



**Activity  
report  
2016**

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2016 was a year of intense activity for Sycatom. With the birth of the Metropolis of Greater Paris, we had to amend our statutes on two occasions, in other words, as many times as in our thirty years of existence. The first time was to integrate the metropolitan status of Paris and the creation of public territorial bodies. The second was to record the dissolution of SYELOM and SITOM93, historical partners who had contributed significantly to what Sycatom is today. And we adopted a new governance, modernised and balanced, with the establishment of the new Syndicate Committee and its 90 delegates on 26 January 2017.

Despite this institutional upheaval, Sycatom's major projects made notable progress. This is reflected in our investment programme. In Ivry-sur-Seine, after six months of intensive consultation, we obtained the agreement of the National Commission for Public Debate (CNDP) to continue the project without the need for a new public debate. In Romainville, our approach of co-construction with local elected representatives paved the way for an ambitious vision for the future of the site. In Saint-Ouen, the urban integration project of the incineration centre entered the preliminary studies phase and the building permit application was filed.

These structural projects, combined with the dynamic adaptation of our sorting centres to the extension of sorting instructions, gave an impetus to our "zero non-recovered waste" policy. And the reduction in the quantities of waste landfilled in 2016 strengthened us in this dynamic process, fostering renewable energy, a circular economy and a sustainable city.

For this, we made innovation our spearhead. A useful innovation, for the protection of the environment, for the citizen, for the French industry. An innovation in terms of both technology and method. This is fully in keeping with the work we are doing alongside our member local authorities to promote the acceptability of our facilities, to advance selective collection, with the deployment of eco-facilitators, and support experiments in the separate collection of food waste. This is also in line with the partnerships strengthened in 2016. Together with the neighbouring waste processing syndicates, to pool and optimise the means of waste treatment at the metropolitan level. Together with the other Urban public services of Greater Paris, both in research and development projects for new recovery solutions and in international cooperation.

For the future is also played out on this scale. As the leading European public operator, Sycatom has every legitimate right to share its expertise beyond its territory of action, to promote an efficient public waste treatment service invested in energy transition: by participating in the reflection on the prospects of the French waste management model, by welcoming more and more foreign visitors and delegations to our facilities, by contributing to major international events. Yesterday at the COP22, today at the International Exhibition of Astana to present the energy of the future.

**Hervé MARSEILLE**

Vice-President of the Senate  
Senator of Hauts-de-Seine  
Mayor of Meudon - Grand Paris Seine Ouest  
Chairman of Sycatom, the metropolitan agency for household waste

# NEW TERRITORY, NEW GOVERNANCE

Syctom's governance changed with the creation of the Metropolis of Greater Paris and its twelve territories (Paris and eleven public territorial bodies) on 1<sup>st</sup> January 2016) and with the dissolution of the two primary syndicates, SYELOM and SITOM93, on 31 December 2016. The Syndicate Committee now has 90 delegates.

**12**  
MEMBER TERRITORIES OF SYCTOM  
11 territories of the Metropolis of Greater Paris and the Versailles Grand Parc Agglomeration Community

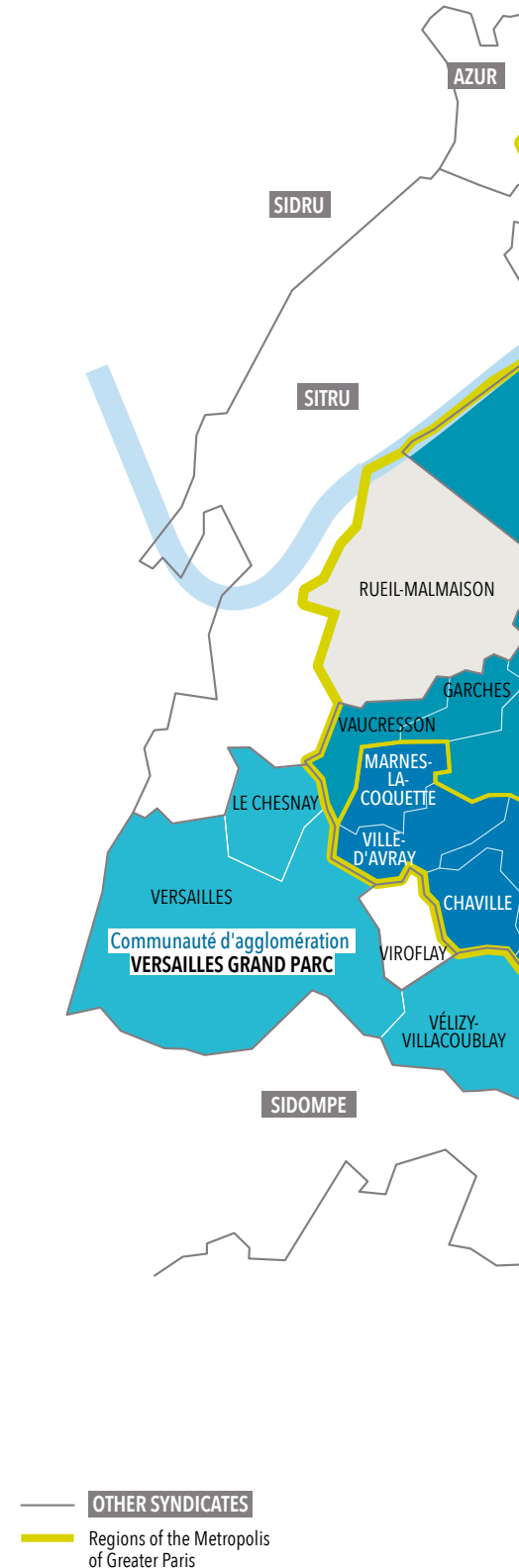
**84**  
MUNICIPALITIES IN SYCTOM'S TERRITORY

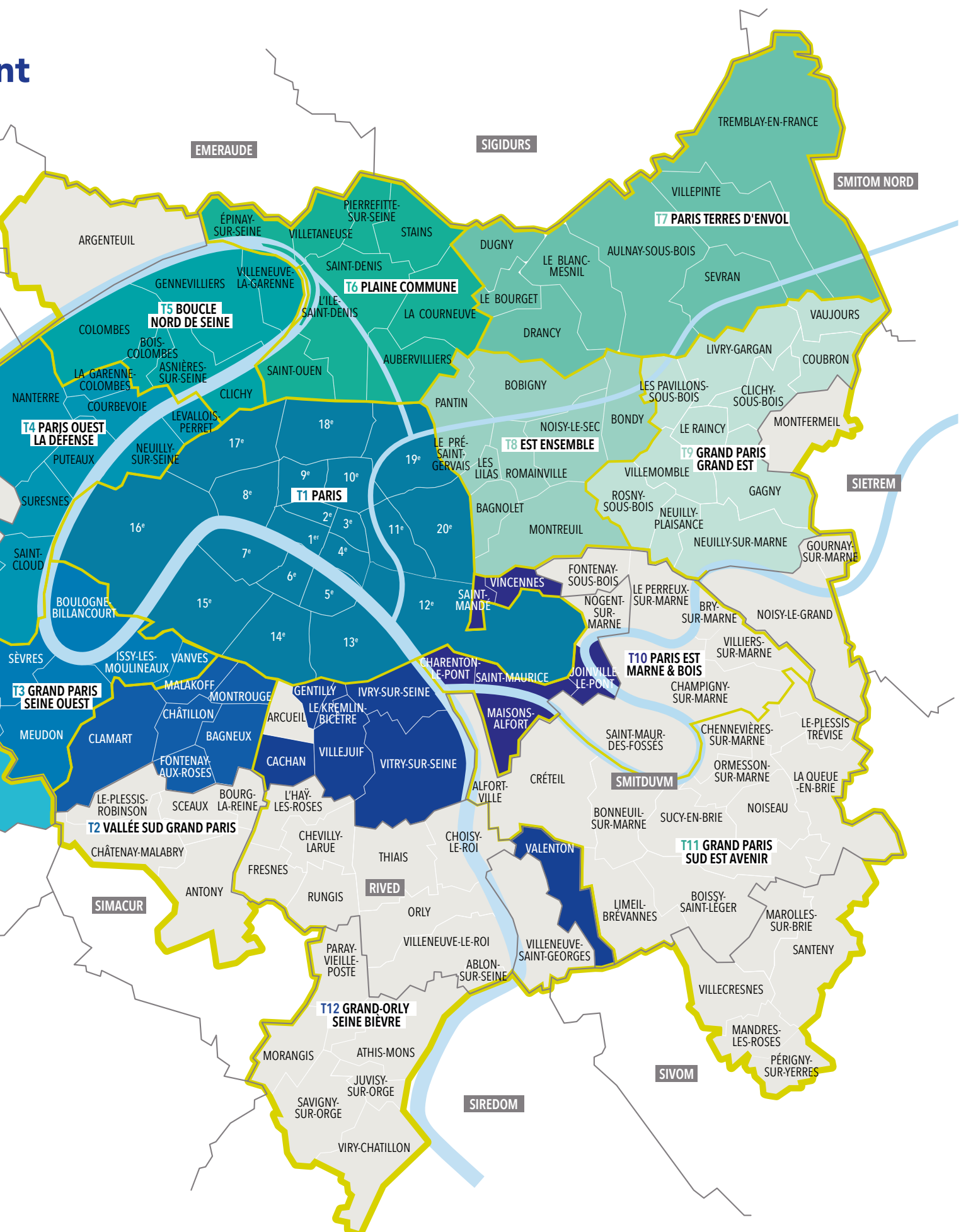
**5.8**  
MILLION INHABITANTS  
i.e. nearly 9% of the French population  
*Estimation based on the last known census*

**90**  
DELEGATES  
representing Syctom's member territories

## Syctom's territory and its environment

AS AT 1<sup>ST</sup> JANUARY 2017







# Syctom's elected officials

AS ON 26 JANUARY 2017

Since January 26, 2017, Syctom has been administered by a Syndicate Committee composed of 90 local elected representatives representing the territories of Metropolis of Greater Paris and the Versailles Grand Parc Agglomeration Community.

- It defines the syndicate's policy, votes on its budget, decides on investments and the management methods used.
- It rules on membership and withdrawal requests from local authorities.
- It elects the Board members and the members of the Tender Committee.



**Hervé Marseille**  
Vice-President of the Senate  
Senator of Hauts-de-Seine  
Mayor of Meudon  
**Grand Paris Seine Ouest**  
Chairman of Syctom

## VICE-PRESIDENTS



**Mao PENINOU**  
Deputy Mayor of Paris  
**City of Paris**



**Karina KELLNER**  
Municipal councillor of Stains  
**Plaine Commune**



**Jacques GAUTIER**  
Mayor of Garches  
**Paris Ouest La Défense**



**André SANTINI**  
Former minister  
MP of Hauts-de-Seine  
Mayor of Issy-les-Moulineaux,  
**Grand Paris Seine Ouest**



**Laurent LAFON**  
Mayor of Vincennes  
Regional councillor of Île-de-France  
**Paris Est Marne & Bois**



**François DAGNAUD**  
Mayor of 19<sup>th</sup> arr. of Paris  
**City of Paris**



**Jean-Pierre SCHOSTECK**  
Mayor of Châtillon  
**Vallée Sud Grand Paris**



**Philippe BOUYSSOU**  
Mayor of Ivry-sur-Seine  
**Grand Orly Seine Bièvre**



**Philippe BRILLAUD**  
Mayor of Chesnay  
Departmental councillor of Yvelines  
**Versailles Grand Parc**



**Corinne VALLS**  
Mayor of Romainville  
Vice-President of the Departmental Council of Seine-Saint-Denis  
**Est Ensemble**



**Fouad EL KOURADI**  
Deputy mayor of Aulnay-sous-Bois  
**Paris Terres d'Envol**



**Anne SOUYRIS**  
Councillor of Paris  
**City of Paris**



**Jean-Pierre BOYER**  
Deputy mayor of Rosny-sous-Bois  
**Grand Paris Grand Est**



**Jean-François LEGARET**  
Mayor of the 1<sup>st</sup> arr. of Paris  
Regional councillor of Île-de-France  
**City of Paris**



**William DELANNOY**  
Mayor of Saint-Ouen  
**Plaine Commune**

## BOARD MEMBERS



**Olivier MERIOT**  
Deputy Mayor of Gennevilliers  
**Boucle Nord de Seine**

Recording secretary



**Catherine BARATTI-ELBAZ**  
Mayor of 12<sup>th</sup> arr. of Paris  
**City of Paris**



**Christiane BARODY-WEISS**  
Maire de Marnes-la-Coquette  
**Grand Paris Seine Ouest**



**Hervé BÉGUÉ**  
Councillor of Paris  
**City of Paris**



**Jean-Didier BERTHAULT**  
Councillor of Paris  
**City of Paris**



**Florence BERTHOUT**  
Mayor of 5<sup>th</sup> arr. of Paris  
Regional councillor of Île-de-France  
**City of Paris**



**Samuel BESNARD**  
Deputy Mayor of Cachan  
**Grand Orly Seine Bièvre**



**Jorge CARVALHO**  
Deputy Mayor of Villejuif  
**Grand Orly Seine Bièvre**



**Bernard CACACE**  
Deputy Mayor of Raincy  
**Grand Paris Grand Est**



**Éric CESARI**  
Deputy Mayor of Courbevoie  
**Paris Ouest La Défense**



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Councillor of Paris  
**City of Paris**



**Florence CROCHETON**  
Deputy Mayor of Saint-Mandé  
**Paris Est Marne & Bois**



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Deputy Mayor of Aubervilliers  
**Plaine Commune**



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Councillor of Paris  
**City of Paris**



