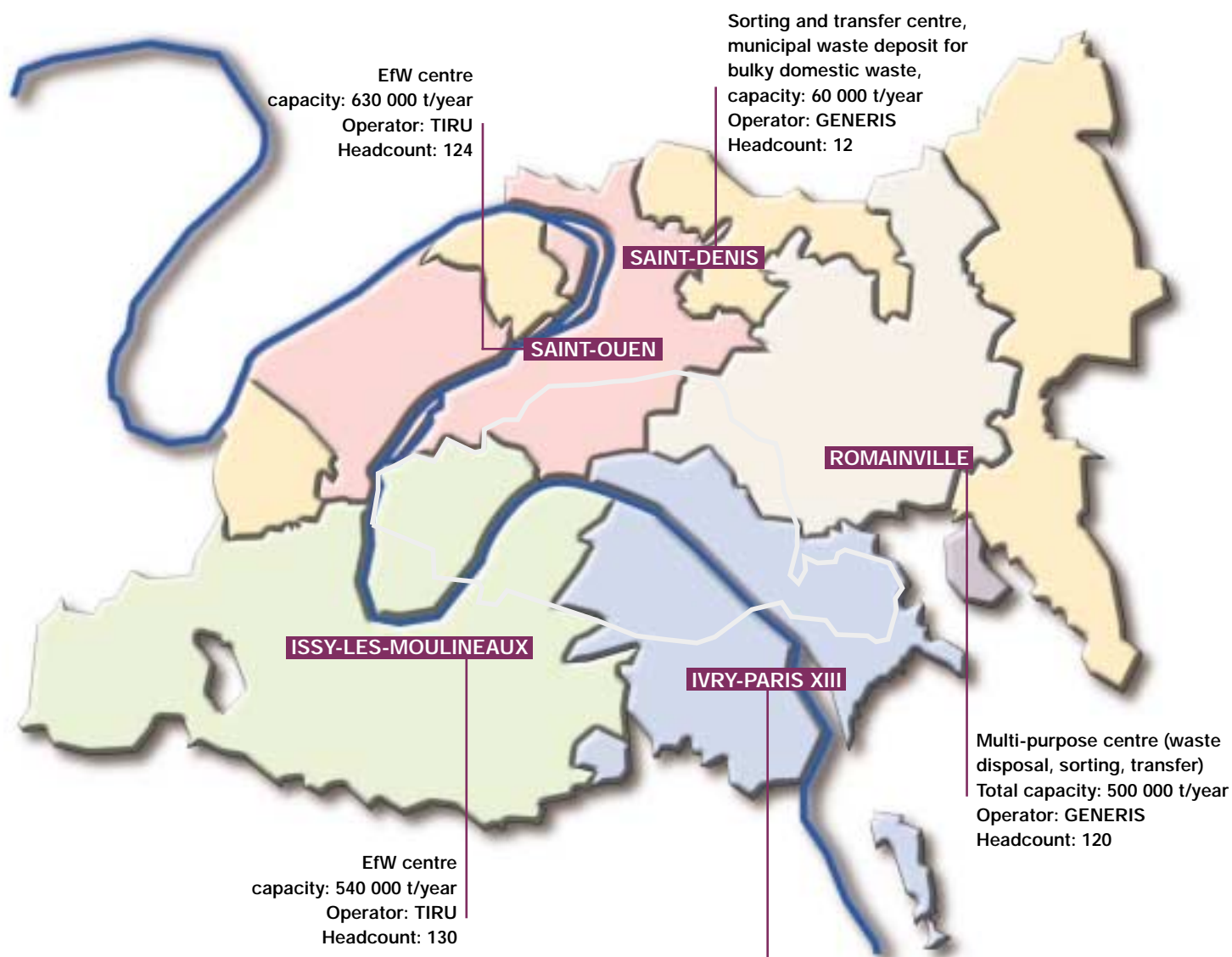
Over 600 employees

The various Syctom processing centres employ a total of 614 people who spend their days taking delivery of domestic waste and monitoring the smooth running of the waste processing facilities.

Syctom domestic waste basins

Romainville	Sorting and transfer centre	16 municipal councils and 3 Paris arrondissements	1 030 000 residents
Ivry-sur-Seine	Multi-process processing centre	17 municipal councils and 10 Paris arrondissements	1 320 000 residents
Saint-Ouen	EfW centre	18 municipal councils and 4 Paris arrondissements	1 300 000 residents
Issy-les-Moulineaux	EfW centre	22 municipal councils and 3 Paris arrondissements	1 170 000 residents

processing centres



Syctom processing capacity

Saint-Denis Centre	60 000 t/year
Romainville sorting and transfer centre	500 000 t/year
Saint-Ouen EfW centre	630 000 t/year
Issy-les-Moulineaux EfW centre	540 000 t/year
Ivry-Paris XIII sorting centre	30 000 t/year
Ivry-Paris XIII EfW centre	730 000 t/year
TOTAL	2 490 000 t/year



Sorting centres, clinker processing centre, landfill sites

In order to meet the needs of its member municipal councils and supplement its capacity for sorting selective collections and bulky domestic waste, Sycotm called on the services of a number of private centres in 2001:

Pierrefite (Seine-Saint-Denis), Vitry (Val-de-Marne) and Buc (Yvelines) for the sorting of multi-material collections excluding glass (the Buc centre also takes bulky domestic waste);

Châtillon (Hauts-de-Seine), Arcueil (Val-de-Marne) and Ivry-sur-Seine (Val-de-Marne) for bulky domestic waste.

It was the forced abandonment of the planned multi-process centre at Vitry-sur-Seine, a project which included a 170 000-ton sorting centre, that made it necessary to rely on these external private centres which in 2001 processed 80 636 tons of domestic waste, including 55 837 tons of bulky domestic waste.

Material recovery and final processing

Sycotm's three EFW centres produce over 450 000 tons of clinker, of which 92.8% by volume is recovered for use as construction material at three centres, Lagny-sur-Marne (Seine-et-Marne), Saint-Ouen-l'Aumône (Val-d'Oise) and Isles-les-Mesdeuses (Seine-et-Marne).

These plants also recover metal slag and aluminium, both by-products of the clinker process, which represent 1.8% of the volume processed. All three centres are

ISO 14001 and 9002 certified. The category 2 landfill sites at Bouqueval (Seine-et-Marne) and Claye-Souilly (Seine-et-Marne) both comply with the regulations introduced by the decree of 9 September 1997 which sets out the rules for operation of such sites. These regulations include the nature of the waste which may be stored at the site (domestic and equivalent waste), the processing of leachates, biogas recovery, impermeability of the subsoil and monitoring of groundwater quality.

The category 1 landfill site at Villeparisis (Seine-et-Marne) takes scrubber residues



The Lagny-sur-Marne clinker maturing centre.

from Sycotm's EFW centres, and also sludges from the treatment of smoke-scrubbing water. As required by law, these hazardous wastes are rendered inert and solidified before being stored in sealed compartments which are numbered and listed to ensure traceability. The centre is ISO 14001 and 9002 certified. ■

Category 1, category 2: what is the difference?

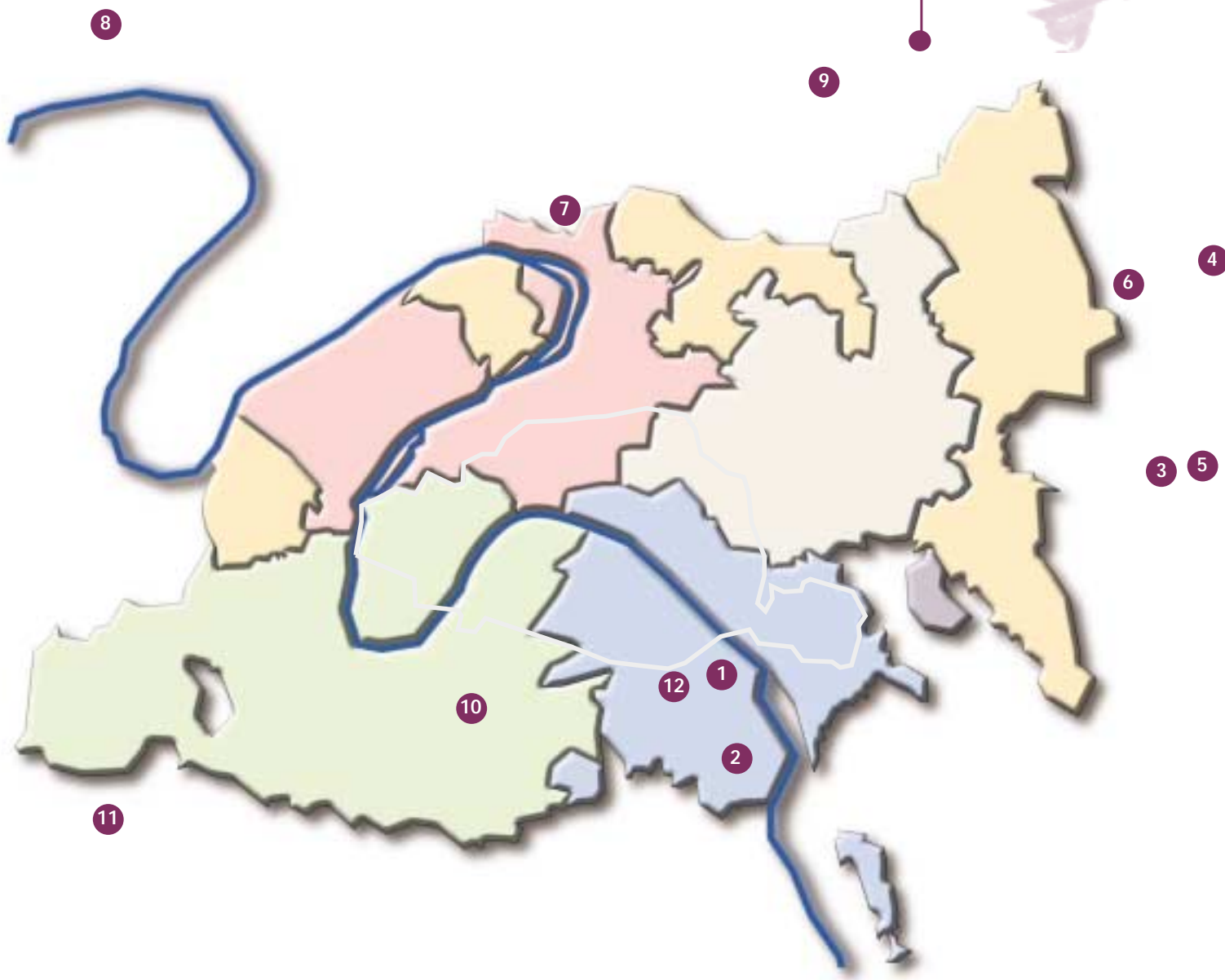
A category 1 site stores nothing but hazardous waste. The law requires that there should be such a site for every region. Category 2 sites are used to store domestic waste not amenable to recovery. As of July 2002, these centres can only be used to store what is known as "residual waste".