**Nicole GOUETA**  
Mayor of Colombes  
Departmental Councillor of Hauts-de-Seine  
**Boucle Nord de Seine**



**Jérôme COUMET**  
Mayor of 13<sup>th</sup> arr. of Paris  
**City of Paris**



**Marie-Rose HARENGER**  
Deputy Mayor of Noisy-le-Sec  
**Est Ensemble**



**Éric HELARD**  
Councillor of Paris  
**City of Paris**



**Christian LAGRANGE** <sup>(1)</sup>  
Delegate Municipal Councillor of Lilas  
**Est Ensemble**



**Patrick TRÉMÈGE**  
Councillor of Paris  
**City of Paris**

<sup>(1)</sup> In place of Alain PÉRIÈS

## T1 • PARIS

### REPRESENTATIVES OF TERRITORIES



**Jean-Noël  
AQUA**  
Councillor  
of Paris



**Pierre  
AURIACOMBE**  
Councillor  
of Paris



**Hélène  
BIDARD**  
Deputy  
Mayor  
of Paris



**Pascale  
BLADIER-  
CHASSAIGNE**  
Councillor  
of Paris



**Gyspie  
BLOCH**  
Councillor  
of Paris



**Julie  
BOILLOT**  
Councillor  
of Paris



**Claudine  
BOUYGUES**  
Councillor  
of Paris



**Galla  
BRIDIER**  
Councillor  
of Paris



**Frédérique  
CALANDRA**  
Mayor of 20<sup>th</sup> arr.  
of Paris



**Virginie  
DASPET**  
Councillor  
of Paris



**Maud  
GATEL**  
Councillor  
of Paris



**Christophe  
GIRARD**  
Mayor of 4<sup>th</sup> arr.  
of Paris



**Antoinette  
GUHL**  
Deputy Mayor  
of Paris



**Marie-Laure  
HAREL**  
Councillor  
of Paris



**Halima  
JEMNI**  
Councillor  
of Paris



**Véronique  
LEVIEUX**  
Councillor  
of Paris



**Jean-Louis  
MISSIKA**  
Deputy  
Mayor of Paris



**Anne-  
Constance  
ONGHENA**  
Councillor  
of Paris



**Daniel  
VAILLANT**  
Former minister  
MP of 17<sup>th</sup> district  
Councillor of Paris



**Alexandre  
VESPERINI**  
Councillor  
of Paris

### ALTERNATES

**Eric AZIERE**  
Councillor of Paris

**Marinette BACHE**  
Councillor of Paris

**Nicolas  
BONNET-OUALDJ**  
Councillor of Paris

**Geoffroy BOULARD**  
Councillor of Paris

**Pierre-Yves  
BOURNAZEL**  
Councillor of Paris  
Regional councillor of  
Île-de-France

**Jacques BOUTAULT**  
Mayor of 2<sup>th</sup> arr.

**Anne-Charlotte  
BUFFETEAU**  
Councillor of Paris

**Emmanuelle  
DAUVERGNE**  
Councillor of Paris  
Regional councillor of  
Île-de-France

**Nathalie FANFANT**  
Councillor of Paris

**Rémi FERAUD**  
Councillor of Paris

**Léa FILOCHE**  
Councillor of Paris

**Afaf GABELOTAUD**  
Councillor of Paris

**Pierre GABORIAU**  
Councillor of Paris

**Jean-Jacques  
GIANNESINI**  
Councillor of Paris

**Frédéric HOCQUARD**  
Councillor of Paris

**Thierry HODENT**  
Councillor of Paris

**Christian HONORE**  
Councillor of Paris

**Pénélope KOMITES**  
Deputy Mayor  
of Paris

**Thomas LAURET**  
Councillor of Paris

**Catherine LECUYER**  
Councillor of Paris

**Didier LE RESTE**  
Councillor of Paris

**Sandrine MEES**  
Councillor of Paris

**Etienne MERCIER**  
Councillor of Paris

**Valérie MONTANDON**  
Councillor of Paris  
Regional councillor of  
Île-de-France

**Nicolas NORDMAN**  
Councillor of Paris

**Annick OLIVIER**  
Councillor of Paris

**Atanase PERIFAN**  
Councillor of Paris

**Karen TAIEB**  
Councillor of Paris

**Sergio TINTI**  
Councillor of Paris

**François VAUGLIN**  
Mayor of 11<sup>th</sup> arr.

**Yann WEHLING**  
Councillor of Paris  
Regional councillor of  
Île-de-France

**Mercédès ZUNIGA**  
Councillor of Paris

## T2 • VALLÉE SUD GRAND PARIS

### REPRESENTATIVES OF TERRITORIES



**Jacqueline  
BELHOMME**  
Mayor of Malakoff



**Benoît  
BLOT**  
Deputy  
Mayor  
of Plessis-Robinson



**Philippe  
RIBATTO**  
Deputy Mayor  
of Fontenay-aux-Roses

### ALTERNATES

**Carole HIRIGOYEN**  
Deputy Mayor  
of Montrouge

**Serge KEHYAYAN**  
Deputy Mayor  
of Clamart

**Alain LE THOMAS**  
Deputy Mayor  
of Bagneux

**Patrice RONCARI**  
Deputy Mayor  
of Clamart

## T3 • GRAND PARIS SEINE OUEST

### REPRESENTATIVES OF TERRITORIES



**Pierre CHEVALIER**  
Municipal councillor of Ville-d'Avray



**Pierre-Christophe BAGUET**  
Mayor of Boulogne-Billancourt  
Departmental Councillor of Hauts-de-Seine  
President of Grand Paris Seine Ouest

### ALTERNATES

**Christine BRUNEAU**  
Deputy Mayor of Boulogne-Billancourt

**Florence de PAMPÉLONNE**  
Deputy Mayor of Meudon

**Bernard ROCHE**  
Deputy Mayor of Vanves

**Joëlle SUEUR**  
Deputy Mayor of Issy-les-Moulineaux

## T4 • PARIS OUEST LA DÉFENSE

### REPRESENTATIVES OF TERRITORIES



**Eric BERDOATI**  
Mayor of Saint-Ouen  
Departmental Councillor of Hauts-de-Seine



**Sophie DESCHIENS**  
Deputy Mayor of Levallois-Perret  
Regional councillor of Île-de-France



**Jean-Christophe FROMANTIN**  
MP of Hauts-de-Seine  
Mayor of Neuilly-sur-Seine

### ALTERNATES

**Jean-François DRANSART**  
Deputy Mayor of Garenne-Colombes

**Bernard GAHNASSIA**  
Deputy Mayor of Puteaux

**Amirouche LAIDI**  
Deputy Mayor of Suresnes

**Dominique LEBRUN**  
Deputy Mayor of Saint-Cloud

**Alexis MARTIN**  
Deputy Mayor of Nanterre

**Bertrand PERCIE du SERT**  
Deputy Mayor of Levallois-Perret



**Norredine IZNASNI**  
Municipal councillor of Nanterre

## T5 • BOUCLE NORD DE SEINE

### REPRESENTATIVES OF TERRITORIES



**Marie-Do AESCHLIMANN**  
Deputy Mayor of Asnières-sur-Seine  
Regional councillor of Île-de-France



**Pascal PELAIN**  
Deputy Mayor of Villeneuve-la-Garenne



**Patrice PINARD**  
Deputy Mayor of Clichy-la-Garenne

### ALTERNATES

**Anne-Christine JAUFFRET**  
Deputy Mayor of Bois-Colombes

**Mohamed MAAZOUZI**  
Deputy Mayor of Villeneuve-la-Garenne

**Samuel METIAS**  
Deputy Mayor of Colombes

**Frédéric SITBON**  
Deputy Mayor of Asnières-sur-Seine

**Henri VINCENT**  
Deputy Mayor of Bois-Colombes

## T6 • PLAINE COMMUNE

### REPRESENTATIVES OF TERRITORIES



**Delphine HELLE**  
Municipal councillor of Saint-Denis



**Michel HOEN**  
Municipal councillor of La Courneuve



**Khaled KHALDI**  
Deputy Mayor of Villetaneuse

### ALTERNATES

**David CHAULET**  
Municipal councillor of Pierrefitte

**Jean-François MONINO**  
Deputy Mayor of Aubervilliers

**Denis REDON**  
Municipal councillor of Épinay-sur-Seine

**Christophe ROSE**  
Municipal councillor of Île-Saint-Denis

**Laurent RUSSIER**  
Mayor of Saint-Denis

## T7 • PARIS TERRES D'ENVOL

### REPRESENTATIVES OF TERRITORIES



**Jean-François BAILLON**  
Deputy Mayor of Sevran



**Alain DURANDEAU**  
Deputy Mayor of Tremblay-en-France



**Bernadette VANDENABELLE**  
Deputy Mayor of Drancy

### ALTERNATES

**Michel ADAM**  
Deputy Mayor of Dugny

**Denis DESRUMAUX**  
Municipal councillor of Bourget

**Claude MARIOT**  
Municipal councillor of Villepinte

**Thierry MEIGNEN**  
Mayor of Blanc-Mesnil



## T8 • EST ENSEMBLE

### REPRESENTATIVES OF TERRITORIES



**Laurent ABRAHAMS**  
Deputy Mayor  
of Montreuil



**Jacques CHAMPION**  
Deputy  
Mayor of Romainville



**Stéphane WEISSELBERG**  
Deputy  
Mayor of Romainville

### ALTERNATES

**Mireille ALPHONSE**  
Municipal councillor  
of Montreuil-sous-Bois

**Asma GASRI**  
Deputy Mayor of  
Romainville

**Laurent JAMET**  
Municipal councillor of  
Bagnolet

**Hervé LEUCI**  
Municipal councillor of  
Bobigny

**Olivier STERN**  
Municipal councillor of  
Montreuil

## T9 • GRAND PARIS GRAND EST

### REPRESENTATIVES OF TERRITORIES



**Pierre-Etienne MAGE**  
Deputy Mayor  
of Villemomble



**Pierre-Yves MARTIN**  
Mayor of  
Livry-Gargan

### ALTERNATES

**Christine GAUTHIER**  
Deputy Mayor of  
Pavillons-sous-Bois

**François MARTINACHE**  
Deputy Mayor  
of Neuilly-Plaisance

**Michel RINGRESSI**  
Deputy Mayor  
of Vaujours

**Ludovic TORO**  
Mayor of Coubron

## T10 • PARIS EST MARNE & BOIS

### REPRESENTATIVES OF TERRITORIES



**Jean-Luc CAEDDU**  
Deputy Mayor  
of Maisons-Alfort



**Jean-Jacques GRESSIER**  
Deputy Mayor  
of Joinville-le-Pont



**Alain GUETROT**  
Deputy Mayor  
of Saint-Maurice

### ALTERNATES

**Éric BENSOUSSAN**  
Deputy Mayor of  
Vincennes

**Christian CAMBON**  
Senator-Mayor of  
Saint-Maurice

**Jean-Pierre CRON**  
Deputy Mayor of  
Charenton-le-Pont

**Thomas MURGIA**  
Municipal councillor of  
Saint-Mandé

**Stéphan SILVESTRE**  
Municipal councillor of  
Joinville-le-Pont

**Frédéric TURPIN**  
Municipal councillor of  
Maisons-Alfort



**Marie-Hélène MAGNE**  
Deputy Mayor  
of Charenton-  
le-Pont

## T12 • GRAND-ORLY SEINE BIÈVRE

### REPRESENTATIVES OF TERRITORIES



**Stéphanie DAUMIN**  
Mayor of  
Chevilly-Larue



**Monique RAFFAELLI**  
Municipal  
councillor of  
Kremlin-Bicêtre



**Patrick RATTER**  
Deputy Mayor  
of Valenton

### ALTERNATES

**Françoise BAUD**  
Mayor of Valenton

**Elisabeth HUSSON-LESPINASSE**  
Municipal councillor of  
Gentilly

**Alain LIPIETZ**  
Municipal councillor of  
Villejuif

**Ludvig LOISON-ROBERT**  
Municipal councillor of  
Kremlin-Bicêtre

**Robert ORUSCO**  
Municipal councillor of  
Cachan

**Jean-Emmanuel ROUGIER**  
Municipal councillor of  
Vitry-sur-Seine

**Agnès TEYSSERON**  
Municipal councillor of  
Vitry-sur-Seine



**Bamadi SANOKHO**  
Deputy Mayor  
of Gentilly



**Romain ZAVALLONE**  
Municipal  
councillor  
of Ivry-sur-Seine

## VERSAILLES GRAND PARC • AGGLOMERATION COMMUNITY

### REPRESENTATIVES OF TERRITORIES



**Magali ORDAS**  
Deputy Mayor  
of Versailles



**Luc WATTELLE**  
Mayor of Bougival

### ALTERNATES

**Violine CHARPENTIER**  
Municipal councillor of  
Chesnay

**Frédéric HUCHELOUP**  
Deputy Mayor  
of Vélizy-Villacoublay

**Marc TOURELLE**  
Maire de Noisy-le-Roi

# AN AGILE AND INNOVATIVE INDUSTRIAL TOOL

Syctom's facilities are in constant evolution, whether to optimise waste recovery, to address the new sorting instructions or to better integrate into their environment. Following the dissolution of SYELOM, Syctom now manages an additional 31 waste reception centres in its territory.