The Isles-les-Meldeuses clinker maturing centre.

processing centres

Facts
& Figures



1 IVRY
(Val-de-Marne)
Sorting centre
Operator: Sori Métal

2 VITRY
(Val-de-Marne)
Operator: SITA/CRR

3 LAGNY-SUR-MARNE
(Seine-et-Marne)
Clinker processing centre
Operator: Yprema

4 CLAYE-SOUILLY
(Seine-et-Marne)
Category 2 landfill site
Operator: REP

5 ISLES-LES-MEDEUSES
(Seine-et-Marne)
Clinker processing centre
Operator: TIRU S.A.

6 VILLEPARISIS
(Seine-et-Marne)
Category 1 landfill site
Operator: France Déchets

7 PIERREFITTE
(Seine-Saint-Denis)
Operator: CDI

8 SAINT-OUEN-L'AUMÔNE
(Val d'Oise)
Clinker processing centre
Operator: Paridu-Letourner

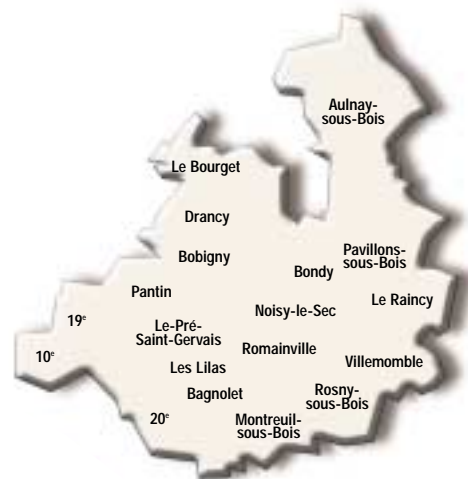
9 BOUQUEVAL
(Val d'Oise)
Category 2 landfill site
Operator: REP

10 CHATILLON
(Hauts-de-Seine)
Sorting centre
Operator: SARM

11 BUC
(Yvelines)
Sorting centre
Operator: Nicollin

12 ARCUEIL
(Val-de-Marne)
Bulky domestic item sorting centre
Operator: SITA

Throughputs



The Romainville multipurpose centre: throughputs

Incoming tonnages Romainville

Total : 512 157 t



Material recovery Results by material

Total : 76 773 t



Breakdown of incoming tonnages Romainville



The first high-capacity sorting centre to be built in France

The Romainville centre, built in 1993, consists of a transfer centre, a sorting centre and a municipal waste deposit. The task of the transfer centre is to regulate the waste stream. It acts as the reception point for traditional collections from the municipal councils making up the waste basin and redirects some of that flow to Syctom's various EfW centres. The remainder is sent to category 2 landfill.

The sorting centre takes delivery of selective collections and bulky domestic waste. The municipal waste deposit is open to residents of the waste basin, who deposited 33 281 tons of waste at the centre in 2001. All in all, the Romainville centre was responsible for directing over 76 000 tons of incoming waste for recovery and recycling in 2001.



The Saint-Denis centre: throughputs

A centre specialising in bulky domestic waste

The centre consists of a sorting centre for bulky domestic waste and a municipal waste deposit on the same site. The sorting centre takes bulky domestic waste from collections organised by member municipal councils for their residents. 62 746 tons of bulky domestic waste were received in 2001. The municipal waste deposit is open to all users. 6 254 tons of unwanted domestic appliances or furniture were deposited by local residents in 2001. ■



A sorting centre and a municipal waste deposit for bulky domestic waste share the same Saint-Denis site.

Bulky domestic waste: 36 kg per resident per year

The **theoretical volume** of bulky domestic waste in France was estimated at an average 36 kg per resident per year in 1998. Some specialists take the view, however, that this figure is **slightly overstated**. A significant proportion of the used furniture and domestic appliances that people throw out does **not actually become waste**. Charities collect items in working order, which thus enter the second-hand market and enjoy a **second lease of useful life**.

Sorting centre for bulky domestic waste

Incoming tonnages	69 000 t
-------------------	----------

Breakdown of outgoing tonnages

Landfill	64 358 t
Recovery	4 642 t
Recovery rate	6,73 %

Throughputs

The Ivry-Paris XIII multi-process centre Sorting centre and municipal waste deposit

The first multi-process centre to come on stream in the Paris urban area

The Ivry-Paris XIII centre has since 1997 combined a municipal waste deposit, a sorting centre and a EfW centre.

With an effective capacity of 30 000 tons, the sorting centre takes selective collections from municipal councils making up the waste basin. The centre operated at full capacity in 2001, treating 30 000 tons of waste including 15 500 tons of newspapers/magazines and close on 14 600 tons of other materials.

160 000 tons of waste have been delivered to the centre since it first opened in 1997, including over 10 600 tons of rubble.

Ivry-Paris XIII

Breakdown of incoming tonnages

Sorting centre	46 658 t/year
Municipal waste deposit	16 415 t/year
EfW	685 291 t/year

I - Sorting centre

Breakdown of outgoing tonnages

Incoming tonnages	46 658 t/year
Material recovery	42 470 t/year
Waste sorting rejects	4 188 t/year
RECOVERY RATE	91,34 %

Material recovery

Results by materials (en tons)

Rubble	10 619
Newspapers/magazines	14 475
Metals	1 256
Wood	0
Cardboard	3 337
Listings	0
Glass	207
Plastics	1 372
Garden waste	345
Pallets, etc.	6 212
Food and drinks cartons	85
Other	4 562
TOTAL	42 470



Sorted waste is baled.



EfW centre.

Built in 1969 and modernised in 1997

The EfW centre takes traditional collections from over 1.4 million residents. It is capable of processing up to 100 tons of waste per hour, making a total capacity of 730 000 tons a year. In 2001 the centre processed 720 000 tons of waste, generating:

- 151 188 MWh of electricity, 32% of which went to meet the site's energy needs while the remainder was sold to EDF;
- 1 743 000 tons of steam, providing hot water and central heating for something approaching 80 000 homes;
- 167 551 tons of clinker, over 83% of which was recovered;
- 16 672 tons of scrap metal, sold to the recycling industry.

The Ivory-Paris XIII centre, now fitted with a smoke-scrubbing system that meets all the latest standards, is France's single biggest EfW centre. As of 1995, the clinker destined for recovery has been shipped out by river to the Lagny-sur-Marne processing centre. ■



The Ivory-Paris XIII smoke stack.

II - EfW centre

Breakdown of incoming tonnages

Traditional collection	586 513 t
Garden waste	2 996 t
NHIW	123 394 t
TOTAL	722 488 T

I Controlled releases to atmosphere

	Ministerial decree of 25 January 1991*	Average of measurements carried out in 2001 (mg/m³)
Dust	30	10,5
Hydrochloric acid	50	4,5
Acide fluorhydrique	2	0,10
Hydrofluoric acid	300	61
Heavy metals		
Lead + chromium + copper + manganese	5	0,4
Nickel + arsenic	1	0,0218
Cadmium + mercure	0,2	0,0338
Dioxins	10 ng/Nm³**	1,85 ng/Nm³

* Regulatory thresholds on pollutant releases, applicable as from 1 December 1996 in milligrammes per cubic metre of air.

** Limit value set by the ministry.

EfW

Throughputs

By-products	Quantities produced	Recovery or processing
Electricity	151 188 MWh	102 688 MWh sold to EDF - 48 500 MWh to supply power to the plant
Steam	1 743 028 t	1 330 064 t sold to CPCU - heating for 80 000 homes
Clinker	167 551 t	140 226 t recycled into construction materials
Scrap metal	16 672 t	100% sold to the recycling industry
Scrubber residues*	15 728 t	To category 1 landfill
Water treatment sludges**	676 t	To category 1 landfill

(*) Ash from smoke scrubbers, removed for processing and storage.

(**) Sludges from the treatment of smoke-scrubber water, removed for processing and storage.



The Saint-Ouen

Breakdown of incoming tonnages

Collection type	Quantity	Origin
Traditional collection	662 915	Municipal councils
Garden waste	915	Municipal councils
NHIW	4 622	Clients privés*
Waste sorting rejects	6 165	Private customers*
Transferts	10 674	Syctom centres
TOTAL	685 291 t	

(*) Private/fire service/gendarmerie associations.

Throughputs

By-products	Quantities produced	Recovery or processing
Electricity	54 162 MWh	19 823 MWh sold to EDF 34 339 MWh to supply energy to the plant
Steam	1 685 378 t	1 587 896 t sold to CPCU
Clinker	159 260 t	158 782 t (maturation) transformed into construction materials
Metal slag	12 884 t	100% sold to the recycling industry
Scrubber residues	11 063 t	Category 1 landfill
Water treatment sludges	410 t	Category 1 landfill

Syctom's newest EfW centre

The Saint-Ouen EfW centre, built in 1990 and equipped from the outset with the most advanced smoke-scrubbing and site integration techniques, takes the traditional waste collections of over 1.3 million residents. The plant has the capacity to deal with 84 tons of waste an hour. In 2001 the centre processed close on 658 291 tons of waste for Syctom, generating:

- 54 162 MWh of electricity, 63% of which went to meet the site's energy needs, while the remainder was sold to EDF;
- 1 587 896 tons of steam, providing hot water and heating to close on 70 000 homes;
- 159 299 tons of clinker, almost 99.7% of which was recovered for re-use.
- 12 884 tons of scrap metal, sold to the recycling industry.

2001 marked a major change in the life of the Saint-Ouen centre: the introduction in August of a transfer platform to move the clinker by train to the Saint-Ouen-l'Aumône processing centre. Therefore, 17 000 trips done by 30 tons trucks have been suppressed per year.

Controlled releases to atmosphere

	Ministerial decree of 25 January 1991*	Average of measures made in 2001 (mg/m³)
Dust	30	7
Hydrochloric acid	50	8,6
Hydrofluoric acid	2	0,12
Sulphur dioxide	300	89
Heavy metals		
Lead + chromium + copper + manganese	5	0,2185
Nickel + arsenic	1	0,0125
Cadmium + mercury	0,2	0,027833333
Dioxins	10 ng/Nm³**	1,23 ng/Nm³

(*) Regulatory thresholds on pollutant releases, applicable as from 1 December 1996 in milligrammes per cubic metre of air.

(**) Limit value set by the ministry.



The Saint-Ouen centre.



and Issy-les-Moulineaux EfW centres

In service to 2005

Issy-les-Moulineaux is Syctom's oldest EfW plant. When it was founded in 1965, it was also the first centre in France to be equipped with a large-scale energy recovery system. In recent years, Syctom has made numerous investments to guarantee compliance with environmental requirements:

- €915 000 (FF6m) to roof in the unloading bays;
- €1.8m (FF12m) to upgrade the water treatment plant;
- €21.65m (FF142m) to sustain performance until 2005, its planned closure date.

Under the terms of the Hauts-de-Seine departmental plan for the elimination of domestic waste, the plant is to be replaced by a multi-process centre known as Isséane.

Issy-les-Moulineaux takes the traditional collections from close on 1.2 million residents. In 2001 the plant treated 577 086 tons of waste, generating:

- 82 499 MWh of electricity, 50% of which went to meet the site's energy needs, while the rest was sold to EDF;
- 1 264 240 tons of steam, providing hot water and heating for some 60 000 homes;
- 127 670 tons of clinker, 93% of which was recovered;
- 11 131 tons of scrap metal, sold to the recycling industry. ■

Breakdown of incoming tonnages

Collection type	Volume	Origin
Traditional collection	556 393	Municipal councils
Garden waste	2 162	Municipal councils
NHIW	2 991	Private customers*
Transferts	15 540	Syctom plants
TOTAL	577 086 t	

(*) TIRU-Asso-Gendarmerie.

Throughputs

By-products	Quantities produced	Recovery or processing
Electricity	82 499 MWh	41 540 MWh sold to EDF 40 959 MWh pour alimenter l'usine
Steam	1 264 240 t	1 068 580 t sold to CPCU 195 660 t
Clinker	127 670 t	118 987 t transformed into construction materials
Scrap metal	11 131 t	99.3% sold to the recycling industry
Ash	12 584 t	Category 1 landfill
Water treatment sludge	418 t	Category 1 landfill

Controlled releases to atmosphere

	Ministerial decree of 25 January 1991*	Average of measures made in 2001 (mg/m ³)
Dust	30	11,5
Hydrochloric acid	50	9,75
Hydrofluoric acid	2	0,10
Sulphur dioxide	300	37,2
Heavy metals Lead + chromium + copper + manganese	5	0,755125
Nickel + arsenic	1	0,041125
Cadmium + mercury	0,2	0,04725
Dioxins	10 ng/Nm ³	1,54 ng/Nm ³

(*) Regulatory thresholds on pollutant releases,
applicable as from 1 December 1996 in milligrammes per cubic metre of air.



The Issy-les-Moulineaux centre.

Throughput at non-Syctom

Over 80 000 tons

Bulky domestic waste and selective collection

Syctom uses the services of six external centres to supplement its capacities for the processing of bulky domestic waste and the sorting of selective collections. In 2001, these external centres dealt with 55 836 tons of bulky domestic waste and 24 489 tons of domestic waste from selective collection.

Breakdown of incoming tonnages

Site	Company	Bulky domestic waste	Selective collection	Total
Centre 1	(Arcueil – Sita)	26 929	0	26 929
Centre 2	(Buc – Nicollin)	11 824	7 636	19 460
Centre 3	(Ivry – Sorimetal)	10 782	0	10 782
Centre 4	(Châtillon – SARM)	6 301	0	6 301
Centre 5	(Pierrefitte – CDI)	0	13 106	13 106
Centre 6	(Vitry – Sita CRR)	0	3 747	3 747
TOTAL		55 836	24 489	80 325

Throughput of bulky domestic waste (tons)

	Recovery	Landfill	Recovery rate (%)
Centre 1	3 116	23 853	11,57
Centre 2	1 506	10 365	12,73
Centre 3	1 395	9 479	12,94
Centre 4	557	5 744	8,84
TOTAL	6 574	49 441	11,77

Throughput of selective collections (tons)

	Recovery	Waste sorting rejects	Recovery rate (%)
Centre 2	4 979	2 775	65,21
Centre 5	6 524	6 165	49,78
Centre 6	2 827	631	75,46
TOTAL	14 330	9 571	67 %

centres

Three ISO-certified clinker processing centres

The recovery of clinker as a substitute for construction hardcore and aggregate makes a direct contribution to preserving natural resources. The clinker must meet quality standards laid down by regulation, and so must be treated for subsequent recovery. Syctom uses three specialist clinker-processing centres:

Lagny-sur-Marne (Seine-et-Marne) recovers clinker from the Ivry centre. The plant was opened in 1995 and is operated by YPREMA.

Saint-Ouen-l'Aumône (Val d'Oise) recovers clinker from the Saint-Ouen centre. The plant came into service in 1996, and is operated by PARIDU-LETOURNEUR.

Isles-les-Mesdeuses (Seine-et-Marne) recovers clinker from the Issy-les-Moulineaux centre. The plant opened in 1996 and is operated by TIRFER.

Category 2 landfill sites

Two category 2 landfill sites take waste from traditional collections that cannot be used as EfW:

Bouqueval (Val d'Oise): the centre has a capacity of 3 600 t/day, making a total annual capacity of 13 million m³, and is ISO 9001 and 14 001 certified. It is operated by SARM-REP.



The Ivry-Paris XIII centre.

Claye-Souilly (Seine-et-Marne) :

the centre has a capacity of 5 500 t/day, making a total annual capacity of 15 million m³, and is ISO 9001 and 14 001 certified. It is operated by SARM-REP.

Category 1 landfill

The Villeparisis (Seine-et-Marne) site, opened in 1995 and operated by France Déchets, is one of the two hazardous waste landfill sites in the Ile-de-France region. With a capacity of 41 288 tons, in 2001 the site took close on 40 000 tons of residual waste produced by Syctom, in the form of ashes and sludges. ■

	Ash	Sludges	Total
Issy-les-Moulineaux	12 584 t	418 t	13 002 t
Ivry-sur-Seine	15 728 t	616 t	16 344 t
Saint-Ouen	11 063 t	410 t	11 473 t
TOTAL	39 375 t	1 444 t	40 819 t

	Lagny-sur-Marne	St-Ouen-l'Aumône	Isles-les-Mesdeuses	Total
Incoming tonnages	167 551 t	159 260 t	127 670 t	454 481 t
Tonnages sold to market	140 266 t	159 808 t	118 987 t	419 061 t
Metal slag sold	2 702 t	1 102 t	2 800 t	6 604 t
Aluminium sold	100 t	785 t	609 t	1 494 t
Processing rejects	420 t	0	0	420 t
Unburned waste	258 t	1 129 t	653 t	2 040 t
Leachate evacuation	4 520 t	4 482 t	25 453 t	34 455 t

Ferrous and non-ferrous metals

The clinker that arrives at the processing centres contains metal slag and aluminium. In 2001 close on 6 700 tons of metal slag and 1 500 tons of aluminium were recovered, in addition to the slag recovered at earlier stages at the EfW centres.

A budget of almost €272.4m



Financial statements for Syctom (€)

Operations	2000		2001	
Management costs	10 946 377,9	6, 97 %	9 635 006,97	5,43 %
Personnel costs	2 933 429,76	1, 87 %	3 580 449,10	2,02 %
Plant operating costs	123 980 008,71	78,96 %	136 973 930,61	77,25 %
Financial charges	5 279 754,32	3,36 %	7 375 806,10	4,16 %
Self-financing	0	0 %	19 747 032,47	11,14 %
Total operations	157 001 960,96	100 %	177 312 225,25	100 %

Investments	2000		2001	
Loan repayments	16 421 802,36	57,18 %	1 828 402,15	19,21 %
Research costs	5 973 371,77	20,80 %	5 960 239,53	6,26 %
Work in plants	6 014 485,51	20,94 %	10 670 680,72	11,21 %
Land purchases	0	0 %	60 019 225,50	63,07 %
Various purchases	311 170,38	1,08 %	230 874,47	0,25 %
Total investment	28 720 830,01	100 %	95 165 072,37	100 %

Total budget	185 722 818,72		272 477 297,62	
Investment spending excluding loans	12 299 027,66	6,62 %	76 881 020,22	

The 2001 budget

The budget for 2001 came to a total of €272.4m. In terms of operations, the essential feature was a significant increase in operating expenses for the plants and sorting centres, coupled with an increase in financial expenses budgeted to take in consideration new accounting provisions and the decision to make quarterly interest payments on certain new loans. In terms of capital spending, although the purchase of the site for the Isséane project went ahead (€60m), spending fell short of forecasts due to slippage in the schedules for Isséane, the Nanterre sorting centre and smoke-scrubbing improvements at Saint-Ouen.

€76.9m in investments

Investments made up 28.2% of the total Syctom budget in 2001, representing a total of €76.9m of which 43% was financed from own funds (self-finance and depreciation). The investment budget related principally to the land purchase and ongoing studies for the Isséane project.



Accommodation quarters for the Isséane project.

Main investments in 2001

Site	Nature of programme	Investments (€m gross)	Period of realisation	Work financed in 2001 (€m gross)
ISSÉANE	Processing centre	554,15	1998-2005	74,24
Saint-Ouen	Smoke scrubbing	41,1	2001-2004	0,9
Saint-Ouen	Transport of clinker	0,33	2001	0,3
Ivry-Paris XIII	Raising access ramps	0,26	2000-2001	0,18
Nanterre	Sorting centre	20,1	1999-2003	0,3

Debt

At 31 December 2001, the outstanding debt stood at €141.56m, about €26.5 per inhabitant. Syctom took out four loans in 2001, including €60m to finance the purchase of land for the Isséane site and €7.6m to help balance the investment section. The average term on residual debt is 10 years, and the average interest rate 5.15%. 47.31% of this debt is at fixed rates, at an average rate of 5.68%, and 52.69% at variable rates, averaging 4.68%.

The necessary self-financing

The level of supplementary self-financing, in addition to depreciation, was set at €3m in the preliminary 2001 budget: actual self-financing was €4.8m. ■

Lenders in 2000

Lender	Loan amount (€m)	%
CLF /Dexia	33,58	34
Société Générale	20,2	21
West LB	15,8	16
Crédit Agricole	9,5	10
Crédit Lyonnais	6,1	6
Crédit du Nord	3,2	3
Natexis/BFCE	5,59	6
BNP	2,71	3
Others	1	1
TOTAL	97,68	100

Lenders in 2001

Lender	Loan amount (€m)	%
CLF /Dexia	64,1	45
Société Générale	30,2	21
West LB	13,8	10
Caisse d'Epargne	11,1	8
Crédit Agricole	7,1	5
Crédit Lyonnais	5,6	4
Natexis/BNP	5	4
Divers	4,3	3
TOTAL	141,2	100

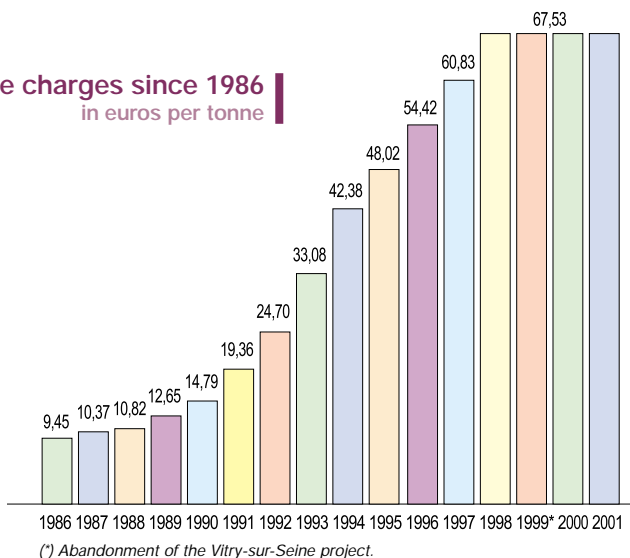


Site of the future Isséane processing centre.



The financing of waste processing

Service charges since 1986
in euros per tonne



Service charges, the principal source of financing

Service charges, i.e. the contribution paid by each member municipal council, represent Syctom's principal financial resource and for 2001 amounted to 168 441 530 or 95.58% of revenues. The service charge is based on an average price per ton set at €67.53 per ton for 2001.

The service charge has increased sevenfold in the past 15 years, primarily as a result of the intense efforts deployed on modernising the processing of domestic waste, as well as the progress made in pollution reduction. More effective smoke scrubbing, improved landfill techniques, reduced noise levels, development of material recovery, the use of alternative forms of transport for clinker: domestic waste today is managed much better than in the past, but there is also a price to be paid by all.

Revenue from the sale of energy is set against operating costs. In 2001, that revenue reduced service charge by some €18.29.



The Saint-Ouen centre.

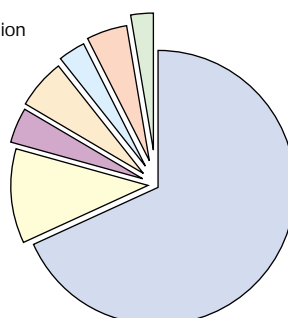
Other Syctom revenues

These come from two main sources: the sale of energy and the eco-packaging subsidy. Energy sales represented €44 955 874.51 in 2001, and reduced EfW centre operating costs by 20%. The eco-packaging subsidies paid by Eco-Emballages represented just over 5 million euros (€5 070 344). ■

How every €100 of service charges is used

68,17	Centre operations
11,14	Depreciation and self-financing
4,16	Interest charges
5,88	Smoke scrubbing
3,20	Clinker processing
4,79	Management costs
2,66	Support for selective collection

Out of every €100 paid by a municipal authority, €68.17 goes to cover centre operating costs which therefore represent the biggest single out-going. €11.14 goes into investments, and €5.88 into smoke scrubbing. Syctom's management costs account for under 5%.





Strategy & Actions

Extending material recovery capacity, introducing a new methanisation process, controlling environmental impacts and informing the public: decisive actions to be pursued with determination, for a strategy rooted in the aim of sustainable development.



Current status and outlook

The challenges facing Syctom



The selective collection rate across the area served by Syctom is 18.8%.

The "Royal" law of 1992 sparked an unprecedented wave of modernisation in domestic waste management. Under the terms of this law, as of July 2002 residual waste only (waste from which the recoverable fraction has been extracted, or which is not amenable to recovery) can be sent to landfill sites. So what is the status of domestic waste management in the area served by Syctom, and what are the prospects for the future?

A number of major factors must be taken into consideration in order to grasp fully the situation Syctom is currently facing and the challenges it will called upon to face in the future: growing volumes of domestic waste, a real – though relative – increase in the amount of waste recovered thanks to selective collection, the limitations inherent in the devolution of waste management to the departments and, finally, increased treatment costs brought about by increasingly stringent environmental requirements.

Ever-increasing volumes of domestic waste

Between 1992 and 1998, the average volume of domestic waste in France rose from 424 kg per resident per year to 450 kg. These figures include commercial and light industrial waste, some of which is collected at the same time as domestic waste. They represent an aggregate increase of 6%, i.e. an average of 1% per year. The problem will be increased for Syctom in 2002 when the

waste arisings from 18 member municipal councils which, for historic reasons, have hitherto not delivered their waste to Syctom centres, are added to its waste stream. This will add an extra 262 000 tons or thereabouts of domestic waste in 2002, to the volumes already handled by Syctom: an increase of close on 10%.

The development of selective collection

The proportion of domestic waste extracted from initial waste arisings by means of selective collection for future recovery is constantly increasing, but still falls far short of the targets set by the authorities. In the area served by Syctom, total selective collection including glass was 246 732 tons in 2001. These results are in line with the national average. Although they must be continued and expanded, the efforts undertaken by the Syctom municipal councils and their residents are very real and deserve to be recognised as such. Even so, by far the greatest proportion of domestic waste and this proportion must be reduced. Syctom will support this campaign by continuing to expand its sorting capacity, as it has constantly done since the opening of its first sorting centre at Romainville in 1993.