10 processing units  
and 1 network of 31 waste reception centres



## ISSÉANE



1.45 million inhabitants  
482,134 tonnes incinerated in 2016  
Authorised capacity: 510,000 t  
Operator: TSI



700,000 inhabitants  
23,099 tonnes received in 2016  
Operating capacity: 30,000 t  
Operator: TSI



## IVRY / PARIS XIII



1.55 million inhabitants  
656,151 tonnes incinerated in 2016  
Authorised capacity: 730,000 t  
350,000 t for the new project, i.e. -50%  
Operator: IP13



855,000 inhabitants  
28,363 tonnes received in 2016  
Operating capacity: 36,000 t  
Operator: SITA

Reconstruction by 2023



3

## NANTERRE



1.25 million inhabitants  
 38,824 tonnes received in 2016  
 (27,064 tonnages Sycotom;  
 11,760 tonnages SITRU)  
 Operating capacity: 40,000 t  
 Sorting of small metal packaging since  
 2015  
 Operator: Véolia Propreté



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## PARIS XV



550,000 inhabitants  
 18,844 tonnes received in 2016  
 Operating capacity: 20,000 t  
 Adaptation to the extension of sorting  
 instructions to all plastic and metal pack-  
 aging by 2018  
 Operator: COVED



5

## SAINT-OUEN



1.45 million inhabitants  
 591,837 tonnes incinerated in 2016  
 Authorised capacity: 650,000 t  
 Operator: TIRU

Modernisation and urban integration  
 works by 2021



6

## ROMAINVILLE



1.3 million inhabitants  
 43,476 tonnes received in 2016  
 Operating capacity: 45,000 t  
 Sorting of plastic packaging and small  
 metal packaging since 2015  
 Operator: VALORAM



+ 1 transfer centre for residual house-  
 hold waste  
 Operator: GENERIS from  
 01/03/2016

Project for requalifying the centre  
 by 2024



7

## SEVRAN



350,000 inhabitants  
 17,449 tonnes received in 2016  
 Operating capacity: 17,000 t  
 and application to increase  
 the capacity to 20,000 t  
 Sorting of plastic packaging  
 since 2012  
 Modernisation of the centre in 2014 and  
 its optimisation for extended sorting  
 instructions in 2016  
 Operator: IHOL



\*

## PARIS XVII



Commissioning planned for 2019  
 Operating capacity: 45,000 t  
 Centre adapted to the extension  
 of sorting instructions to all  
 plastic and metal packaging

# WHEN WASTE BECOMES A RESOURCE

Syctom's ambition, labelled *Zero waste Zero wastage territory*, is to recycle the maximum amount of waste produced locally. To achieve this, the sorting centres are gradually being adapted to the sorting of all plastic and metal packaging. Experiments are being launched in new streams, the foremost being food waste. The facilities are optimised to produce even more energy. Everything contributes to the same objective: zero non-recovered waste.

**2,287,219 t**  
of waste processed by  
Syctom in 2016

## RESIDUAL HOUSEHOLD WASTE



**1,890,929 t**

processed in incineration centres with energy or landfill recovery

**-0.5%**

between 2015 and 2016

## HOUSEHOLD AND PAPER PACKAGING



**181,110 t**

collected door-to-door or by voluntary drop-off

**+0.9%**

between 2015 and 2016

## BULKY OBJECTS



**200,356 t**

waste collected door-to-door or in waste reception centres, illegal dumps, and waste from technical services

**+11.8%**

between 2015 and 2016

## TOTAL AMOUNT OF WASTE LANDFILLED



**153,542 t**

household waste and sorting rejects

**-27.9%**

between 2015 and 2016



# Recovery performance



## MATERIALS RECYCLED AND SORTING CAPACITIES

**31%**

WASTE RECYCLED  
WASTE  
into new materials  
(plastic, paper, steel,  
aluminium, glass, etc.)  
or into clinkers

**+11%**

INCREASE  
in the capacities of  
Syctom centres  
in 2015-2016  
*Romainville/  
Paris XV/Sevran*

**3**

CENTRES ADAPTED  
TO THE EXTENDED  
SORTING  
instructions (all plastic  
packaging and/or all  
metal packaging)

**2021**

ADAPTATION  
of all  
of Syctom's  
sorting centres



## ENERGY RECOVERY

**63%**

WASTE  
RECOVERED  
as steam and  
electricity

**42.7%**

OF HEAT  
TO THE CPCU  
NETWORK  
supplied by Syctom

**2,708** GWh

OF STEAM PRODUCED BY  
SYCTOM'S ENERGY  
recovery units



## FOOD WASTE

**2**

EXPERIMENTS  
IN THE SEPARATE  
COLLECTION  
of food waste  
*Paris and Ivry-sur-Seine*

**2**

OPERATIONAL  
RECEPTION SITES  
provided to member  
local authorities to  
process food waste  
(methanisation)

**2025**

FOOD WASTE  
will be sorted  
at the source by all  
the producers

**1,055** t

OF FOOD WASTE  
from food markets  
and administrative  
restaurants  
and diverted from  
incineration in 2016

# EXEMPLARY ENVIRONMENTAL AND SOCIAL RESPONSIBILITY

In 2016, Syctom embarked on a 360° social and environmental responsibility approach with the determination to achieve excellence in all areas: acceptability of its facilities and safety of its equipment, conservation of resources and international model.

## Facilities in the heart of cities



2

EQUIPMENT AT THE HEART OF ECO-DISTRICTS:  
Docks of Saint-Ouen and Clichy-Batignolles in Paris

€190 M

WILL BE INVESTED for urban integration and the transition to the dry treatment of flue gas in the Saint-Ouen centre

365

DAYS OF CONTINUOUS CONTROL of atmospheric emissions from energy recovery units

9

CAMPAIGNS TO MEASURE atmospheric deposition using the "Owen" gauge system and biomonitoring (moss and lichen)

31%

NON-ROAD TRANSPORT 360,000 t of waste transported by water

## A social ambition



6,808

DIRECT AND INDIRECT JOBS GENERATED BY SYCTOM'S ACTIVITY

1

COMPREHENSIVE SAFETY APPROACH ENGAGED BY SYCTOM IN 2016

1,316

VISITORS TO THE FACILITIES

## Ambitious recycling targets



**-50%**

OF TONNAGE OF WASTE LANDFILLED  
by 2025 (objective of the Energy Transition for  
Green Growth Act)

**+10,000 t**

OF SELECTIVE COLLECTION

## Resources conserved



**744,000 t**

OF NEW  
RAW MATERIALS  
produced by recycling  
in 2016

**300,000 t**

OIL-EQUIVALENT avoided  
per year

**1,131,088 t**

OF CO<sub>2</sub>  
emissions avoided  
(compared to 793,240 t of CO<sub>2</sub>  
emitted) through recycling  
and energy recovery activities  
in 2014

## An international model



**€1 M**

PER YEAR DEVOTED  
TO PROJECTS AIMED AT  
IMPROVING WASTE  
MANAGEMENT  
in developing countries as part  
of the 1% solidarity scheme

**16**

PROJECTS  
SUPPORTED  
since November  
2015

**COP22**

PARTICIPATION  
IN THE MARRAKECH  
CLIMATE CHANGE  
CONFERENCE

**18**

FOREIGN  
DELEGATIONS  
received by  
Sycotm in 2016

# THE PUBLIC WASTE TREATMENT SERVICE

Driven by its public service mission, Syctom is playing a leading role in its territory, to promote exemplary waste management. By encouraging and funding the initiatives of member local authorities to sort more and produce less waste. By participating in the emergence of new streams, from collection to treatment. By deploying the investments necessary to face the challenges of tomorrow.

## Grants to local authorities



€6M

FOR THE PREVENTION,  
SELECTIVE COLLECTION AND MANAGEMENT  
OF FOOD WASTE  
with the 2015-2020 Support plan

€4.2 M

AIDS FOR MUNICIPALITIES  
THAT HOUSE  
THE FACILITIES

## A consolidated financial situation



€66 M

OF INVESTMENT  
TO CONTINUE  
THE PROJECTS  
UNDERTAKEN  
compared to €62 M in  
2015

-€35.8 M

OF DEBT REDUCTION  
COMPARED TO 2015  
i.e. -7.6%

€431.6 M

OF DEBT BY END OF 2016  
-35% since 2008



## A drop in pricing

**-3.5%**

decrease in fees  
for household waste  
and bulky objects between  
2015 and 2016

**5.6 €/pers.**

compared to 6.4 €/pers.  
in 2015

**-12%**

Decrease in the  
population share of fees  
between 2015 and 2016

## Pricing to promote recycling

HOUSEHOLD WASTE  
AND BULKY OBJECTS



**94 €/t**

SELECTIVE  
COLLECTION



**5 to 30 €/t**

depending on the tonnage  
collected

**free-of-cost**

for tonnages greater than  
those recorded in 2015

FOOD  
WASTE



**5 €/t**

## Subsidies to galvanise the residents

SELECTIVE COLLECTION  
for tonnages greater than those  
recorded in 2015



**20 to 50 €/t**

The bonus is applied depending on  
the sorting performance

FOOD  
WASTE



**30 €/t**

for an experimental period  
of 3 years (2016-2018) or  
collection undertaken by Syctom

# HIGHLIGHTS



## EARLY 2016

Launch of the firm phase to carry out preliminary studies for the urban integration project at the Saint-Ouen energy recovery centre, including diagnostic missions, pre-project studies and project studies.



## 18 FEBRUARY

**Inauguration of the new sorting line was in Romainville**, translating into increased performance to capture materials to be recycled and improved working conditions for sorters. With a processing capacity of 45,000 tonnes/year, this sorting centre is now Sycotom's largest.



## 31 MARCH

**SIAAP/Sycotom co-methanisation project: signature of a partnership protocol with the Caisse des Dépôts et Consignations** to strengthen the financial standing of the project, after the two syndicates signed a framework cooperation agreement, on 11 January 2016.



## 1<sup>ST</sup> APRIL

**Deployment of eco-facilitators** made available by Sycotom to local authorities as part of its 2015-2020 Support plan. The mission of these 28 agents trained and invested in the field: raising the awareness of residents, traders and businesses about the sorting and prevention of waste.



### 12 APRIL

**Project for capturing CO<sub>2</sub> from incineration flue gases at the Saint-Ouen centre: signature of the research and development contract with the research consortium led by SETEC Environnement, as part of the Exhibition for Île-de-France Mayors.**



### 2 JUNE

**Awards presentation for the Zero Waste Design contest**, organised in partnership with the Ile-de-France Region and ADEME. As part of the "Gardens, garden" show in the Tuileries, four student projects won prizes at this 4<sup>th</sup> edition on the theme of bio-waste reduction and management.



### 21 JUNE

**Seminar for Sycdom agents to update them on progress made in the projects underway**, to take stock of the advances made in work organisation in project mode, and to launch avenues of improvement. Objective: an increasingly efficient public waste treatment service.



### JUNE

**Blockade of the Ivry/Paris XIII centre for 3 weeks by agents and garbage collectors of the City of Paris opposing the bill on labour reform (El Khomri law). Flood risk management during the Seine flooding.**



# HIGHLIGHTS



**3-10 SEPTEMBER**

**Syctom's participation in Paris Design Week** at the Rotonde, for a "Design and upcycling" week with events and shows, exhibition of the projects participating in the Zero Waste Design Contest 2015-2016 and launch of the new edition on the theme of textiles.



**17 SEPTEMBER**

**Resumption of the Open Days in Isséane** as part of the European Heritage Days, after a long interruption in the wake of the Paris bombings. The centres in Sevran, Paris XV and Nanterre also opened their doors to the public in late 2016.



**31 AUGUST**

**Project at Ivry/Paris XIII: favourable decision of the CNDP for the continuation of the project** without further public debate, at the end of the 6 months of the 3<sup>rd</sup> phase of consultation, closed by a public information meeting on 5 July in Ivry-sur-Seine.



**12 SEPTEMBER**

**Meeting focussed on the international solidarity programme,** between the elected members of the International solidarity and cooperation committee and the beneficiary associations. This was an opportunity for exchanging ideas on the projects and to bring the stakeholders together after one year of cooperation.





### 12 NOVEMBER

**Side-event organised by the Sycdom at the COP22 in Marrakech**, during the "Cities and territories" day on the theme of the acceptability of waste treatment facilities. An opportunity for Sycdom to share its experience with an audience composed of local authorities, French and Moroccan elected representatives, NGOs, managers of public and private projects.

### 7 DECEMBER

**Launch of Sycdom's new website**, modernised and resolutely user-oriented, to provide transparent and efficient information, optimised service and better support for local authorities.

### 13 OCTOBER - 17 NOVEMBER

**Public enquiry into the proposed new sorting centre in Paris XVII.** In the pipeline: commissioning of a second sorting centre in 2019 in Paris, located in the Clichy-Batignolles eco-district.

## Institutional milestones following amendments to the Sycdom's statutes in 2016



### 24 MARCH 2016

Adoption of the new statutes following the creation of the Metropolis of Greater Paris on 1<sup>st</sup> January 2016 and the transfer of responsibility for waste management to the Public Territorial Bodies (EPT) that compose it. Renewal of the Syndicate Committee

### 29 SEPTEMBER 2016

New adoption of the amended statutes ahead of the dissolution of SYELOM and SITOM93, primary syndicates and Sycdom's historical partners.

### 31 DECEMBER 2016

Dissolution of SYELOM and SITOM93. Direct membership of the territories.