Vital regional coordination

The devolution of waste management to the departments was undoubtedly one of the major advances brought about by the "Royal" law, establishing real consistency and rationalisation of resources across each region. Syctom naturally operates in compliance with the Departmental Plans, but the very specific characteristics of the

Objectives for 2005

The major outlines of the government's domestic waste elimination policy made the following forecasts for 2003:

34% of domestic waste sorted in Paris and in the inner suburbs;
40% for the outer suburbs.

The rate of selective collection over the whole area served by Syctom is 18.8 %, or 85 kg/resident/year (bulky domestic waste + selective collection + newspapers/magazines). Before the departmental plan was reviewed, Syctom's target was 15%.



Paris urban area impose the need to adopt a more inter-departmental approach. Both the proposed organisation of treatment resources to ensure that these are indeed pooled efficiently between the member municipal councils and the application of the principle of proximity therefore require certain adjustments to the strict principle of departmental management. Establishing regional coordination for the management of domestic waste from the Paris urban region would therefore seem to be on the agenda.

Increasing treatment costs

After rising constantly since the 1980s, treatment costs levelled off in 2001, but only because a certain number of investment programmes scheduled for the year were postponed to allow time for fuller preparation. The biggest single factor fuelling the cost increases is the constant upgrading of treatment techniques designed partly to expand the possibilities of recovery and partly to minimise the environmental impact of treatment. Expanded sorting capacity, improved smoke scrubbing, the reduction of noise levels, the development of alternative forms of transport: all the equipment and new technical solutions installed over the past 10 years have had a direct influence on treatment costs.

An unprecedented pluri-annual investment budget

Syctom is planning for both the short and the medium term. By the end of 2002, Syctom must put in place the resources needed to comply with the provisions of the "Royal" law, and move towards an objective

of "zero untreated waste to landfill" for domestic waste other than residual waste. The specific nature of the Paris urban area makes it impossible to avoid landfilling some waste that is not residual waste. The proportion of such waste sent to landfill must be reduced to the strict minimum as from July 2002, under the provisions of the law. In the medium term, i.e. looking to 2003-2007, Syctom will intensify its efforts to

impact of waste treatment.

On 19 December 2001 the Syctom board voted for an unprecedented pluri-annual investment budget of €640 million net (FF4.2 billion), to ensure that domestic waste in the Paris urban region will be treated in accordance with the objectives set in 1992 by the "Royal" law and in accordance with the public service obligations to which Syctom is subject. ■



Transporting clinker by rail to the Saint-Ouen centre.

expand treatment capacity. Sorting centre capacity is to be extended by around 250 000 tons by the creation of 10 sorting centres. Syctom is also to introduce a new treatment process in the form of methanisation; 215 000 tons of waste will be treated by 2005. Lastly, Syctom will pursue its policy of developing innovative techniques with the construction of a 20 000-ton capacity vitrification plant for scrubber residues, as part of its ongoing concern to minimise the environmental

Material recovery targets

New sorting capacity:


- 250 000 tons (10 sorting centres);

a new treatment process (methanisation):

- 215 000 tons (2 centres);

control over environmental impacts:
smoke scrubbing,
alternative forms of transport,
recycling of smoke scrubber residues.

Waste treatment:



Major projects are under way or in the process of being launched that will enable Syctom to provide waste treatment in line with the requirements of the law and with the public interest. All these projects, which are scheduled to become operational by 2003/2007, are part of an overall plan to develop material recovery and organic recovery.

ISSÉANE, the new multi-process plant at Issy-les-Moulineaux

The Isséane project, launched by Syctom in 1998 and scheduled as part of the departmental plan for the elimination of domestic waste in the Hauts-de-Seine department, was declared a general interest project by the government on 6 March 2000. After being given the green light by the Environment Ministry and the Ile-de-France Regional Council, the project was approved by the municipal council of Issy-les-Moulineaux in July 2000. The building permit was issued in September 2000 and the operating licence in October of the same year, marking the completion of an administrative and regulatory procedure that was entirely justified in that it set a seal of approval on the project and created a broad consensus in its favour.

An appeal was launched against the project, however, coinciding with the start of work on the site and the opening of the accommodation centre providing all the infrastructure needed to house and cater for the 600 people supposed to be employed on site. Work will not be able to start on the next phase until 2002.

The future multi-process centre is scheduled to become operational in 2005 to replace the present plant on the quai Stalingrad, which is due for demolition after 40 years of good and faithful service. Isséane will consist of a **EfW plant (annual capacity 460 000 tons)** and a **sorting centre (annual capacity 55 000 tons)**. It will treat the domestic waste from 22 municipal councils and three Paris arrondissements, a population basin of over a million residents.

syctom-isseane.com

Syctom has set up a dedicated website, syctom-isseane.com, to keep the public fully informed about the Isséane project and follow the progress of work on site. The website attracted some 9 000 visitors in 2001.



Syctom projects



The Isséane site calendar

Syctom has followed an exemplary environmental approach to its Isséane project, with the aim of controlling environmental impacts at every level, from the transport of construction materials to the landscaping of the site into its environment, taking a holistic view of waste recovery. Designed to HEQ (High Environmental Quality) standards using insulating and noise-abating materials, for example, the centre will rely on the latest waste sorting and recovery techniques. It will also be equipped with the latest and most effective anti-pollution measures. All in all, Isséane will be a demonstration of political will combining with technological innovation to succeed in reconciling environmental protection and waste treatment at the heart of a highly urbanised area. ■

Environmental constraints apply at every level of the Isséane project, and in particular during the construction phase. All site construction materials and all construction waste will also have to be transported by river.



Architecture designed to blend into the urban environment.

A quality charter

No visible smoke-stack, no white smoke plume, no water released into the Seine, buildings buried up to 35 metres below ground to blend into the surroundings, soundproofed access to the plant, quality landscaping, the use of alternative modes of transport: every care has been taken to put environmental protection right at the heart of the Isséane project.

The quality charter was drawn up at the request of the municipal council of Issy-les-Moulineaux, and was jointly signed on 20 December 2000 by the mayor and by the President of Syctom. This 26-page document sets out the environmental protection and nuisance abatement conditions imposed at every stage of the construction and operation of the new centre and the demolition of the old plant. It covers every environmental aspect: noise, traffic, dust, visual impact, cleanliness, odours, water management, releases to atmosphere, etc. All these parameters were factored into reporting packages which are constantly monitored and made available to the public on the project website.

Sorting centres: an extra 250 000 A new treatment process -

Syctom's objective: to double sorting capacities by 2005, in line with the increase in selective collection.

The "Terres Vives" contract

The Ile-de-France region itself has no experience of domestic waste management. The special case of the Paris urban area, where it would be unreasonable to adhere strictly to the letter of the law on departmental devolution, has prompted the Ile-de-France Regional Council to offer its support to the municipal councils and to Syctom in particular in their efforts to modernise the management of domestic waste. The total aid granted by the Ile-de-France region in 2001 was €1.19 million.



Barge loading clinker at the Ivry-Paris XIII centre.

For Syctom, river or rail access to a site, reducing road transport and hence the release of exhaust gases, is now a decisive factor in determining the siting of a treatment centre.

The Nanterre sorting centre

The Nanterre centre, on the drawing-board since 1994 and written into the "Terres Vives" (living earth) contract to which Syctom, the Ile-de-France Region and ADEME have all signed up, is to open at the end of 2003 with annual sorting capacity of 40 000 tons. Construction work is due to begin at the end of 2002. The siting of the centre was dictated by environmental constraints and specifically to minimise road transport. The planned site lies on the banks of the Seine, so that sorted waste can be removed by barge from a 70-metre river dock. The overall cost of the project, excluding land purchase, will be €16.8m net. Under the terms of the "Terres Vives" contract, the Ile-de-France region will contribute 20% of the costs and ADEME 2%.

Eight sorting centres, four of which are to be sited in Paris

These proposals, all of which are at the study stage, are written into the Departmental Plan for domestic waste elimination. The proposed sites for the most part enjoy river or rail access, in order to minimise road transport. The four Paris sites under consideration are:

- Bercy (XII^e) – the former Danzas site
- Near the Issy-les-Moulineaux heliport (XV^e)
- Batignolles (XVII^e)
- Gare de Evangile (XVIII^e)

Another four centres outside Paris are also planned: one at Villejuif (Val-de-Marne) and three in the Seine-Saint-Denis department. The Isséane multi-process site at Issy-les-Moulineaux is to include a 55 000-ton sorting centre.

At a committee meeting held on 19 December 2001, Syctom representatives



Aerial view of the future Nanterre sorting centre.

tons of treatment capacity methanisation: 215 000 tons

voted for the construction of one or two methanisation centres in the Seine-Saint-Denis department, with a total capacity of 215 000 tons. A number of environmental factors were behind the choice of this new technique:

- first and foremost, the centres will reduce the quantity of untreated domestic waste still sent to landfill;
- the methanisation process will produce methane which can then be used either to generate electricity for urban heating or as a fuel in its own right;
- because organic material is returned to the soil, methanisation is the waste treatment process that conforms most closely to the natural carbon cycle;
- It therefore plays a part in reducing greenhouse gases and helps to preserve fossil fuel reserves.

The new plant, which will receive subsidies from the Ile-de-France Regional Council and from ADEME under the terms of the "Terres Vives" contract, should be operational by 2006. ■



Fermentation tubes.

What is methanisation?

Methanisation is a method of waste recovery which, although still fairly marginal in France, is destined to develop in the future. It relies on the decomposition of organic matter such as garden waste or "fermentable" waste such as food waste. This decomposition takes place in anaerobic conditions, i.e. in the absence of air. It produces biogas, which contains 60% methane, and "digestate" which can be used to make a high quality agricultural compost that can usefully replace mineral fertilisers. At present there is only one methanisation plant operating in France, in Amiens. It has an annual treatment capacity of 85 000 tons and has been in operation for some ten years. Another project is well under way in Varennes-Jarcy (Essonne), and should become operational in 2002. Elsewhere in France, around ten other projects are on the drawing board but are still at the preliminary studies stage.



The Varenne-Jarcy methanisation plant. Digesters.



Controlling

Syctom is relying on technology to reduce the sources of pollution or nuisance inherent in waste treatment activities.

Smoke scrubbing

Releases to atmosphere from EfW plants are subject to strict regulation which is constantly evolving towards ever more demanding constraints. The release thresholds currently applied are those laid down by the decree of 25 January 1991, with which all Syctom centres comply. Indeed, most releases from Syctom centres are well below accepted levels. Two events, however, prompted the syndicate committee in December 2000 to consider a major programme to upgrade the smoke scrubbing process at the Saint-Ouen centre (followed by the Ivry-Paris XIII centre in 2001): problems relating to dioxin emissions, and the issue of a new European directive in December 2000, applicable as from December 2005.

From the moment it becomes operational, the future Isséane centre will comply with the thresholds laid down in the new European directive. However, new measures to upgrade smoke scrubbing will be needed at both Ivry-Paris XIII and Saint-Ouen. Implementation is scheduled for 2004 for Saint-Ouen and 2005 for Ivry, and will bring both plants into line with the new regulations ahead of the deadline.

Earlier studies on the Ivry-Paris XIII centre had already been carried out in 1995 and in 1997 to reduce releases of regulated pollutants, to upgrade dioxin treatment and to treat nitrogen oxides. Technical problems, due in particular to the lack of available space, mean that further investment estimated at €36m net will be required.

At the Saint-Ouen centre, release thresholds set by the European directive will require the introduction of supplementary

The culture of innovation

Construction of a pilot smoke dechlorination system in 1986 at Issy-les-Moulineaux; the first mechanised sorting centre for bulky domestic waste and selective collection opened in France in 1993; the first clinker maturing plant experiment in 1995: Syctom has pioneered a number of technologies that have since been widely adopted.

This culture of innovation was illustrated yet again in 1995 with the introduction of clinker transport by barge from the Ivry-Paris XIII centre and by rail from Saint-Ouen in 2001.

Research into the vitrification of scrubber residues, which is looking particularly promising, should translate into practical application at the Saint-Ouen centre by 2005.

environmental impacts

treatment procedures, which will be possible in view of the space available. In addition to the present treatment lines, consisting of two electrostatic filters and smoke scrubbers, three basic washers and three catalytic converters will be added. The estimated cost of the operation is €34.20m net. The research work carried out in 2001 was devoted largely to drawing up a detailed preliminary plan. ■

Changes in regulations governing pollutant releases

The new European Directive EC/2000 1761 of 4 December 2000 imposes a significant reduction in all pollutants. It sets thresholds for cadmium, nitrogen oxides and dioxins.

Pollutant	Decree of 25/01/1991 (applicable in 1996)	European Directive Dec 2000 (applicable in 2005)
Dust	30	10
CO (carbon monoxide)	100	50
HCl (hydrochloric acid)	50	10
SO ₂ (sulphur dioxide)	300	50
NO _x (nitrogen oxides)	—*	200
Mercury (Hg)	0,2*	0,05
Cadmium (Cd)		0,05
Dioxins and furans	10 ng/Nm ³ **	0,1 ng/Nm ³

Values are given in milligrams per cubic metre of air, except for the dioxins and furans, which are given in nanograms per cubic metre of air. One milligram is equal to 0.001 g and 1 nanogram equals 0.000000001 g.

(*) The 1991 value for mercury and cadmium was an aggregate.

(**) Limit value imposed by the ministry.



The Ivry-Paris XIII centre.



The control room.

Priority given to alternative forms of transport

Alternative (non-road) forms of transport will eventually account for over half of Syctom's transport of materials or wastestreams.

Syctom also plays a part in the development of alternative fuels. A "Vehicle Natural Gas" (VNG) filling-station was introduced at the Ivry-Paris XIII at the end of 2001, so that waste collection trucks can fill up with this extremely low-polluting fuel.



The VNG filling-station at the Ivry-Paris XIII centre.

On 19 October 2001 Syctom switched to rail freight to transport clinker from the Saint-Ouen plant to the maturing centre at Saint-Ouen-L'Aumône in the Val d'Oise department, marking a new step forward in implementing a policy of using alternative methods of transport to the roads.

Alternative forms of transport – by river or by rail – contribute directly to environmental protection: by saving energy, reducing exhaust emissions and noise, reducing traffic congestion and the risk of accidents. Finding alternatives to road transport is a priority for Syctom, which every year handles a stream of over 900 000 tons of waste and materials leaving its various centres.

This alternative transport policy, first introduced in 1995 with the use of barges to

transport clinker by river from Ivry-Paris XIII to Lagny-sur-Marne, will continue with the opening of the new Isséane multi-process centre at Issy-les-Moulineaux. Preliminary studies have also been put in hand at all Syctom plants in service or in the pipeline. In accordance with the objectives of sustainable development, road transport, the most polluting form of transport, will eventually account for less than half of all Syctom's transport movements. ■



Transporting clinker by rail to the Saint-Ouen centre.

17 000 fewer trucks on the roads

Transporting the Saint-Ouen centre's annual production of 170 000 tons of clinker by rail replaced 60 return trips a day by 30-ton trucks, equivalent to around 17 000 trucks a year.

Apart from the energy savings involved, this move led to a significant reduction in emissions of carbon dioxide, carbon monoxide and nitrogen oxides. Even so, the operation required two years of preliminary research and € 1.87m in investments, subsidised by ADEME.

Fly ash vitrification

Recovery of pollutants from scrubber residues: a technological innovation with a long future ahead of it.

This project, which is scheduled for industrial application by 2005, is a major technological breakthrough. Scrubber residues are the residual wastes from EfW, in which most of the pollutants from domestic waste are concentrated. Until now, these scrubber residues have been stored in category 1 landfill sites at costs of around €300 per ton. Syctom has been working since 1995 on a project to recover the zinc and lead contained in these pollutants and then vitrify the ashes.

Before becoming a source of pollution, these heavy metals were once raw materials found in nature. They are used in the manufacture of a vast range of consumer products. Recovering them in the course of domestic waste treatment not only removes a potential source of pollution, but also preserves natural resources and saves storage costs. This project for the recycling of scrubber residues, which will deal with 11 063 tons of fly ash from the Saint-Ouen centre, is wholly in keeping with the aims of sustainable development. ■



The Villeparisis category 1 landfill site.

"Metal-bearing sludges" and "vitrificate"

The process developed by Syctom will produce two by-products: "metal-bearing sludges" and "vitrificate". From every 3 tons of metal-bearing sludges, 500 kg of zinc and lead can be recovered and re-used in industry. The vitrificate can be used as clinker or, at worst, can be disposed of on the same basis as demolition rubble in inert waste landfills.



The clinker conveyor belt at Saint-Ouen-l'Aumône.

Syctom is also actively involved in other research avenues: optimisation of the clinker maturing process in order to reduce constraints on its use, new outlets for recycled glass in the manufacture of recycled glass fibre slabs, automatic plastics and aluminium sorting systems to enhance sorting centre performances.

A duty of information and

In 2001, Syctom pursued and intensified its efforts to provide all users with even more accessible information, and to make transparency a reality.



Syctom centres its information campaigns on projects, current programmes, waste arisings and key targets: local residents, schoolchildren and teachers, local representatives, etc. Highlights of a year's work on providing information for all included information on the Isséane project, neighbourhood communication in the Saint-Ouen, Ivry-Paris XIII and Romainville collection zones, participation in waste treatment trade fairs, updating the newsletter, now entitled Syctom Magazine, and the creation and distribution of new teaching aids.

Working with the regional and specialist press

The first shipment of clinker by train from Saint-Ouen – presided over by Mr. Dagnaud, Chairman of Syctom, and by Mr. Alain Richard, deputy mayor of Saint-Ouen-l'Aumône and former Minister – provided an opportunity for Syctom to present its actions and its alternative transport policy to the press.

A large number of journalists were present to report the event, from TF1, France 3 Ile-de-France, Le Parisien, Le Figaro, Décision Environnement... Campaigns such as this, based on real actions that attract media attention, all help to inform the public. The press was also invited to the December 2001 Committee meeting in the course of which the general outlines of Syctom's investment policy were laid down for the new 2001/2007 term.



Isséane: an information campaign at grassroots level

Earlier communication campaigns had already sparked the local, national and international interest in Isséane that its architectural and technical quality deserve. This communication was further reinforced by the launch of a website designed specifically to present the new multi-process centre. Once recognition and image were fully established, 2001 was a year for grassroots information with the full implementation of the environmental charter signed in December 2000.

Information on the progress of work and results of the assessments required under the terms of the environmental charter are now available to the public online on the website. In addition, a local information and surveillance commission (CLIS) made up of municipal councillors, associations, government representatives and Syctom, has been

transparency

set up at Syctom's request. The CLIS offers a forum for exchange, dialogue and the movement of information required by law and, most importantly, offers local groups every opportunity to play their part in defending the interests of local residents and users.

Action in the community

The opening of an information pavilion on the site of the future Issy-les-Moulineaux processing centre and the distribution of over 100 000 copies of the newspaper (in Issy-les-Moulineaux itself, and to neighbouring municipal councils) in 2000 were also part of this grassroots information campaign aimed first and foremost at local residents and designed to meet their expectations and answer their questions. The work of the Local Information Mission (MILIDIS) has further extended the scope of the information campaign, in close association with the municipal services of Issy-les-Moulineaux.

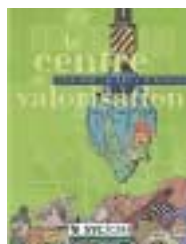
The information campaigns, which have been in place since 1999, also target the waste collection areas for the Ivry-sur-Seine, Saint-Ouen and Romainville processing centres. Here they take the form of "Open Days" aimed particularly at local residents, supported by targeted actions aimed at local councillors and ambassadors for selective collection in the different areas served by Syctom. These Open Days attracted over 2 000 visitors in 2001. In parallel, school visits in response to requests from teaching staff were organised throughout the year.



Over 2 000 visitors attended the Open Days in 2001.

A special focus on schoolchildren

Respect for the environment and an understanding of the challenges of the future and of good eco-citizenship are lessons that cannot be learned too early. Syctom is determined to play a part in this educational process, in which teachers are showing increasing interest. Syctom therefore designs and supplies teaching aids to help teachers introduce the issues of waste management into their classrooms as part of the school curriculum. In 2001, Syctom produced posters, two brochures, a teacher's manual and exercise sheets, which were distributed to 700 schools.





Institutional communication

A change of name and a change of layout for the main vehicle of institutional communication: Syctom, the Journal has become Syctom Magazine. The new look is matched by a shift in editorial content towards more concrete information and closer focus on realities on the ground and on events which steer waste management towards better environmental awareness. 18 000 copies of Syctom Magazine are printed and distributed to local councillors, institutional contacts and the press. Councils provide copies to users and local groups. The final element in this communication arsenal is Syctom Infos, which features information more closely connected with the internal functioning of the syndicate in the strictest sense and which is distributed by mail or fax. Syctom also publicises its work through a number of other communication opportunities: participation in trade fairs on environmental themes, advertising in the specialist press, etc. Syctom also joins forces with its partners to organise one-day information sessions targeted at specific audiences.

Syctom on the Internet

The Internet is an ideal means of providing users with a full range of permanently updated, rapidly accessible information. After a total make-over in 2000, Syctom's

institutional website now offers the visitor a panorama of all Syctom's activities, programmes and projects. The site has even won an award for the quality of its presentation and content. 41 041 visitors to the site at www.syctom-paris.fr were recorded in 2001.

Syctom also offers a second website, dedicated exclusively to the future Issy-les-Moulineaux treatment centre. A complete source of information in its own right, www.syctom-isseane.com attracted over 8 168 visitors in 2001, checking out the nature of the project and its progress. ■





Organisation & Services

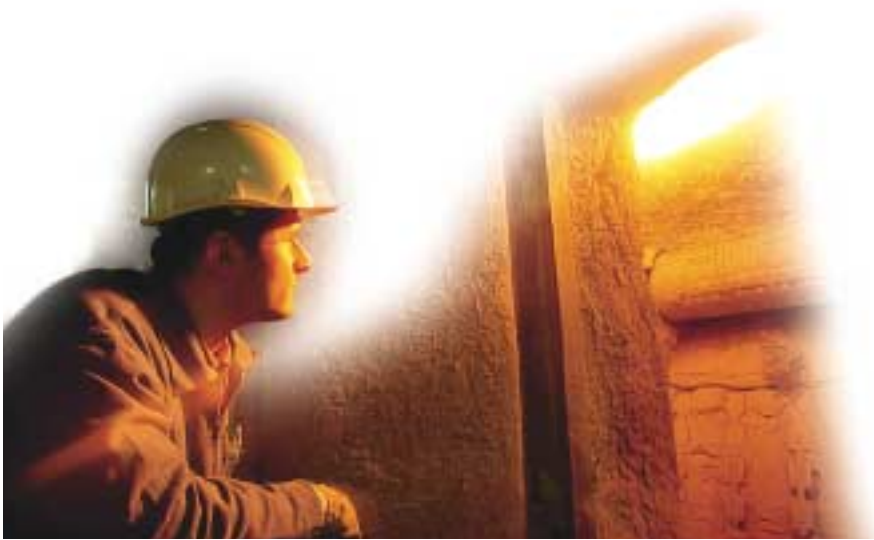
*Local councillors, professionals
and partners all committed
to a common objective:
domestic waste processing
and the environment.*





Organisation & Services

*Local councillors, professionals
and partners all committed
to a common objective:
domestic waste processing
and the environment.*



General organisation

38 elected representatives sit on the Committee. They decide the broad outlines that will subsequently be implemented by Syctom's 101 staff.



A meeting of the Syctom Committee.

A new management team

Members of the governing bodies of Syctom are replaced every six years, following the municipal elections.

On 16 May 2001, the 38 new Committee members representing the newly-elected municipal councils met in the offices of the Ile-de-France Regional Council, as practised for several years.

François Dagnaud was unanimously elected Chairman of Syctom.

As well as serving as 1st Assistant to the Mayor of the 19th arrondissement of Paris, François Dagnaud is also an assistant to the Mayor of Paris, with responsibility for general administration, human resources, decentralisation and relations with the arrondissement town halls.