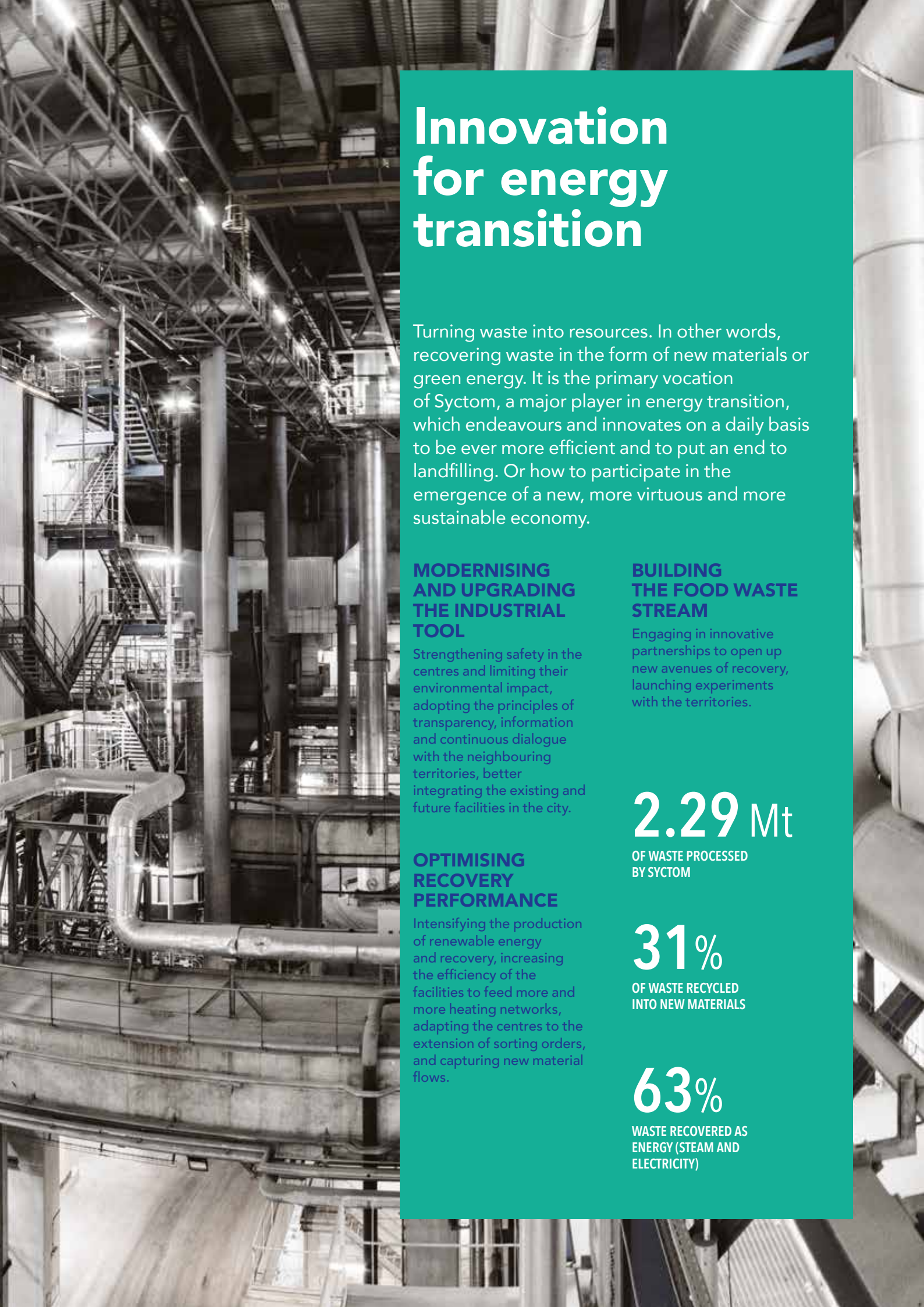
### 26 JANUARY 2017

Installation of the new Syndicate Committee, henceforth composed of 90 delegates, against 68 previously. Re-election of the Chairman and Vice-Presidents.







A black and white photograph of an industrial facility, likely a waste treatment plant, featuring a complex network of pipes, metal structures, and stairs. The scene is illuminated by overhead lights, creating a dramatic, high-contrast environment.

# Innovation for energy transition

Turning waste into resources. In other words, recovering waste in the form of new materials or green energy. It is the primary vocation of Sycptom, a major player in energy transition, which endeavours and innovates on a daily basis to be ever more efficient and to put an end to landfilling. Or how to participate in the emergence of a new, more virtuous and more sustainable economy.

## MODERNISING AND UPGRADING THE INDUSTRIAL TOOL

Strengthening safety in the centres and limiting their environmental impact, adopting the principles of transparency, information and continuous dialogue with the neighbouring territories, better integrating the existing and future facilities in the city.

## OPTIMISING RECOVERY PERFORMANCE

Intensifying the production of renewable energy and recovery, increasing the efficiency of the facilities to feed more and more heating networks, adapting the centres to the extension of sorting orders, and capturing new material flows.

## BUILDING THE FOOD WASTE STREAM

Engaging in innovative partnerships to open up new avenues of recovery, launching experiments with the territories.

**2.29** Mt

OF WASTE PROCESSED  
BY SYCTOM

**31%**

OF WASTE RECYCLED  
INTO NEW MATERIALS

**63%**

WASTE RECOVERED AS  
ENERGY (STEAM AND  
ELECTRICITY)



# A powerful waste processing tool

## Continuous safety improvement

### **Towards a comprehensive risk management plan**

Sycotom maintains high standards to guarantee the reliability and performance of its facilities. In 2016, safety was enshrined as the cornerstone of its CSR approach and notably paved the way for the development of a comprehensive industrial risk management plan. A consultancy and assistance contract was launched for this purpose, to be awarded in March 2017. At the same time, within the ICSI (Institute for an industrial safety culture), Sycotom participated in the “Safety culture and industrial process safety” working group.

Sycotom’s commitment to safety issues translated into numerous interventions in the centres. All the audits and work on machinery compliance were completed, including metalwork in Sevrans and Isséane. In Isséane, operations to improve the clinkers handling line continued for completion by May 2017. With the same concern for safety and improvement of working conditions, the process carried out in the unloading docks was pursued in the Saint-Ouen

centre. The aim was to standardise good practices in all the facilities, by involving operators, territories and waste collectors.

In terms of fire safety, Sycotom embarked on a recruitment process to acquire this specific competence. At the Paris XV and Saint-Ouen sites, an upgrade of the fire detection and protection system is scheduled. In the Ivry-sur-Seine centre, several interventions are scheduled for 2017.

### **Strengthened information and monitoring systems**

Going beyond the safety of people and the preservation of the environment and equipment, greater emphasis is placed on the monitoring and transparency of data. The information system continued to be modernised in 2016, in particular with the introduction of the new weighing management software, initiated in 2015. With a rollout scheduled for 2017, this year was devoted to the development of the IT tool and the training of users.



## Increasingly better integrated facilities

### More “urban” facilities

In 2016, Syctom reaffirmed its commitment to the urban integration of its current and future facilities. The transformation project at Ivry/Paris XIII combines the HQE (high environmental quality) approach, HQAC (high artistic and cultural quality) approach and an efficient flue gas treatment. The future sorting centre in Paris XVII in the Clichy-Batignolles eco-district offers a high-quality, environmentally unobtrusive architecture and landscaping, with vegetated surfaces, renewable materials, acoustic treatment and other mechanisms designed to limit nuisance. Finally, the urban integration project in Saint-Ouen, whose preliminary studies began in 2016, aims to make the future plant a symbol of the new eco-district of the Docks. In short, the priority is to strike the perfect balance

between the functionality of the building, architectural aesthetics and environmental preservation.

### Ongoing dialogue with the territories

Anxious to promote the acceptability of its facilities, Syctom implements each of its projects as part of a process of proximity and dialogue with the local authorities and stakeholders. A case in point was the project to transform the centre in Ivry/Paris XIII (see box). The approach will be adopted for the project to develop the Romainville site, which was the subject of intense discussions with the various stakeholders in 2016 (see box on page 26). In late 2016, Syctom submitted an application to the CNDP to organise a preliminary consultation in the second half of 2017, accompanied by a guarantor.



*I am confident about the success of this urban integration project, which will reduce the nuisance caused by the movement of garbage dumpsters, improve the functionality of buildings and considerably enhance the aesthetic appearance, for a better visual comfort of the neighbourhood. Everyone is looking forward to the almost complete disappearance of the plume of smoke.*

#### William Delannoy

Mayor of Saint-Ouen (T6),  
Vice-President of Syctom

#### IVRY/PARIS XIII

## Successful consultation



The year 2016 was devoted to a new stage in the consultation process and to the continuation of studies for the transformation of the Ivry/Paris XIII centre. Recognised as a public interest project in February, extensive discussions were conducted to integrate the objectives of the Energy Transition for Green Growth Act. Its revised version was subjected to a third

phase of consultation, culminating in a decision by the CNDP in favour of the continuation of the project, without the need for further public debate. The 6 months of exchanges made it possible to progress towards a consensus on the modifications envisaged. While confirming the definitive abandonment of methanisation on site and of the mechanical-biological sorting (MBS)

process, they foresee an increase in the capacity to receive bio-waste, the creation of a sorting-preparation process for solid recovered fuels (SRF), as well as an increased revegetation of the architectural envelope of the facility. To support the transformation of the centre, a contract was launched for the implementation of the HQAC approach.



*We understand the value of this 3rd phase of consultation to prepare the public enquiry, with the support of a guarantor. Only a high-quality consultation, involving all the stakeholders and partners, is likely to bring about a shared project. The goal is to find common levers so that the project addresses the issues that we identify collectively.*

#### Philippe Bouyssou

Mayor of Ivry-sur-Seine (T12),  
Vice-President of Syctom



●  
**+15,000 t**  
 SORTING CAPACITY FOR THE NEW PROPOSED  
 CENTRE AT ROMAINVILLE/BOBIGNY

●  
**1.50 €/t**  
 SUBSIDIES TO MUNICIPALITIES HOUSING A  
 SYCTOM CENTRE

### Project at Romainville-Bobigny: a dynamic of co-construction

The challenge is daunting: develop a project for 2023, to meet the needs of the Northeast quarter of the metropolis. Right from the programme's development phase, Syctom wished to associate the local elected representatives in a dynamic of co-construction. On the basis of intensive exchanges and initial lessons drawn from the preliminary studies, the outlines of the project have been

defined. The capacity of the sorting centre will be increased from 45,000 to 60,000 tonnes/year to support the extension of sorting instructions. Future collections of food waste will also be received on the site. The waste reception centre will also serve as a recovery centre. Finally, several solutions are taking shape concerning the crucial issue of residual household waste (RHW). Among them:

The maintenance of the centre's reception and transfer function, supplemented by a preparation step intended to supply SRF to Syctom's energy recovery centres. In addition, the urban integration of the future site will receive the most attention, in harmony with the local development projects. The transport of materials by water, via the Ourcq canal, will be preferred.



*This co-construction approach is essential for the success of this project. Throughout the reflections, the town of Romainville will be very attentive both to the content and the method used by Syctom. TO this day, Syctom has partnered closely with the town of Romainville to carry the project forward and this must continue in the interest of all.*

**Corinne Valls**  
 Mayor of Romainville (T8),  
 Vice-President of the  
 Departmental Council 93,  
 Vice-President of Syctom

## Two key words: limitation of impact and transparency

In 2016, Syctom maintained its proactive policy to measure and monitor the impacts of its facilities. As every year, atmospheric releases from the incineration plants are monitored constantly by the operators and specific inspections were carried out by Syctom, beyond the legal obligations. In addition, the partnership with Airparif to monitor air quality in the vicinity of the centres continued. This ambient air quality measurement system complements the measurements of atmospheric deposition by Owen gauge and biomonitoring (analysis of mosses and lichens).

The limitation of environmental impacts also involves the use of alternative transport, always favoured by Syctom. This is evidenced by the future projects: in Romainville, water transport will be predominant, as in Ivry/Paris XIII through the creation of a tunnel linking the

facility to the Seine; in the future sorting centre in Paris XVII, railway transport will be used for the disposal of paper/cardboard.

More broadly, Syctom strives to reduce all sources of nuisance. This year, the odour emission monitoring system in the vicinity of the Saint-Ouen centre was strengthened (*see box*). At the same time, dialogue with local authorities and residents continued through the process of environmental quality charters and the system of sentinels, who are groups of volunteer residents.

The latest illustration of this strategy of transparency and information: the new Syctom website was launched in late 2016. Ergonomic and modern, it offers a user-oriented interface and new features. An extranet dedicated to the local authorities will soon supplement it.

### ENERGY RECOVERY UNIT IN SAINT-OUEN

## Odour nuisances under control



Previously located in an industrial sector, the energy recovery centre in Saint-Ouen is today in the heart of an eco-district that brings together housing and offices. Such an environment implies strong measures in terms of the monitoring and limitation of nuisance, particularly odour. On this issue, Syctom wished to go further in 2016 by having experts carry out a

characterisation of the sources of odours. In addition, a consultation was launched to improve the diagnostics and implement corrective measures. At the same time, it was decided to set up a system for eco-facilitators to carry out olfactory measurements. Finally, an initial contact with the local residents was made to launch a procedure for reporting nuisances.



# Producing renewable and recovered energy

## Energy recovery at full throttle

### Delivering an ever increasing supply of steam

In the energy recovery centres, the heat generated by waste incineration is used to produce electricity, which covers the needs of the plants. The steam generated is also used to feed the CPCU networks (Paris Urban Heating Company). In 2016, Sycotom continued its efforts to optimise the performance of its facilities and provide more and more energy. As part of the continuous improvement efforts, work is being done to increase the operational availability of incineration centres. This will have a positive impact on the quantities of waste treated and the energy produced.

At the same time, the new prices negotiated between Sycotom and the CPCU were applied as of January 2016. With an increase of €5 per tonne of steam, this revaluation better reflects the selling price on the market. Moreover, Sycotom has committed to provide an annual



### Towards an optimisation of turbine-generator units

*In 2016, Sycotom focused on optimising and securing turbine-generator units that convert heat from incineration into electricity. Among these new safety systems: installing a safety check valve on the medium-pressure extraction and*

*replacing the bypass valves at Ivry/Paris XIII; reprogramming the pressure regulation thresholds and installing safety sensors at Isséane. This ensures the plant's energy self-sufficiency and optimises the revenues from sale to EDF.*



*After the accidents on the turbine-generator units in the incineration plants at Ivry/Paris XIII and Isséane in 2014, we decided to review the working conditions of these machines in order to improve their reliability and ensure energy production. The aim is to optimise the energy performance of these facilities.*

**Frédéric Roux**  
Manager of treatment plants at Sycotom

●  
**€1M**  
DEDICATED TO THE  
OPTIMISATION OF  
TURBINE-GENERATOR UNITS

●  
**+50,000 t**  
INCREASE IN INCINERATION  
CAPACITY IN ISSÉANE

minimum threshold of renewable or recovered energy (EnRR) to the CPCU, in order to consolidate its energy mix.

### Boosting the efficiency of facilities

The development of energy recovery performance is also reflected in Sycotom's new

projects. This is the case with the work at the Saint-Ouen centre to switch to the dry treatment of incineration flue gases by 2019, which should promote the optimisation of the facility's energy efficiency. At Ivry/Paris XIII, the new energy recovery unit will follow the same strategy: boost performance by producing more energy for each tonne of waste treated.

## ENERGY RECOVERY

### Isséane, a justified capacity ramp-up



*When I contributed to the construction of Isséane, I had to overcome many oppositions. But my perseverance paid off, because this plant is beautiful, well integrated into the urban space, efficient in terms of waste treatment, and it even attracts professionals from all over the world. The increase in its incineration capacity in 2016 has therefore been perfectly executed thanks to such an innovative facility, which consolidates Sycotom as a leading player in sustainable development.*

#### André Santini

Former minister,  
Deputy Mayor  
of Issy-les-Moulineaux,  
Vice-President of Sycotom



The Isséane centre benefited from an increase in incineration capacity from 460,000 to 510,000 t/year.

This ramp-up is intended in particular to anticipate the shutdown phases due to the work planned at the Saint-Ouen facility. Sycotom, by ensuring the continuity of the public waste treatment service, intends to avoid the use of landfills.

Eventually, Isséane will produce more steam to supply the CPCU's heating network, which provides heating to 80,000 housing-equivalents.

## Increasing outputs

### Preparing the waste for better combustion

In line with the objectives of the Energy Transition for Green Growth Act, Sycotom is moving towards the production of Solid Recovered Fuel (SRF) from residual household waste. This high calorific material (as the wet fraction is extracted) significantly increases the amount of heat produced from one tonne incinerated. That is why the project for a new energy recovery unit in Ivry/Paris XIII intends to give priority to SRF to feed the incinerator.

### Optimised supply

The results of the 2015 call for expression of interest (CEI) enabled Sycotom to enrich its reflection on urban waste logistics (*see box*). With the same determination to improve the regularity of supply to its centres, it carried out tests on the incineration of bulky object sorting rejects, hitherto systematically destined for landfilling. Higher electricity and steam production was thus recorded and the lower calorific value (LCV) analyses confirmed a high energy potential for this type of waste. Eventually, more than 16,000 tonnes of waste was diverted from landfills. In view of these results, the contracts for the sorting and treatment of bulky objects now include this method of recovery.



●  
**€63.3 M**  
OF REVENUES FROM ENERGY RECOVERY

●  
**42.7 %**  
OF CPCU'S ENERGY  
SUPPLIED BY SYCTOM IN 2016

## URBAN WASTE LOGISTICS

### A fruitful call for expression of interest



This is an unprecedented collaboration to which Syctom invited associations, industrialists and consulting firms. The rationale behind this call for expression of interest (CEI) was to conduct a collective reflection on the issues of waste logistics: how to supply regularly to energy recovery units taking operational constraints into account (possible incidents, maintenance requirements, but also seasonal variations in heat requirements, etc.)? How can optimal recycling of household waste be ensured? In April, a jury analysed seven applications. Finally three winners were identified for their innovative ideas. On this basis, Syctom launched two calls for tender: one for a software tool for flow management and forecasting, the other for the implementation of a logistics platform.



*We must be able to use our facilities to the maximum of their capacities. The purpose of this CEI was to generate as many ideas as possible, including from "unusual" actors. In this respect, the quality of all the proposals received must be stressed. The plurality of visions made the approach interesting.*

#### **Loïc Morel**

*Director of energy recovery and bio-waste at Syctom*

### Organic waste: avenues for recovery under study

#### **SIAAP/Syctom project: towards an unprecedented co-processing solution**

In 2016, the project for the joint treatment of sewage sludge and the organic fraction from household waste achieved a new milestone. Following the signing of a framework cooperation agreement in January, a consultation for an innovation partnership was launched on 31 October (*see p. 38*). The project is based on synergising two previously distinct streams, to produce biogas which is then injected into the natural gas network. This solution is based on a virtuous principle: generate more energy by mixing two highly complementary products (nitrogen-rich sewage sludge and carbon-rich organic waste).

#### **Developing outlets for food waste**

Attention was also paid to another flow: food waste. Because by 2025, it will require a specific management. Since 2015, two reception centres have been made available to the member local authorities in Saint-Denis and Villeneuve-Saint-Georges, with a view to organic and energy recovery (biogas). To drive the emergence of a sustainable stream, Syctom launched a wide-ranging programme in late 2016 to support local authorities in order to encourage experiments in its territory (*see page 36*).

At the same time, the source separation targets (22 kg/pers./year by 2023) call for suitable treatment solutions. In 2016, Syctom joined forces with other syndicates and local authorities in cooperation with SIGEIF and GrDF for a methanisation unit project on the Port de Gennevilliers. The signing of a co-operation agreement in early 2017 laid the foundations for a governance conducive to the success of the project.



*In this project, we are pooling the skills of two public services, one responsible for solid waste, the other for "liquid waste". Through our partnership, we are helping to boost innovation in the field of the environment. This is indeed a fine example of territorial synergy for the benefit of the energy transition of our region. Leading the way to a smart and healthy city!*

#### **Denis Pénouel**

*Deputy general manager, Prospective, at SIAAP*





# Towards an optimal recycling of materials



*The aim is to find the most appropriate technical and economic solutions to modernise our sorting centres, while ensuring the continuity of the public service. We do not reason on a centre-by-centre basis, but more broadly across all our facilities and even beyond, by anticipating potential needs for partnerships with private centres or neighbouring syndicates.*

**Karine Spérandio**  
Director of sorting centres at Sycotom

## Adapting the industrial tool to the extended sorting instructions

The sorting of all plastic packaging will be extended throughout the territory by 2022, and in the case of Paris, by 2018. This is why Sycotom is stepping up the modernisation of its sorting centres through a programme of studies and works staggered over time. In 2016, the action focused mainly on the centre in Paris XV.

In Paris XV, adaptation works were included in the new Design-Build-Operate-Maintain (DBOM) contract, for which a competitive procedure was launched in the summer of 2016. With one constraint: integrate new equipment and if possible increase the centre's capacities without touching the buildings. The work is planned for 2018. In Nanterre, the timetable includes the launch of a DBOM contract in March 2017 and of the works in 2019.

Two Sycotom sorting centres are already processing all plastic packaging: the one in Romainville,



### Romainville: a latest generation sorting line

*With its completely new process and an operating capacity of 45,000 tonnes/year, it is today Sycotom's largest sorting centre. This state-of-the-art facility, inaugurated in February 2016 after 10 months of intensive work, takes into account the double extension of instructions, by sorting all*

*the plastic packaging and metal packaging from the territory of Est Ensemble and 11 Parisian arrondissements. With its 200 machines, including 13 optical separators and 2 baling presses, it offers increased performance in terms of material capture. The centre already has a recycling efficiency of 89%.*



●  
**73%**  
RATE OF RECYCLING FROM  
SELECTIVE COLLECTION

●  
**45,000 t/year**  
OPERATING CAPACITY FOR THE SORTING CENTRE  
IN ROMAINVILLE

equipped with a brand new process in 2016 (*see box*), and the one in Sevran, a pilot site from 2012, modernised in 2014. Additional works were carried out in Sevran during the second half of 2016, to improve the sorting and the quality of plastic films but also to capture recoverable

materials from rejects. Syctom also applied to Government services to obtain an authorisation to increase the centre's capacity from 17,000 tonnes a year to 20,000 tonnes a year. This is to deploy extended collection in other territories.

## Sorting capacity constantly ramped up

While increasing the capacity of its existing centres, Syctom plans to commission a second sorting centre in Paris with a capacity of 45,000 t/year by 2019 (*see box*). Located in the eco-district of Clichy-Batignolles, it will serve 10 districts and the municipalities of Neuilly-sur-Seine, Levallois-Perret, Clichy-la-Garenne and Saint-Ouen. In accordance with the regulations on "Classified

facilities for environmental protection", the operating permit application was subject to a public enquiry from 13 October to 17 November 2016. Dialogue with residents and local stakeholders will continue during the works, which will be announced from the spring of 2017. Ultimately, this exemplary facility is destined to become a centrepiece in Syctom's sorting system.

### PROJECT IN PARIS XVII

## 2019: a second sorting within Paris city

To meet the growing needs arising from the extension of instructions, the sorting centre in Paris XVII will be located in the Clichy-Batignolles eco-district.

Ultra-efficient, it will benefit from the best technologies: a highly automated process, a top-notch safety system, a manual sorting focussed on quality control, and much more. Every day, more than 130 tonnes of selective collection will be prepared here for recycling. Another advantage of the facility: its environmental performance, with high-quality architecture, a



photovoltaic system, reduced energy and water consumption, with half of the sorted materials evacuated by rail freight. This ambition to set an example and

limit nuisances will be pursued from the construction phase, as illustrated by the signature of a green site charter by all the stakeholders in late 2016.



60% of bulky objects managed by Syctom are recycled. This performance is the fruit of ongoing research and collaborative work with the recycling industry. For example, in 2016, plastics (bins, crates, end-of-life toys, etc.) and mattresses were recovered in new streams. Syctom also optimises the non-recycled portion by recovering it as energy.

### Romain Pélissou

Recycling and alternative transportation director at Syctom

## Recycling new streams

2016 was marked by the ramp-up of the experimental system for sorting small metal packages in the sorting centres in Nanterre and Romainville. A communication campaign on the extension of the sorting instructions to all metal packaging was launched in the territory of Est Ensemble by Syctom and its member local authorities. Finally, the "experimental" flow captured helped to quadruple aluminium production at the sorting centre in Nanterre and to double that of the centre at Romainville.

For its part, Syctom's treatment of bulky objects (BOs) underwent two major changes: the incineration of rejects from BO sorting in energy recovery units - with more than 16,000 tonnes diverted from landfills -, and the progress made in

the steps taken to capture and recycle new materials. These include paper (now mixed with cardboard), rigid plastics (garden furniture, tubes, crates, etc.) and mattresses. For mattresses, the public contract concluded with Recyc Matelas can be described as exemplary because Syctom is the only player in France to recycle them from the door-to-door collection of BOs. In the second half of 2016, 354 tonnes were received.

Finally, at the Ivry-sur-Seine waste reception centre, the partnership with Ecologic Oil to recycle edible oils into biofuel was extended. Similarly, the Emmaüs crate system resulted in the re-use of more than 14 tonnes of furniture objects and equipment.





# The expertise of a key player in sustainable development

As the leading public waste treatment operator in Europe, Syctom is working to enrich and share its vision of exemplary waste management. That is why it works in favour of an enhanced dialogue and ever closer exchanges with local, regional and international stakeholders. To develop the performance of the stream and innovate for its future.

## TAKING THE TERRITORY FORWARD

Accompanying and supporting local projects in favour of a circular economy, raising awareness among individuals and businesses, striving towards the emergence of a sustainable stream for food waste.

## DEVELOPING SYNERGIES IN ILE-DE-FRANCE

Engaging in dialogue with local authorities and partners in the sector, pooling equipment with neighbouring waste treatment syndicates, innovating with the major syndicates in the Ile-de-France region, promoting and supporting eco-design in Île-de-France.

## SHARING AND INNOVATING INTERNATIONALLY

Promoting its vision of the French waste management model far and wide, sharing expertise and know-how across the world, including through international solidarity.

**€1.28 M**

SUPPORT FOR LOCAL ACTIONS IN THE FIELD OF PREVENTION AND SORTING

**1,316**

VISITORS TO SYCTOM CENTRES IN 2016

**28**

ECO-FACILITATORS DEPLOYED TO CARRY OUT AWARENESS-RAISING INITIATIVES IN THE TERRITORY





# Mobilising the territory



Through our partnership agreement, Syctom funds the establishment of voluntary drop-off points for the collection of glass. The municipalities of Chesnay, Versailles and Vélizy-Villacoublay can benefit from this. This method of collection will be adopted by 2018 by all municipalities in the Agglomeration with a threefold objective of harmonisation, cost reduction and protection of the environment.

**Luc Wattelle**  
Mayor of Bougival  
(Versailles Grand Parc AC),  
Delegate of Syctom

## Encouraging resource savings

In 2016, Syctom's support to local authorities was largely focussed on initiatives to promote sorting to develop waste recycling and recovery more widely.

### First application of incentive pricing

The new pricing formulated in late 2015 came into force in 2016. Simpler and more equitable, this new pricing is a powerful lever to boost the selective collection of packaging and paper and the sorting of food waste. A degressive pricing – linked to the sorting performance – was set up for selective collection. Tonnages collected in excess of those accounted for in 2015 are treated free of charge and grants are paid if the tonnage per person exceeds 35 kg/year. Finally, with a very low price (€5 /tonne of food waste) and financial grants, Syctom also intends to encourage the member local authorities to switch to food waste sorting.

### Deployment of the 2015-2020 support plan

The 2015-2020 support plan gained momentum in 2016. This is reflected notably in the financing of some 40 local projects, aimed at mobilising the private and public players in the territory to foster the shift to a circular economy (see box). Another flagship measure in 2016 was the extension of sorting instructions (plastic and metal packaging) to 14 towns in the north-east of the metropolis, made possible in particular by the modernisation of the sorting centre in Romainville.

### Nearly 40 projects funded

To promote a territorial circular economy, Syctom directly financed some forty initiatives in 2016, ranging from the composting drive to the funding of reuse shops, and to the funding of underground containers for collection. Out of the

36 projects supported by Syctom, 13 initiatives focussed on waste prevention, 14 on bio-waste, 9 on the sorting of packaging and graphic papers, for amounts between €700 and €300,000.