The Committee and the Bureau

The Syndicate Committee is the plenary body at which all important decisions are made. It consists of 38 representatives elected by the member municipal councils. It determines syndicate policy, votes the budget and approves work projects. The Committee delegates its powers to a Bureau, consisting of 24 members, who elect the Chairman and Deputy Chairman. The 38 Committee members are made up as follows:

- 12 members are appointed by the City of Paris. These representatives share a number of votes equivalent to the total of all the other member votes below.
- 6 members are appointed by Sielom Hauts-de-Seine (a primary syndicate). Each representative has five votes, making a total of thirty.
- 1 member representing the municipal council of Chatenay-Malabry.
- 3 members are appointed by Sitom 93 (the primary syndicate for Seine-Saint-Denis). Each member has five votes, making a total of fifteen.
- 13 members representing the individual municipal councils of the Val-de-Marne department (the member for Le Perreux, a client municipal council, has observer status). Each representative has one vote.
- The 3 member municipal councils from the Yvelines each appoint one representative, who has one vote.

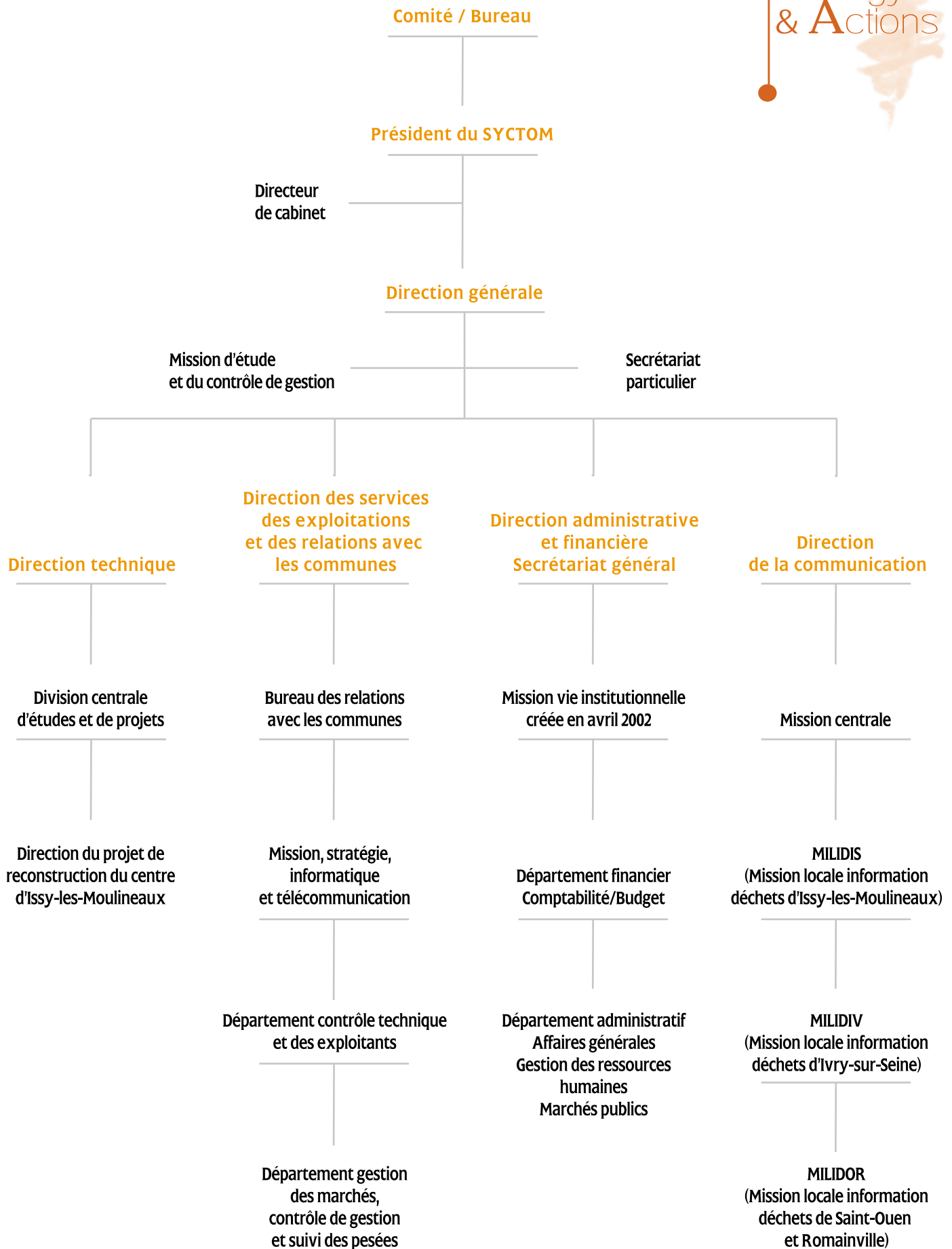
The Contracts Commission

The Commission operates under the authority of the Chairman, and consists of 5 members elected by the Committee. Its role, as laid down by the code of public contracts, involves checking the validity of bids and tenders before awarding contracts. The Contracts Commission meets in the presence of representatives of the Recette générale des finances (revenue office) and the Direction de la concurrence et de la répression des fraudes (competition and anti-fraud department), each of which has a consultative vote.

The departments

Syctom is staffed by a team of around 100, consisting for the most part of technical and administrative staff with civil servant status or seconded by the City of Paris, organised into five main divisions:

- General Division;
- Technical Division;
- Operations and Municipal Relations Division;
- Administration & Finance Division and Secretariat General;
- Communication Division. ■



Key Committee decisions

The main guidelines laid down by the Committee in 2001 covered transparency, diversification of processing methods, compliance with the objectives set by the law, and voting a budget scaled to Syctom's ambitions and the challenges to be faced.

a

fter its initial meeting on 16 May 2001, which was devoted to the election of the Chairman and the new members of the Bureau, the Committee next met on 19 June. This first real working session of the new mandate was an opportunity to take stock of the situation and to confirm certain technical aspects of the programmes for the new Issy-les-Moulineaux centre and the future sorting centre at Ivry-sur-Seine. The Committee also voted in favour of financing research into the feasibility of introducing alternative forms of transport at the Romainville centre.



700 000 tons of unprocessed residual waste

With the deadline of July 2002 fast approaching, Syctom elected to get to grips immediately with the problem of the 700 000 tons of residual waste which cannot at present be processed in its different centres. The Committee therefore decided to call for tenders in order to mobilise existing resources in the Ile-de-France region and to limit the use of landfill storage to a minimum.

At its 24 October meeting, the Committee confirmed Syctom's support for the regionalisation of waste processing in the Ile-de-France. It went on to vote in favour of an endorsement to the "Terres Vives" contract of €82m (FF538m), which will be spent on extending sorting capacity and developing a new methanisation process. The Committee also categorically expressed its determination to make transparency and greater efforts towards sustainable development central to all its actions.

In view of the scale of expenditure required, and following four years of price stability, the Committee decided to increase the service charge by 9.01%. The charge will therefore rise from €58.24 (FF382) to €63.11 (FF414) per ton processed, in addition to the membership fee which is set at €5.38 (FF35.52) per resident.

At its meeting on 19 December, the Committee voted a budget of €320m (FF2.1bn) to cover a sharp increase in operating costs, as part of a pluri-annual investment budget of €640m net (FF4.2bn) for the period 2002-2007. Syctom has thus clearly confirmed its commitment to complying with its obligation to provide a public service in accordance with the targets and deadlines laid down in 1992 by the "Royal" law.

THE COMMITTEE (June 2002)

Departements 92 ● 94 ● 93 ● 78 ● 75 ●



● **Anita ARDURA**
Member of the Bureau
Municipal Councillor
VITRY-SUR-SEINE



● **Jean-Pierre AUFFRET**
Deputy Chairman
SIELOM
Assistant to the Mayor of CLICHY



● **Nicole AZZARO**
Deputy Chairman
PARIS Councillor



● **Geneviève BERTRAND**
Member of the Bureau
PARIS Councillor



● **Jean-Marie BRETILLON**
Mayor of CHARENTON-LE-PONT



● **Danièle BRICHOT**
Member of the Bureau
Assistant to the Mayor of Stains
SITOM



● **Michel BULTE**
Deputy Chairman
PARIS Councillor



● **Christian CAMBON**
Mayor of SAINT-MAURICE



● **Séverine De COMPREIGNAC**
Assistant to the Mayor of
JOINVILLE-LE-PONT



● **Yves CONTASSOT**
Deputy Chairman
Assistant to the Mayor of
PARIS



● **François DAGNAUD**
Chairman of SYCTOM
Assistant to the Mayor
of PARIS



● **Emmanuel DOGNIN**
Expert
LE CHESNAY



● **Laurence DOUVIN**
Member of the Bureau
PARIS Councillor



● **Michel DUMONT**
Member of the Bureau
Councillor for PARIS



● **Pierre GATIGNON**
Deputy Chairman
PARIS Councillor



● **Jacques GAUTIER**
Deputy Chairman
SIELOM
Mayor of GARCHES



● **Jacques GHIENNE**
Member with observer status*
LE PERREUX



● **Pierre GOSNAT**
Deputy Chairman
Mayor of IVRY



● **Roger JOUBERT**
Deputy Chairman
Municipal Councillor
MAISONS-ALFORT



● **Brigitte KUSTER**
Member of the Bureau
PARIS Councillor



● **Laurent LAFON**
Mayor of VINCENNES



● **Jean-Yves LEBOUILLONNEC**
Mayor of CACHAN



● **Philippe LE BRIS****
Assistant to the Mayor of
de VILLEJUIF



● **Jérôme LE GUILLOU**
Assistant to the Mayor of
KREMLIN-BICETRE



● **Hervé MARSEILLE**
Member of the Bureau
SIELOM
Mayor of MEUDON



● **Jean-Paul MARTINERIE**
Assistant to the Mayor of
CHATENAY-MALABRY



● **Olivier MERIOT**
Member of the Bureau
SIELOM
Assistant to the Mayor of GENNEVILLIERS



● **Sophie MEYNAUD**
Deputy Chairman
PARIS Councillor



● **Gérard MEZZADRI**
Assistant to the Mayor of
VERSAILLES



● **Claude PERNES**
Deputy Chairman
Mayor of ROSNY
SITOM



● **Dominique PICARD**
Municipal Councillor
SAINT-MANDE



● **Michel PRA**
Municipal Councillor
GENTILLY



● **Gérard REY**
Deputy Chairman
PARIS Councillor



● **Alain ROUAULT**
Deputy Chairman
Chairman of SITOM
Assistant to the Mayor of SAINT-OUEN



● **Raymond ROUX**
Associate member of the Bureau
Assistant to the Mayor of
VELIZY-VILLACOUBLAY



● **André SANTINI**
Deputy Chairman
SIELOM
Mayor of ISSY-LES-MOULINEAUX



● **Nicolas SARKOZY**
Deputy Chairman
Chairman of SIELOM
1st Assistant to the Mayor of NEUILLY



● **Pierre SCHAPIRA**
Deputy Chairman
Assistant to the Mayor of PARIS



● **Daniel TOUSSAINT**
Mayor of VALENTON

(*) Le Perreux-sur-Marne has the status of former member and contributing municipal council since joining the community of the Nogent-le-Perreux urban area.

(**) Mr. Le Bris was replaced by Mr. Perillat in 2002.

Senior management

Senior management implements policy established by the Chairman and the Committee, coordinates the work of the Divisions, maintains relationships with institutional bodies and manages international relations.

Senior management is responsible for directing, organising and coordinating all the administrative and technical departments, which are grouped into four divisions. It determines management and operating strategy for the departments, with the help of a management and financial control department. At the initiative of the new Chairman, however, senior management saw its responsibilities evolve in three new directions in 2001:

- The organisation, with the Chairman's office, of study groups which include elected members to prepare for the changes awaiting Syctom in the short and medium term. These groups will focus on energy policy, recovery processes and international relations.

- Technical support for elected members who participate in and represent Syctom on the governing bodies of the various groups to which they belong: Observatoire des déchets d'Ile-de-France (Ordif), Association générale des hygiénistes et techniciens municipaux (AGTHM), Cercle national du recyclage (CNR), AMF (Association des Maires de France), International Solid Waste Association (ISWA)...