PILOT PROJECT

## Extension of sorting instructions: a new phase of experimentation



14 towns were selected by Eco-Emballages as part of its collection improvement plan to

integrate the new phase in the extension of sorting instructions to all plastic packaging: Montreuil,

Bagnolet, Les Lilas, Le Pré-Saint Gervais, Pantin, Romainville, Bobigny, Noisy-le-Sec, Villemomble, Bondy, Les Pavillons-sous-Bois, Drancy, Le Bourget, Dugny. This experiment was supported by Syctom, which provided its expertise and its human and technical resources. Two training sessions for sorting ambassadors were organised on this subject. Communication tools were made available to the towns and the residents. Finally, door-to-door information visits to residents were organised. This all-round deployment yielded significant results: an increase in selective collection far higher than that recorded in 2012 during the first phase of experimentation.



*IN Meudon, activities were carried out, on the initiative of the town, by the territory of Grand Paris Seine Ouest, particularly to promote the development of collective composting just outside buildings. At the same time, to encourage people to sort their waste more and better, Syctom's eco-facilitators carried out door-to-door awareness drives in 2,800 housing units in Meudon, and in other municipalities in the territory.*

**Florence de Pampelonne**  
Deputy Mayor of Meudon (T3) in charge of sustainable development, the environment and the living environment, Alternate delegate of Syctom

## Raising public awareness far and wide

### Eco-facilitators: raising awareness all around

As announced by the 2015-2020 support plan, Syctom deployed 28 eco-facilitators in April 2016, as part of the contracts concluded with PikPik Environnement and E-graine, Verdicité and Ecogestik. Trained and motivated, they intervene at the request of local authorities for door-to-door awareness drives, local events or service quality monitoring (surveys, etc.). Available on demand, they are made up of three teams covering Paris, Val-de-Marne, Seine-Saint-Denis, Hauts-de-Seine and Yvelines. Before any operation, the eco-facilitators work closely with the teams within the territory where they have to intervene.

### Resumption of Open Days

While following the instructions related to the maintenance of the state of emergency and the Vigipirate plan, Syctom resumed Open Days at its waste treatment centres. Four such days were

organised in 2016. In September, Isséane was the first to kick off as part of the European Heritage Days, followed by Sevran, Paris XV and Nanterre. A total of 1,316 visitors took part in the event.

### Expertise and support for the teams of local authorities

Syctom continued its "Morning events", aimed at agents and communicators in the territory to present awareness campaigns, tools available, etc. Two such meetings were organised in the first half: one on bio-waste and the other on sorting and recycling. Information meetings on the extension of sorting instructions to all plastic and metal packaging for the towns in the catchment areas of the sorting centres in Sevran and Nanterre were also conducted in April and May. In total, they brought together 15 municipalities, Eco-Emballages and CELAA (Light Aluminium and Steel Packaging Club). Lastly, two training sessions for sorting ambassadors were conducted.



2016 REVIEW

## Eco-facilitators: a promising first year

After their first year of practice, the eco-facilitators are more than enthusiastic: "This year was an experiment for all of us. Given the

colossal magnitude of the stakes involved in this new system, we are proud that we have succeeded in meeting the challenge" say in

unison the eco-facilitators of the associations E-graine and Pikipik Environnement. Indeed, by themselves they conducted some 708 half-days of awareness raising in 12 municipalities - Paris (sixteen arrondissements involved), Noisy-le-Sec, Bobigny, Drancy, Neuilly-sur-Marne, Aulnay-sous-Bois, Meudon, Issy-les-Moulineaux, Boulogne-Billancourt, Clichy-la-Garenne, Ivry-sur-Seine et Versailles - on topics as varied as food waste, thoughtful consumption or sorting practices. A success that encourages them to "hope to continue this adventure for a long time!!".



*This experimentation on food waste collection should enable us to test how the Parisians are adopting this new sorting practice in different urban contexts. We will draw all the relevant lessons to expand it to the whole of Paris. This move will take place even as other member local authorities will launch out, and we are all already working on treatment solutions in Sycotom.*

**Mao Péninou**  
Deputy Mayor of Paris  
Vice-President of Sycotom

## Setting up a separate stream for food waste

By 2025, food waste will require a specific management. This is a challenge for all the local authorities in the territory, which will have to organise and ensure their collection. As the implementation is expected to be complicated, Sycotom decided to partner with its member local authorities to build this new stream together. Thus, since 2016, it has offered a "tailor-made" support to encourage them to switch to the separate collection of food waste. This assistance can be material with incentive prices, but also technical or human. It may cover the whole process (from preliminary studies to the taking charge of waste collection) or be very ad-hoc in nature (provision of an eco-facilitator for an event), without however exceeding the 3 years of experimentation. The aim is to build a viable system on a significant scale, so that the local authority can then expand it throughout its territory.

These experiments are also an opportunity to promote experience sharing among all the stakeholders. They help to identify the success factors, but also the possible synergies between collection from households and collection from non-household producers (hospitals, schools, etc.). In this system, Sycotom also provides food waste processing services.



### Food waste is already sorted!

*In Sycotom's territory, some pioneer local authorities have made an early start. The City of Paris already collects from 54 open-air markets and 4 administrative restaurants. As of May 2017, the households of the 2nd and 12th arrondissements will also be covered. Sycotom is also working on a project (households and non-household*

*producers) in the Bas-Pays district of Romainville and the Monmousseau district in Ivry-sur-Seine. Other projects have been rolled out in Paris Ouest La Défense, with a study on food markets, and in Plaine Commune, among non-household producers such as primary, middle and high schools and a few food markets.*



# Cooperating at the Ile-de-France level

Pooling resources, improving performance

In a spirit of territorial solidarity and to improve the quality of the public service, the partnership approach initiated by Syctom with the waste treatment syndicates in the Ile-de-France region was strengthened in 2016. The aim is, in particular, to pool treatment capacities in order to minimise landfilling. During the year, Syctom forged ties with SIOM in Chevreuse Valley (91), SMDO (formerly SMVO, 60) and SITREVA (78). Previous partnerships with four neighbouring syndicates continued. With SIGIDURS, which ensures the energy recovery of nearly

40,000 tonnes of residual household waste from Syctom's 4 member municipalities. With SIEVD, renamed RIVED (a personalised public company for the recovery and use of waste from the Rungis region), which since January 2016 has been receiving flows from selective collection from Syctom's territory to the tune of 3,000 tonnes per year. With SITRU (78), which contributes 12,000 tonnes of selective collection to the sorting centre in Nanterre and is expected to eventually incinerate household waste from Syctom.



*Sigeif is pleased to work with partners of this calibre, so sincerely committed to the development of a new stream (NGV/bioNGV) in the making. With the creation of this semi-public company, our syndicate proves once again to be exemplary in terms of the capacity of local authorities to invest, innovate and drive the energy transition.*

**Jean-Jacques Guillet**  
President of SIGEIF,  
MP-Mayor of Chaville

## Cross-cutting and innovative partnerships

### Urban public services of Greater Paris working in synergy

In 2016, Syctom's ties with the other major syndicates in Paris were strengthened: SEDIF (Water), SIAAP (Sanitation), SIGEIF (Gas/Electricity), SIPPAREC (Energies/Telecommunications) and EPTB Seine Great Seine Grands Lacs (lakes and reservoirs). All of them gathered in April at the Exhibition for Île-de-France Mayors. Throughout the year, they shared international cooperation actions and

launched new innovative partnerships. Syctom therefore decided to enter the share capital of SIGEIF Mobilités, a new semi-public company created by SIGEIF. Alongside other partners, including SIAAP and Siredom, its participation will amount to 1%, i.e. €50,000. This semi-public company is planning to develop a network of 10 NGV (Natural Gas for Vehicles) and BioNGV stations within three to five years. With SIGEIF, Syctom also set up a project for a methanisation unit on the Port of Gennevilliers (*see p. 29*).



●  
**40,000 t**  
OF RHW TREATED  
BY SIGIDURS

●  
**12,000 t**  
OF SELECTIVE COLLECTION CONTRIBUTED  
BY SITRU TO NANTERRE

●  
**300** STUDENTS  
SUPPORTED BY SYCTOM SINCE  
THE LAUNCH OF THE ZERO WASTE DESIGN CONTEST



Syctom's Zero Waste Design Contest helps to play down the technical issue of waste management, giving it a more aesthetic, creative and universal dimension. This is a real problem, which is motivating for the students participating in the contest. In just two participations, our establishment has won 5 prizes! This made it possible to reward the students, and fund the equipment and the mentors.

**Frédérique Simon**  
BTS Teacher  
Product Design  
at the Lycée François Mansart



I am confident and optimistic about the Zero Waste Design Contest. I have followed its growth and I am amazed by the creativity it inspires among students and young graduates. This exercise, conceived by Syctom, the driving force for waste prevention, stimulates reflection and brings out the environmental awareness of these future professionals. The concept of waste is thus being transformed, in an innovative way, into a resource for tomorrow.

**Florence Crocheton**  
Deputy Mayor  
of Saint-Mandé, member  
of Syctom Board

## A new milestone in the SIAAP/Syctom project

In 2016, the cooperation between SIAAP and Syctom to recover the organic products inherent to their activity became a reality. United on 11 January 2016 by a cooperation framework agreement, the two syndicates signed a partnership protocol on 31 March with the Caisse des Dépôts et Consignations. And the biggest milestone was achieved on 31 October 2016 with

## Stimulating eco-design

Beyond its 2015-2020 plan to support the local authorities, Syctom strives to stimulate a dynamic of exchanges and innovation between all the stakeholders in its territory, be they industrialists, designers, academics or associations. This ambition was materialised in 2016 by its participation in events such as the 13th edition of the "Gardens, Garden" show at the Tuileries and the Paris Design Week (see box).

Syctom also revived its Zero Waste Design contest (see box), in partnership with the Île-de-France region and Ademe. Intended to encourage the designers of tomorrow to integrate environmental considerations into their approach, this event is taking an increasingly concrete form from year to year. Since its creation, 300 students have been supported and 55 projects selected, some of them prototyped.

the launch of a consultation for an innovation partnership. This new type of public procurement procedure, which covers R&D and the acquisition of the solution, is perfectly suitable for the highly innovative nature of the project. Syctom and SIAAP thus intend to leverage all the resources to achieve an efficient and viable industrial solution. The group(s) to which the contract will be awarded will be known in late 2017.



### Syctom at Paris Design Week

From 3 to 10 September 2016, Paris became the international capital of design. Syctom was one of its participants, for a "Design & upcycling" week at the Rotonde Stalingrad. It was an opportunity to showcase the projects participating in

the Zero Waste Design contest 2016 in an exhibition and to launch the 2017 edition devoted to textiles. The whole programme was punctuated by events, workshops and other highlights organised by the eco-facilitators.

## ZERO WASTE DESIGN CONTEST

### A fourth edition dedicated to bio-waste



The Zero Waste Design Contest made a great comeback in 2016 by inviting the students of Ile-de-France to come up with innovative products or services to better recycle

biowaste. Out of the 42 projects received, 4 were awarded on June 2 after selection by a panel of experts in design, eco-design or composting. The 1st prize was awarded to OVE, a

decorative and functional composter (Junior Barona - BTS Product Design - Lycée François Mansart); the 2nd prize was awarded to Master Compost, an overall collection service in supermarkets (Paul Arrial - Céline Gavignet - Gaia Lemmens - Strate College); the 3rd prize was given to Glean Compost, urban furniture to recycle bio-waste from markets (Erika Cupit - BTS Product Design - Lycée François Mansart) Syctom awarded a special prize to Bio Sac, a container designed to sort bio-waste at home (Sandie Traverse - BTS Product Design, Lycée François Mansart). The last two projects will be prototyped by companies or local authorities.



# Opening up to the outside

## Promoting the French waste management model

### Giving impetus to the "waste" sector

Syctom maintains a leading role within the sector, linked to all of its stakeholders. It has proved this once again by actively participating in the negotiations on the "Scale F" (Barème F) presented in March 2016. Within the Association of the Mayors of France (AMF), it endeavoured to defend the interests of the most urbanised territories, in view of the conditions of support proposed by the Environment Ministry. In the end, the memorandum of understanding concluded with the marketers was generally taken over by the State, which should preserve the financial balance of the local authorities. The new scale will come into effect on 1 January 2018.

### Opening up new perspectives

As the leading European public waste treatment company, Syctom is striving to generate a reflection on the French model in this field. To anticipate and envision the future, it is forging ahead more than ever in a spirit of openness and foresight. This is evidenced by its collaboration

with Fondation Concorde, a think tank specialising in economic issues, to shed light on the potential of the waste sector in the French economy (*see box*). If this topic of study was a first for a think tank, so was the approach for Syctom, which intends to renew this type of collaboration.

### A successful collaboration with Fondation Concorde

*In June 2016, Syctom worked with Fondation Concorde as part of a study group, "Treatment of household waste: an opportunity for the French economy?". Syctom participated in regular meetings with specialists and experts. The issues addressed include eco-design, acceptability of facilities, and the legal status of*

*waste. This collective reflection gave rise to a monograph entitled "Making waste a resource". Disseminated in early 2017 to parliamentarians, industrialists and territorial elected representatives, it formulated a series of proposals to make France a territory of experimentation and excellence in waste management.*



*We have a 360° vision of the constraints and stakes involved in waste management, such as few other players have. We maintain relations with users, local authorities and waste collectors upstream as well as with recycling and recovery companies downstream. In view of the social, demographic and technological developments, we can legitimately participate in the redefinition of the French model and the development of public policies in France and in Europe.*

**Martial Lorenzo**  
General manager of services in Syctom





*In the case of waste treatment facilities, the legitimacy of the decision is based on the transparency and fairness of the discussions. It is important that there should be a debate and that citizens can participate in decision-making. And there are many examples, including at Syctom, where projects have evolved because of the involvement of the stakeholders (elected representatives, associations) but also of the citizens themselves.*

**Christian Leyrit**

*President of the National Commission for Public Debate (CNDP)*

## A sharing of know-how without boundaries

Syctom is committed as always to sharing and disseminating its know-how. This is the rationale behind the hosting of foreign delegations, which grew markedly in 2016 (see box). This also explains the active participation in international cooperation meetings: this year with the regions of Casablanca-Settat (Morocco) and Abidjan (Côte d'Ivoire) and the Chamber of Commerce of Gulf Countries. This also reflects a commitment to climate, with an active participation in COP22 held in Marrakech from 7 to 18 November 2016 (see box).

### Syctom participates at COP22

*Thanks to its active contribution at COP21, Syctom confirmed its commitment to COP22, which was held in Marrakech, by organising a side event. The theme of the November 12 event was the acceptability of waste treatment facilities. This is a major issue, in France as elsewhere, where populations are increasingly demanding for information on the activities and impacts of the facilities. How can we*

*develop and maintain a constructive dialogue with the civil society? Which levers should be mobilised in view of the local problems? Syctom, regularly confronted with these questions, shared its experience in public debate and dialogue with local territories and stakeholders. Alongside the other partners present, it took part in a fruitful exchange with about hundred participants present at the round table.*

### VISITS OF FOREIGN DELEGATIONS

## Syctom's facilities acclaimed worldwide



In 2016, visitors came from the five continents to discover Syctom's

facilities, its innovative projects and everything that makes the French waste management model so unique. Delegations from Belgium,

Morocco, Brazil, Turkey,

China, the Philippines, Saudi Arabia, Turkmenistan, Lebanon, and more. And the demand is growing. In 2016 alone, 18 delegations, representing a total of 336 persons, were received, including Morocco's Environment Minister, the President of the Public Services Regulatory Body of Buenos Aires, the Minister of the environment and natural resources of the Philippines, the Deputy Governor General of the

province of Sistan-Baluchistan in Iran.

### Developing R&D projects on an international scale

Syctom has made innovation its spearhead for increasing its industrial and environmental performance. The international R&D project undertaken in 2016 to capture CO<sub>2</sub> from incineration flue gases is a telling case in point. Applied to the Saint-Ouen centre, it aims to capture CO<sub>2</sub> to nourish microalgae in photobioreactors, and then to produce bioplastics and other materials from this algal material. To

explore this avenue which could be a European first, a research and development contract was signed in April 2016 with a research consortium led by SETEC Environnement. It brings together Armines-Mines Paris Tech, the École Polytechnique of Montréal and the Royal Institute of Technology KTH in Stockholm. Two specialised laboratories are also involved: the Centro Tecnológico Avanzado de Energías Renovables (CTAER), linked to the University of the City of Almeria, Spain, and the Swedish Research Institute SP Sveriges Tekniska Forskningsinstitut.



The project was launched in April 2016 and following the first phase, a series of algae strains with the required characteristics was preselected. These will be tested in real conditions on a

laboratory scale in 2017 to assess their productivity and resistance. Research will also be conducted to improve the performance of the micro-algae culture reactor.

## Working for international solidarity

Syctom's international solidarity programme was enriched with new projects in 2016, with the same objective to contribute to better waste management on a global scale, in a context of increasing production. Nearly a year after its launch, a meeting in September brought together all the stakeholders to review the projects supported (see boxes) and to have a sponsorship system validated by the elected officials.

Several projects were implemented, among them the production of a prevention film for Île Sainte Marie (Madagascar); a study on the Cedar Valley in Lebanon in order to find funds to safeguard its listing as a world heritage site. We can also mention the support given to another study on the city of Kiffa, in Mauritania, on the complexity of intervention in a region with a desert-like, arid climate.

### New projects supported in 2016

The grants awarded by Syctom ranged from €30,000 to €115,000

#### MADAGASCAR

- Antananarivo: waste management in the city
- Antsirabe: improving the collection, treatment and recovery of waste

#### ETHIOPIA

- Addis Ababa: inclusive waste management

#### TOGO

- Aného: Sustainable management of household solid waste

#### CARIBBEAN

- Haiti: emergency aid in the wake of Hurricane Matthew

#### LEBANON

- Bsharri District: study for the collection and treatment of waste

#### SENEGAL

- Guediawave: training and awareness about waste sorting and collection Syctom also supported GEVALOR in order to inform French local authorities about the "1% waste" scheme. Objective: to contribute to the definition of relevant solidarity projects on waste management.



At the Syctom International solidarity committee, we believe that there is a powerful leverage effect to be exploited jointly in the areas of drinking water, sanitation and waste management. We are therefore particularly attentive to projects that integrate these three aspects in an integrated approach, with mutual understanding. This is the path that we intend to take with our SEDIF and SIAAP partners.

#### Patrick Trémège

Councillor of Paris, member of the Syctom Board

### FIRST PROJECT

## Madacompost, a model of circular economy

Madacompost is a company created by the French association Gevalor in the municipality of Mahajanga, Madagascar.

It is also the first project supported by Syctom as part of its international solidarity programme. And it is exemplary in more ways than one. Its approach is to turn waste from the city into resources, by recovering biowaste in the form of compost, by recycling plastic bags into bricks and paving stones, by transforming vegetable waste into biofuels and green coal. With significant results: about one hundred people employed, a 75% reduction in volumes of waste landfilled and a demonstration effect in other cities of Madagascar and beyond. The grant helped the association to go further in its innovation process, in particular by developing a "biological compost" or by



experimenting with bio-waste sorting in the local market. Syctom can only be pleased with this first

grant, which in addition to having met its award criteria in all respects, fully reflects its CSR approach.

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Communication director **Véronique Menseau** | Coordination **Julien Bieganski, Solène Patron** |  
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Town of Neuilly-sur-Seine; Town of Paris; Town of Saint-Mandé; RIEVD; Groupement IP13 / AIA Architectes; Kreation  
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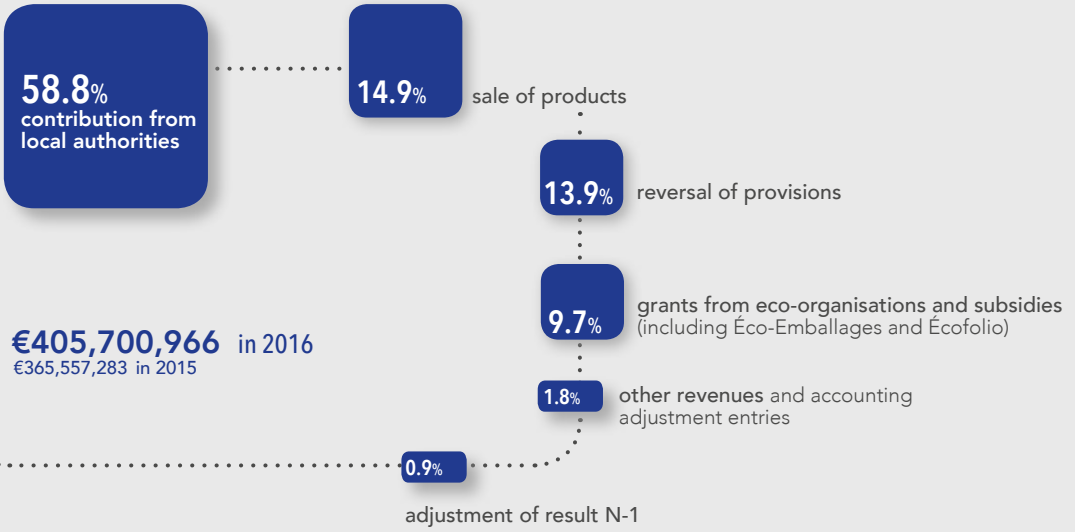
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**Technical  
and financial  
report  
2016**

# Operation Revenues 2016

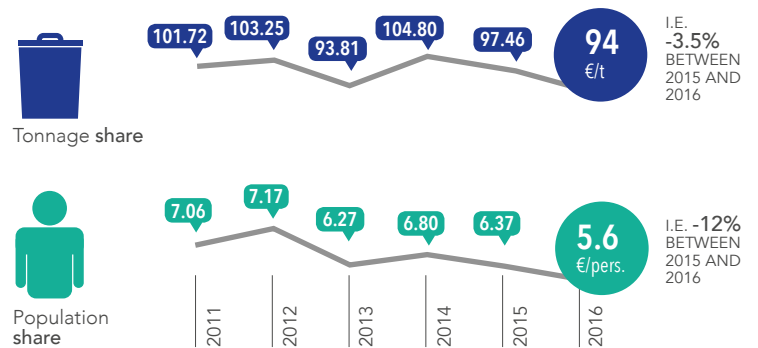


## A FEE STRUCTURE MADE LIGHTER AND MORE MOTIVATING

After a significant fee reduction in 2015, the trend was confirmed in 2016 with the new pricing (more favourable to member local authorities) introduced by Sycotom. The prices for processing tonnages of household waste and bulky objects declined (- 3.5%), as did the population share (- 12.1%). At the same time, the pricing and grants paid for selective collection were radically revised; they are now based on the sorting performance of the local authorities and foster the development of food waste collection.

## CHANGES IN THE FEE AMOUNT FOR HOUSEHOLD WASTE AND BULKY OBJECTS

Calculated pro rata from the quantity of waste brought to Sycotom and from the population of each municipality or inter-municipal grouping.



## USE OF THE FEES for €100



## FEES AND GRANTS PAID REVENUE STRUCTURE

The income from fees stood at €238 M in 2016 and the grants paid to the members amounted to €7.5 M. In 2016, the fees charged from member local authorities accounted for **59%** of Sycotom's operating revenues, followed by the sales of products (**15%**) and grants from eco-organisations (**9%**).

## SALE OF PRODUCTS AND GRANTS FROM ECO-ORGANISATIONS ON AN UPWARD TRAJECTORY

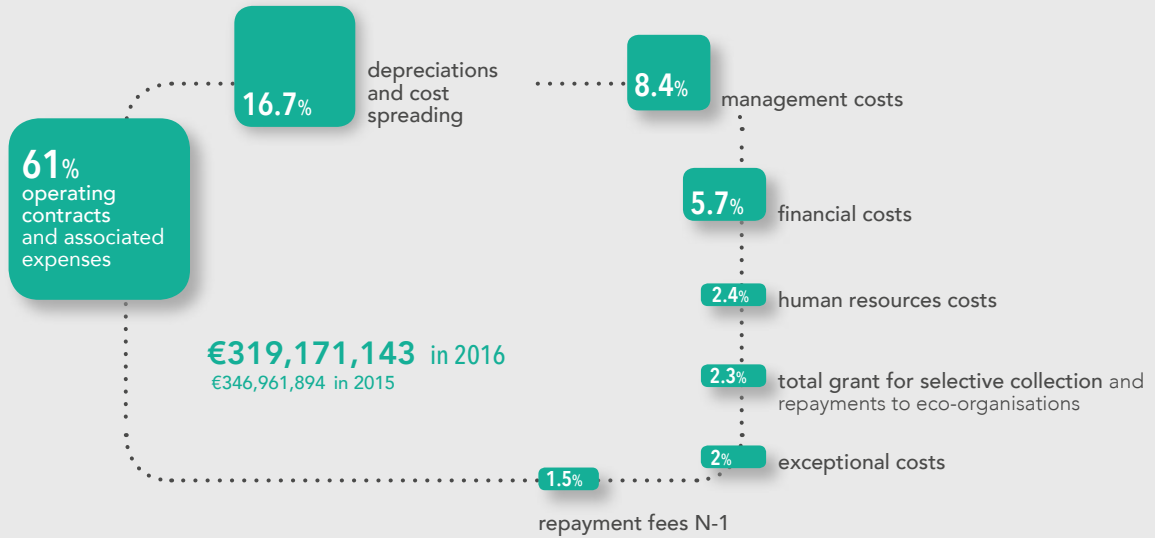
The products sold include steam and electricity from energy recovery, and the materials from the sorting of selective collection, bulky objects and the incineration of household waste.

In 2016, steam revenues grew by about fifteen million euros, following the successful renegotiation with CPCU. The same trend was

seen in the sale of electricity (+ €3.5 M), after the turbine generator units at Isséane and Ivry/Paris XIII were repaired.

Grants awarded by eco-organisations (Eco-Emballages, Écofolio, Éco-Mobilier and OCAD3E) also increased (+ €2.6 M).

# Expenditure 2016



## DECLINE IN OPERATING COSTS



In 2016, operating contracts represented 61% of the operating expenses (€195 M compared to €211 M in 2015). Operating costs decreased by approximately €16 M as a result of several factors: the decrease in major maintenance and repairs; the reduction in landfill costs due to the end of treatment at external centres during renovation of the centre in Romainville; the decrease in incineration cost, in particular for the Saint-Ouen centre, due to the increase in the selling price of steam. However, other items increased: the treatment of bulky objects, whose tonnage grew in 2016; expenses in backup centres, in view of the June 2016 strikes; contributions paid to waste processing syndicates with which Syctom has signed agreements and provides tonnages in order to strengthen synergies between syndicates.

## COMPLEMENTARY AND INNOVATIVE ACTIONS



- The deployment of an ambitious waste prevention and food waste management programme: introduction of eco-facilitators, communication drives for the general public ("Jardin jardins" show, Paris Design Week, etc.), Zero Waste Design Contest, promotion of collective and individual composting, etc.
- The development of an international cooperation programme with 14 agreements approved by the Syndicate Committee in 2016.
- The launch of a research and development contract to produce bioplastics from CO<sub>2</sub> captured from household waste incineration flue gases.