- Studies and forward-planning missions as part of working groups bringing together the main government bodies and departments involved in waste recovery and transport: the Ile-de-France region, Agence de l'environnement et de la maîtrise de l'énergie (ADEME), Port autonome de Paris, SNCF.

The object of these assignments is to prepare for the future, lay the groundwork for new policies and identify the synergies necessary for the ongoing improvement of waste management in the Paris urban region. Senior management activities have concentrated on two major challenges set by the Committee: the development of alternative forms of transport and the diversification of processing methods to include methanisation.

Syctom's expertise is internationally recognised

Syctom devoted considerable thought and energy in 2001 to studying shifts in international relations and the possible responses to different demands made upon Syctom either directly or through its member municipal councils, by major cities in other countries.



A visit by councillors from Berlin.

Syctom's expertise is widely recognised internationally, as witnessed by the fact that five of its executives have been nominated as experts to the European Commission.

In addition, its neutrality and independence of any private operator, its experience of project ownership and its culture of public service make Syctom a partner of choice for any major city seeking to improve or reinforce its domestic waste management. In 2001 Syctom assisted the city of Paris in setting up a cooperation project with the city of Moscow on waste organisation and processing, and on managing inter-municipal relations. ■

Private Secretary to the Chairman

The office of Private Secretary to the Chairman, an innovation introduced at the latest mandate, is a clear sign of the commitment of the newly elected members of the syndicate to serving the 90 member municipalities to the fullest of their abilities. While Syctom's task is to provide technical responses to the problems of waste processing, it is required to do so within guidelines and strategies laid down by elected representatives. As the Chairman's right-hand man, the Private Secretary acts as a permanent political contact who plays a part, within Syctom, in definition of and compliance with the undertakings made by the Committee and the Bureau on behalf of the public interest and sustainable development. ■



Technical Division

The Technical Division is responsible for the construction of the new Syctom centres and for installing new equipment and machinery made necessary by changing regulations, when these do not fall within operators' range of experience.

t

he Technical Division is therefore responsible for the implementation and successful commissioning of major Syctom projects which help to reinforce awareness of and make allowance for environmental factors and to associate waste processing firmly with considerations of sustainable development.

The Division was involved in every project, short and medium-term, reflecting Syctom's policies in 2001:

- **alternative forms of transport:** introduction of rail transport for clinker from the Saint-Ouen centre, operational since August 2001;

- **reduction in releases to atmosphere:** upgraded smoke scrubbing at Saint-Ouen and Ivry, scheduled to become operational before 2005;

- **creation of a new multi-process centre:** launch of work on the Isséane project to replace the present Issy-les-Moulineaux plant, scheduled to come on line in 2005;

- **expansion of waste sorting:**

construction of the future Nanterre sorting centre. The Technical Division has also launched preliminary studies into the construction of eight new sorting centres, four of which in Paris;

- **new processing methods:**

preliminary studies for the construction of two methanisation centres with a total capacity of 215 000 tons, to come on stream in 2006;

- **recovery of incineration by-products:**

studies into ways of improving clinker recovery processes and continued work on the introduction of scrubber residue recovery, scheduled for 2004.

Alternative forms of transport and the installation of smoke scrubbing help to diminish the environmental impact of waste processing and transport. The construction of Isséane, the opening of new sorting centres, the introduction of methanisation or the recycling of scrubber residues all bear witness to Syctom's commitment to developing material recovery and reducing the fraction of residual waste, including waste generated by EfW, that is sent to landfill.



The futur waste transfert centre of Nanterre.

Public acceptance of waste processing facilities

As it oversees the implementation of major Sycotom projects, the Technical Division must now take into account another factor which could potentially interfere with or hold up the completion of public service facilities. Local acceptance of a waste processing plant has become a strategic question for the future.

There is clearly much greater sensitivity on this subject nowadays, particularly in urban areas, on the part of local environmental protection groups and local residents. The phenomenon has prompted Sycotom to pay special attention to integrating project architecture into local settings and minimising environmental impacts, as well as stepping up information and cooperation campaigns. The environmental quality charter for the Isséane centre signed with the municipal council of Issy-les-Moulineaux is one illustration of this new priority.

Sycotom has thus intensified measures that highlight its dual commitment to transparency and environmental protection. Such change is a force for good when it creates a better understanding of projects in progress. It also has its limits, however, and it is important that all those concerned, including the State, should assume their responsibilities and stand firmly alongside Sycotom to shoulder the burden of this public service in the interests of the whole of society. ■



The information pavilion at the Isséane centre.



The environmental quality charter for Isséane, signed with the municipal council of Issy-les-Moulineaux.

Operations and Municipal

The Division, set up in 2000, is responsible for the smooth running of Sycdom centres. Its responsibilities cover all waste treatment processes, from the development of selective collection to the management of waste streams destined for recovery.



A new computer system devised to weigh vehicles was created by Sycdom.

The Operations and Municipal Relations Division is thus responsible for the definition, implementation and monitoring of operations contracts.

It lays down the rules and operating procedures which apply to each Sycdom centre – or each centre with which Sycdom works – and ensures that they are applied by operators.

Elsewhere, the Division's Public Contracts and Financial Control departments organise weighing on entry into all centres and then raise invoices for each member municipal council, in association with the IT department.

The Division also monitors quality criteria at every stage in processing, in order to improve control over the environmental impacts of operating centre activities.

The Division also works with municipal councils through the Municipal Relations Office to optimise the quality of incoming waste streams by encouraging the introduction of selective waste collection and raising their level of quality.

Its services are at the disposal of all Sycdom members to provide any information required on the use of the facilities.

The Division also plays a part in formulating waste stream management strategy, monitors waste elimination plans, formulates and monitors the IT master plan, reporting packages and quality certification.

Relations Division

Highlights of 2001 operations

- The December 2001 **renewal of the operating contract for the Ivry-Paris XIII sorting centre implied major** changes in the way the centre operates. In view of the virtual disappearance of the single-material stream of newspapers and magazines, operations will be redesigned to deal with a processing target of 40 000 tons of multi-material selective collection. Recommendations on health and safety rules have been reinforced and new procedures have been introduced to ensure the traceability of waste streams and increase the level of quality at every stage of centre operations. In addition, Syctom staff are now responsible for the management of incoming waste streams.

- After a one-year settling-in period, **the computerised weighing management programme (GIP-GIPSIE)** became fully operational in 2001. The new computerised system for weighing domestic waste collection and transport vehicles, specially designed to Syctom's specifications, provides accurate measurement and reporting of tonnages delivered by municipal councils. The programme forms part of an overall approach to improving weighing management (transparency and traceability) with a medium-term aim of ISO 9000 certification for the department and forwarding of data to municipal councils via Intranet.

- Much thought was again given in 2001 to action already under way **to improve the quality of selective collection**: enhancing awareness amongst potential ambassa-

dors for selective collection, improvements in regrading procedures to enable municipal councils to identify the origin of regraded waste batches and consider corrective actions aimed at users.

- The introduction of **"supplier quality assurance"** with paper manufacturer Chapelle Darblay, sole purchaser of newspaper and magazine paper for recovery, has been extended to all Syctom centre operators, as well as to the private centres used by Syctom. Its aim is to improve the quality of waste batches destined for recovery, and it requires each operator to implement a number of corrective actions in exchange for a relaxation in process controls on the material delivered.

- The Division has also continued to examine the possibility of **introducing office waste paper collection**. A sorting contract has been awarded and municipal councils which wish to offer an office waste paper collection service now have an operational processing sector at their disposal.

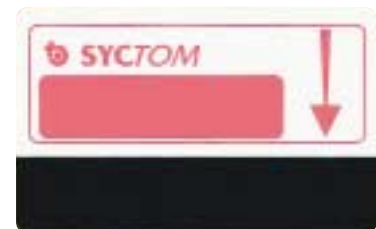
- **The selective collection monitoring committees** have also advanced with their work, which involves:

- overall monitoring of material recovery;
- pursuing the development plan for sorting centres in existence and scheduled for construction;
- monitoring the costs of selective collection using the Eco-Emballages scale.

Operator Generis was awarded ISO 14000 certification for the Romainville centre, a process launched in 2000. ■

Weight management

The computerised weighing system at the Ivry-Paris XIII centre.



Red indicates bulky domestic waste



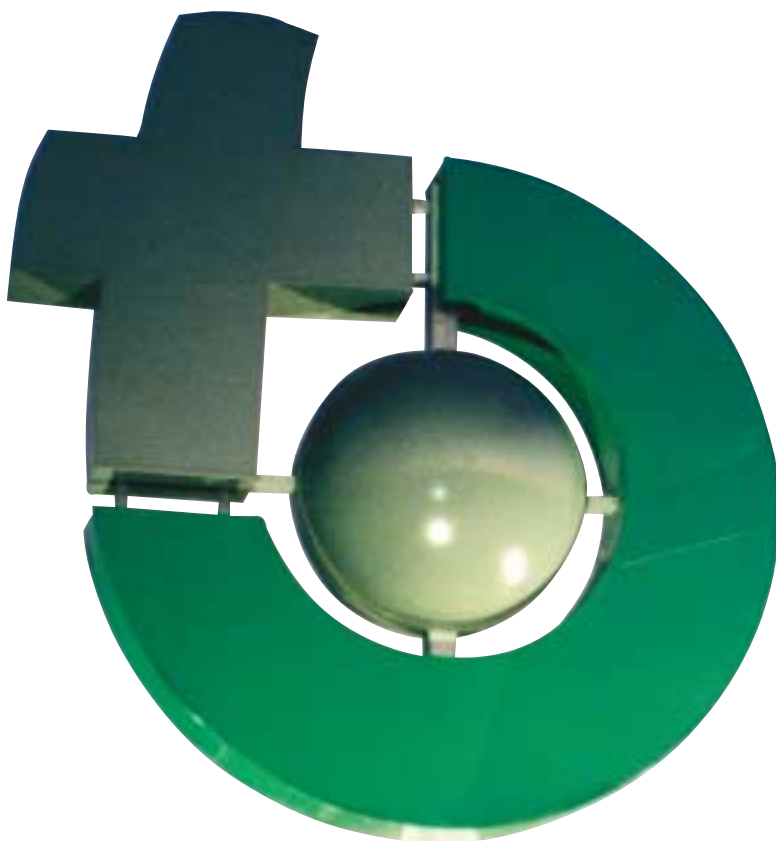
Green indicates selective collection.



Blue indicates domestic waste.

Secretariat General, Administrative & Finance Division

*Election of a joint technical committee, introduction of the 35-hour week
and increased vigilance on public contracts:
the keynotes of 2001 for a Division that handles the day to day
organisation and management of the syndicate.*



t

he Administrative & Finance Division is responsible for organising the Bureau, the Committee and the Contracts Commission meetings, but also for human resources, logistics, finance and public contracts.

Institutional life: the Syctom Committee met four times in 2001 to take the decisions necessary to the syndicate's continued existence and to carry on its duties over a change of mandate.

In the wake of the municipal elections of May 2001, Syctom elected a new Chairman, Mr. François Dagnaud, to take over from Mr. Philippe Dominati.

The Chairman's aim for this new mandate is to enable the elected executive body to function more collectively, implying more frequent Bureau meetings in preparation for Committee meetings, and the setting up of specific working groups. Reflecting the change, the Committee has created an "Institutional Life" mission (operational in 2002). The mission will report to the Secretary General rather than to the Administrative Division, and will be equipped to deal with the significant increase in administrative workload associated with the work of the syndicate.



Voting at a Sycotom Committee meeting.

Human resources: 202 days of training were provided for syndicate staff in 2001, in the form of 63 training courses (excluding preparation for qualifying examinations and induction training). 2001 also saw a significant innovation in the field of human resources with the organisation of an election to a joint technical committee. The committee, which represents the interests of both management and staff; devoted most of its time to the 35-hour week. The new departure the joint committee represents is part of a wider campaign to

rationalise human resources management, made necessary by an increase in the number of Sycotom staff.

Logistics: The Division is responsible for the management of all material and premises, and its internal task is to contribute to the smooth running of the departments.

Finance: The Finance Department manages the budget, collects the service charge from municipal councils and is responsible for cash management, the

negotiation of loans and collection of payments for services provided by Sycotom.

Public contracts: This is a particularly sensitive sector, in view of the sums of money concerned and the risks inherent in the projects. In accordance with the wishes of the new Chairman and Committee, management has devoted considerable thought to ways of tightening control over public contract procedures and increasing levels of vigilance in order to minimise the risk of legal disputes. ■

Communication Division

Advertising the work of Syctom more widely and putting a commitment to transparency into action.

the Communication Division deploys a range of resources and campaigns to inform Syctom's different audiences: municipal councillors, local authority technicians, users, journalists writing for the specialist press and, last but not least, the general public. This commitment to information and transparency is given concrete form in the wide range of information covering every field of Syctom's activity available online from the two websites: www.syctom-paris.fr and www.syctom-isseane.com. Around 20 000 visits to the two sites were recorded in 2001.

The Division also focused on two major projects in 2001: a complete editorial reworking of Syctom Magazine, the publication that replaced Syctom, Le Journal, and the production of teaching materials for schools. With a whole new approach to content and layout, making more space available for practical realities and the life of the municipal councils, Syctom Magazine has been redesigned to strengthen the spirit of inter-municipal cooperation that should govern relations with member municipal councils.

The Communication Division, working closely with the Technical Division, also has an essential role to play in the introduction of new processing centres, by ensuring greater understanding and acceptance of these projects by local residents, always very much concerned for the quality of their environment. ■

Public acceptance of waste facilities

Winning the acceptance of local residents for the installation of a waste processing facility is now a strategic question for the future. In urban areas there is clearly increased sensitivity on this subject on behalf of local environmental groups and public opinion. If this phenomenon is poorly understood and inadequately dealt with, it can drive the construction of new facilities out into the outer suburbs, thereby jeopardising the principle of proximity and leading inevitably to higher prices.

While inter-communal cooperation, architectural integration and controlled environmental impact are essential factors in gaining public acceptance, information plays an absolute crucial role. By offering detailed responses to the questions local residents raise, by increasing opportunities for contact and dialogue, by presenting projects in exhaustive detail, information and communication contribute to the successful introduction of those projects.

In this respect, the Isséane project at Issy-les-Moulineaux is aimed to become a landmark for its qualities of integration into the local setting, for the information resources deployed, and for the consideration it gives to users' needs and expectations.



Syctom's partners

Government departments, public bodies, local authorities and private companies: Syctom works with a number of different partners.

Ministry of Ecology and Sustainable Development

Establishes the principles of waste processing through directives and channels financial contributions through ADEME.

L'ADEME

Agence de l'environnement et de la maîtrise de l'énergie, a public environmental and energy conservation body operating under the auspices of the Environment, Industry and Research Ministries. Its task, as far as domestic waste is concerned, is to assist local authorities in setting up waste management infrastructure.

Ile-de-France region

A key partner for Syctom, and an advocate for the regionalisation of domestic waste management in the Ile-de-France region; the Regional Council also contributes towards Syctom's investments under the terms of the "Terres Vives" contract to which ADEME is also a party. The global amount of support provided for in the contract is €46m.

General Councils

They are involved in the formulation and revision of departmental waste elimination plans which set the guidelines for each department and the resources to be deployed in the management of domestic waste. Guidelines and resources which Syctom is obliged to adhere to.

Eco-Emballages

Eco-Emballages is a government-approved private company set up at government initiative in the wake of the decree of 1 April

1992. Its task is to provide support nationwide for the introduction and development of selective collection, sorting, recycling and EfW use of domestic packaging. Its target is to recover 75% of domestic packaging in 2002.

Companies manufacturing and selling packaged products for domestic consumption pay a levy to Eco-Emballages. The funds raised by the levy are then redistributed to local authorities to help finance

The firm of Chapelle Darblay, under contract to Syctom since 1995, pays stable prices to purchase the newspapers and magazines sorted in all Syctom sorting centres.

Private operators

All Syctom centres are operated by private companies, selected by competitive tendering. Syctom's three EfW centres are operated by TIRU S.A. ■

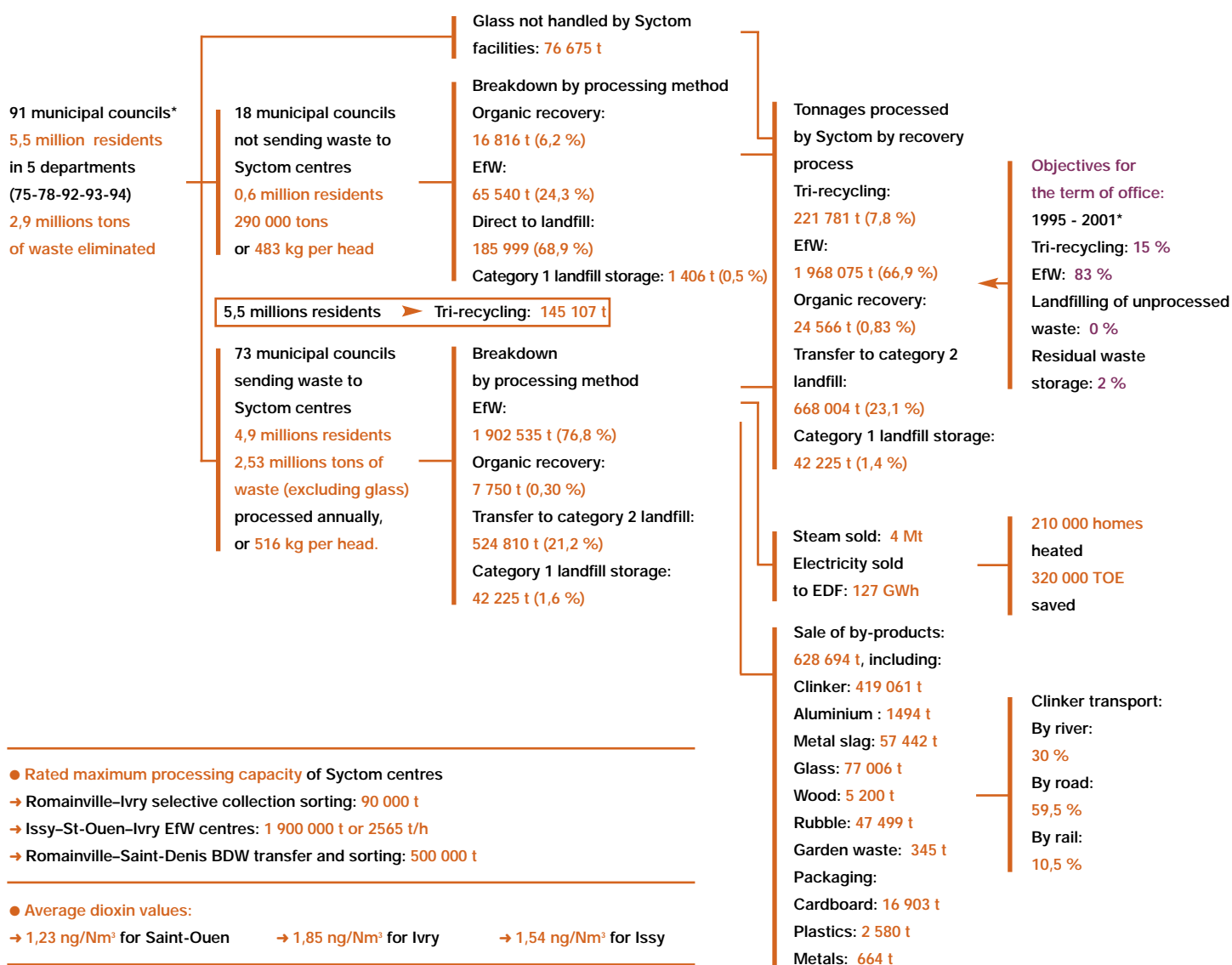


Région Ile-de-France



Key figures for 2001

● ANNUAL BUDGET: €272,4 M	→ Operations: €177,3 M	→ Debt: €141,6 M, equivalent to €26,5 per resident.
● SERVICE CHARGE: €67,53 per ton processed (incineration or landfill)	→ €0 per ton of selective collection	→ Average cost per resident: €31 annually
● HUMAN RESOURCES AT 31.12.2001 → SYCTOM : 101 staff Private processing centre operators: 614 staff	→ TIRU S.A. : 411	→ GENERIS : 132 → TIRVED : 71



(*) including one client municipal council.

● Over 3 045 000 residents covered by selective collection in 80 municipal councils (9 of which only partially covered).

● Centres planned for 2001-2007: €640 billion net.

→ 2000 - 2003, sorting centres: 30 to 40 000 t Paris : 4 centres : 125 000 t Seine-Saint-Denis : 3 centres : 30 000 t Val-de-Marne : 1 centre : 10 000 t

→ 1999 - 2005, Reconstruction of the Issy unit: 515 000 t, of which 55 000 t sorting capacity.

● Effective communication: some 7 000 visitors

● 3 Local Waste Information Missions (Issy, Ivry-Paris XIII, Saint-Ouen and Romainville)

● 2 websites: Syctom-paris.fr (41 041 hits) Syctom-isseane.com (8 618 hits)

● Syctom Magazine 18 000 copies of every issue

● An IT network and messagerie e-mail system.

Annual report on the cost and quality of the waste elimination public service

Financial and technical indicators for 2001

Number of municipal councils	90 + 1 client municipal council
Number of residents*	5 435 977
Number of residents sorting at source at 31 December 2001	3 045 248
Tonnages of waste delivered:	Domestic waste: 2 156 560 t
	Bulky domestic waste: 172 841 t
	NHIW: 53 181 t
Selective collection:	Newspapers/magazines: 25 291 t
	Multi-materials: 66 018 t
	Paper/cardboard: 171 t
	Garden waste: 7 750 t
	Glass: 76 675 t **
	Municipal waste centres: 55 950 t
Service charges:	Population fraction: 4,19 €
	Part tonnages : 58,24 €
Sums paid back in support for selective collection:	Multi-materials (excluding glass): 45,73 €/t
	Multi-materials (including glass): 30,49 €/t

Operating characteristics of the waste elimination service performed by the Syctom for the Paris urban area	Public contracts
Annual amount of spending by Syctom (actual operating budget):	€177,312 M
Total cost per ton of waste processed of BDW elimination services (processing or storage):	€68,75 (excluding adjustments)
Sources of financing	Contribution by municipal councils and support for selective collection
Global reduced VAT rate	11,70 %
Annual amount of main fee-paying services under contract	€136 974 M
Basis for calculation of the special charge for NHIW elimination	N/A
Income from access fees to processing and storage centres*	N/A
Detailed amounts of aid received from approved bodies:	
Investment support:	€9 387,5
Support per ton delivered:	€5,07 M
EFW:	€44,95 M

(*) Owned by the local authority as regards NHIW.

Income

2002 OPERATING BUDGET				
INCOME FROM OPERATIONS				
	BP 2000		BP 2001	
	Francs	Euros	Francs	Euros
Income from services and direct sales	1 045 000 000,00	159 309 223,01	1 067 600 000,00	162 754 570,80
Contributions, subsidies and shareholdings	15 000 000,00	2 286 735,26	36 000 000,00	5 488 164,62
Financial income	0,00	0,00	0,00	0,00
Total	1 060 000 000,00	161 595 958,27	1 103 600 000,00	168 242 735,42

2002 INVESTMENT BUDGET				
INVESTMENT INCOME				
	BP 2000		BP 2001	
	Francs	Euros	Francs	Euros
Borrowings	463 000 000,00	70 583 894, 98	660 496 000,00	100 691 966,09
Subsidies	0, 00	0,00	5 500 000,00	838 469,59
FCTVA	12 500 000,00	1 905 612,72	4 800 000,00	731 755,28
Depreciation of fixed assets	92 000 000,00	14 025,31	95 000 000,00	14 482 656,64
Operating transfer (self-finance)	68 700 000,00	10 473 247,48	20 000 000,00	3 048 980,34
Total investment income	636 200 000,00	96 988 064,77	785 796 000,00	119 793 827,94



Director of publication: François Dagnaud
Editors in chief: Patrick Lefebvre/Malik Salemkour
Communication Department: Patrick Clément
Editorial Secretary: Cécile Jean
Design and production: Pema 2b - Tél. : 01 41 43 83 00
Editor: Christian Lopez
Novembre 2002

Photo credits: SYCTOM ; C. Abron ; D. Raux ; J.-P. Ney ; H. Schwarzbach/Argus/Bios.