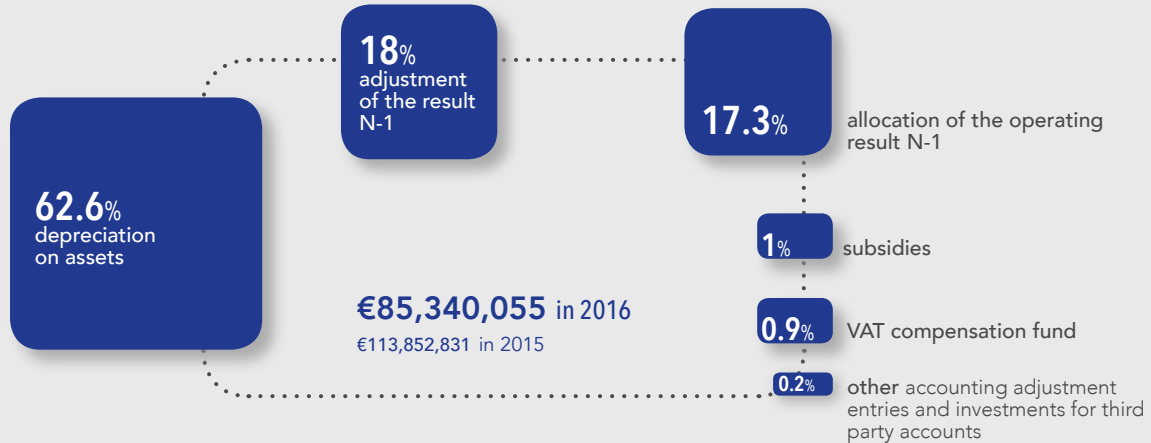
## DEPRECIATIONS AND SELF-FINANCING



Depreciation and amortization amounted to €53.4 M in 2016 and was slightly higher than in 2015 (€ 52.6 M). The high level of depreciation (17% of operating expenditure in 2016) means that the investment sector is guaranteed strong self-financing capacities, which is important to limit Syctom's future debts.



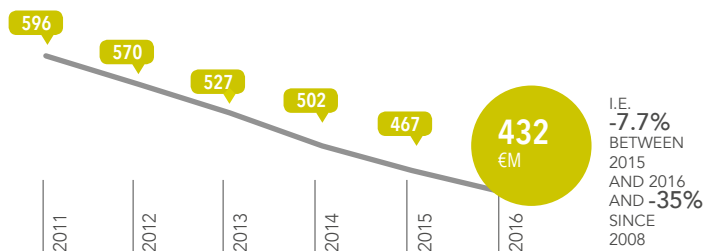
# Investment Revenues 2016



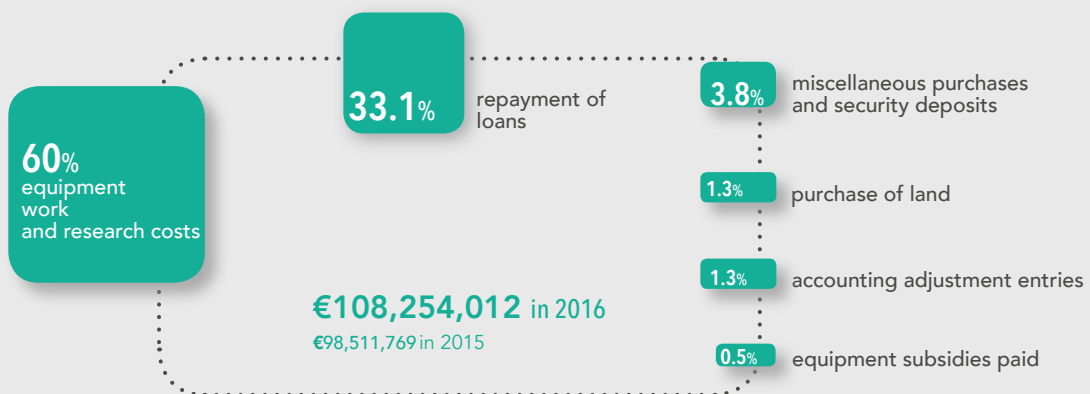
## CONTINUED DEBT REDUCTION

Syctom's debt reduction continued in 2016, with the annual repayment of principal amount (€23.8 M), but also the prepayment of a loan (€12 M). At 31 December 2016, Syctom's debt stock stood at €431.6 million (compared to €467.4 M at 31 December 2015). Syctom's total debt reduction has been €235 M since 2008.

## CHANGES IN THE ANNUAL AMOUNT OF DEBT



# Expenditure 2016



## INVESTMENT: CONTINUATION OF PROJECTS LAUNCHED

In 2016, Syctom continued its infrastructure projects (€66 M compared to €62 M in 2015), namely:

- studies for the construction of the sorting centre in Paris XVII, starting in the spring of 2017,
- studies for the reconstruction of the centre in Ivry/Paris XIII,

- completion of studies and award of the main contracts for flue gas treatment in Saint-Ouen and the continuation of studies for urban integration,
- completion of renovation work at the sorting centre in Romainville,
- the launch of pre-feasibility studies on possible waste management solutions at the Romainville site by 2025.

# Investment programme by site





## CONTINUOUS IMPROVEMENT AND MAINTENANCE OF STANDARDS IN SYCTOM FACILITIES

in €M excl. tax

SITES	WORK FINANCED IN 2016
ISSÉANE	1.18
IVRY/PARIS XIII	3.48
NANTERRE	0.07
PARIS XV	0.17
SAINT-OUEN	0.76
SEVRAN	1.45
<b>TOTAL</b>	<b>7.1</b>

## WORK RELATED TO EXISTING FACILITIES OR TO NEW PROJECTS

in €M excl. tax

SITES	NATURE OF THE PROGRAMME	IMPLEMENTATION PERIOD	WORK FINANCED IN 2016
ROMAINVILLE	 project to renovate the selective collection sorting line and civil engineering works	2015-2016	7.65
SAINT-OUEN	 project to integrate the centre into the urban area - work for landscaping, architectural redesign and flue gas treatment	2012-2021	5.39
OPERATING BALANCES (ISSÉANE, PARIS XV)			0.95
IVRY/PARIS XIII	 project for an energy recovery centre	2007-2027	30.77
PARIS XVII	 project for a sorting centre for selective collection	2010-2019	2.91
OTHER PROJECTS (ROMAINVILLE AND SYCTOM / SIAAP)			0.57
<b>TOTAL</b>			<b>48.23</b>
<b>GRAND TOTAL OF INVESTMENTS</b>			<b>55.33</b>

# Annual report on the price and quality of the public waste disposal service

Pursuant to Decree No. 2015-1827 of 30 December 2015 laying down various provisions for adaptation and simplification in the field of waste prevention and management.

This document will be submitted to a vote by the Sycotom syndicate committee, the metropolitan agency for household waste, during its meeting on 30 June 2017.

## SYCTOM PROCESSING UNITS AND TONNAGE PROCESSED

in tonnes



3 INCINERATION CENTRES WITH ENERGY RECOVERY

	AUTHORISED CAPACITY	TECHNICAL CAPACITY	QUANTITIES INCINERATED
ISSÉANE	460,000*	460,000*	482,134
IVRY/PARIS XIII	730,000	730,000	656,151
SAINT-OUEN	650,000	600,000	591,837

\* Isséane's nominal annual capacity for incineration increased from 460,000 to 510,000 tonnes of waste (prefectoral decree of 5 December 2016).



6 SORTING CENTRES

	AUTHORISED CAPACITY	TECHNICAL CAPACITY	QUANTITIES RECEIVED
ISSÉANE	22,500	23,000	23,099
IVRY/PARIS XIII	36,000	30,000	28,363
NANTERRE	40,000	40,000	27,064
PARIS XV	20,000	20,000	18,844
ROMAINVILLE	45,000	45,000	43,476
SEVRAN	17,000	17,000	17,449



2 WASTE RECEPTION CENTRES

	QUANTITIES RECEIVED
IVRY/PARIS XIII	6,831
ROMAINVILLE	6,934

## OVERALL ANNUAL REPORT

NUMBER OF MUNICIPALITIES WITHIN SYCTOM'S SCOPE 84

NUMBER OF INHABITANTS WITHIN SYCTOM'S SCOPE  
 Figures taken from the general population census for 2013 with an estimated change for 2016 5,767,420

GROSS TONNAGES OF WASTE  
 Household waste, sweepings and green waste (in tonnes) 1,881,436  
 Requisitions (in tonnes) 114

SELECTIVE COLLECTION (in tonnes)  
 Newspapers and magazines, multi-materials, paper, cardboard 181,110  
 Glass 0  
 Bulky objects 200,356  
 Waste reception centres 13,764  
 Food waste 1,059

FEES  
 Tonnage share (in €/t of household waste and bulky objects) 94  
 Population share (in €/pers.) 5.6

## EXTERNAL UNITS USED BY SYCTOM AND TONNAGE PROCESSED

in tonnes



INCINERATION CENTRES

	QUANTITIES INCINERATED
ARGENTEUIL (NOVERGIE)	36,711
CARRIÈRES-SOUS-POISSY (NOVERGIE)	9,211
CARRIÈRES-SUR-SEINE (SUEZ+SITRU)	18,152
MASSY (NOVERGIE)	879
SAINT-THIBAUT-DES-VIGNES (NOVERGIE)	21,588
SARCELLES (SAREN VÉOLIA)	38,790
RUNGIS (RIVED EX-SIEVD)	10,424
VILLEJUST	478
BACKUP CENTRES	882



SC SORTING CENTRES

	QUANTITIES RECEIVED
LE BLANC-MESNIL (PAPREC/SITA)	1,261
CHELLES (GÉNÉRIS)	4,129
GENNEVILLIERS (SUEZ)	15,657
LIMEIL (SITA)	54
RUNGIS (RIVED - EX-SIEVD)	2,443
BUC (NICOLLIN - TRANSFER)	27

SC: selective collection



BO SORTING CENTRES

	QUANTITIES RECEIVED
BONNEUIL (TAÏS)	7,110
BUC (NICOLLIN)	11,146
CHÂTILLON (TAÏS)	7,390
LA COURNEUVE (PAPREC)	47,189
GENNEVILLIERS (PAPREC)	2,449
GENNEVILLIERS (REP)	3,802
GENNEVILLIERS (SUEZ)	27,348
IVRY (DERICHEBOURG)	448
IVRY (CEMEX)	29,941
NOISY (DRT)	32,534
PIERREFITTE (CDIF)	5,746
GENNEVILLIERS (PAPREC)	Construction BO: 18,725
IVRY (CEMEX)	Construction BO: 10,967

BO: Bulky objects



STORAGE FACILITIES FOR HAZARDOUS OR NON-HAZARDOUS WASTE

	QUANTITIES
HWSF VILLEPARISIS (SUEZ)	Refiom: 41,957
NHWSF BOUQUEVAL (REP)	26,521
NHWSF CLAYE-SOUILLY (REP)	54,951
IWSF CLAYE-SOUILLY (REP)	5,688
IWSF (PRIVATE BO CONTRACTS)	30,895
OTHER NHWSF (PRIVATE CONTRACTS)	90,896



## FINANCIAL INDICATORS 2016

Terms of operation of the disposal service awarded to Sycotm, the metropolitan agency for household waste	Public contracts
Total annual amount of expenditure for processing waste by Sycotm (total real expenditure in the operating section of 2016 administrative account - excluding provisions)	€265.7 M
Terms and conditions for financing the overall treatment service	Contribution from local authorities, aid from Eco-Emballage for selective collection and from other eco-organisations, sale of products
Terms and conditions for setting the special fee for the disposal of assimilated products	not applicable
Annual total of main contracted and paid treatment services (excluding major maintenance and repairs)	€190.6 M incl. tax
Total annual amount of investment and operating expenses (excluding capital transactions)	€427.5 M incl. tax
Income from access rights to processing and storage centres at which the local authority is the project owner for assimilated waste	not applicable
Repayments for selective collection	Sycotm grants and Scale E (Barème E) repayments (excluding glass) €2.3 M Repayments for glass €2.7 M
Itemised amount of aid received from certified bodies	Eco-Emballages €29.9 M Ecofolio €3.9 M OCAD3E €0.1 M Éco-mobilier €3.2 M

### RECOVERY

#### ENERGY AND MATERIALS RECOVERY



##### ENERGY AND MATERIALS FROM INCINERATION

Electricity (IN MWH)	146,418
Steam (IN MWH)	2,708,063
Clinkers (IN TONNES)	321,551
Ferrous (IN TONNES)	34,665
Non-ferrous (IN TONNES)	2,832



##### RECYCLING OF MULTI-MATERIALS (IN TONNES)

Plastics, paper, cardboard, steel and aluminium, small electrical appliances	132,230
	141,833 with SITRU



##### RECYCLING OF BULKY OBJECTS (IN TONNES)

Wood, scrap metal, large cardboard boxes	125,151
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##### WASTE RECEPTION CENTRES (IN TONNES)

	8,068
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##### COMPOSTING (IN TONNES)

	944
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### LANDFILL



##### NHWSF (IN TONNES)

	156,029
--	---------

**INDEX OF REDUCTION**  
in the quantities of non-hazardous, non-inert waste admitted into storage facilities  
Base 100 in 2010



### INCOME FROM MATERIALS RECOVERY

in €M  
excl. tax



#### FROM SORTING OF SELECTIVE COLLECTION AND BULKY OBJECTS

Newspapers/magazines	4.6
Plastic packaging	1.9
Cardboard and recovered household packaging	5.4
Paper mix	1
Steel	0.2
Non-ferrous scrap metal from BO	0.2
Glass	2.7
Wood	0.1
<b>TOTAL</b>	<b>16.1</b>



#### FROM INCINERATION

Scrap metal	1.3
Non-ferrous	1.8
<b>TOTAL</b>	<b>3.1</b>
<b>TOTAL</b>	<b>19.2</b>

### REVENUES FROM ENERGY RECOVERY

in €M excl. tax



#### FROM INCINERATION

Sale of steam (Isséane, Ivry/Paris XIII and Saint-Ouen)	58.2*
Sale of electricity (Isséane, Ivry/Paris XIII and Saint-Ouen)	5.1
<b>TOTAL</b>	<b>63.3</b>

\* (including exclusive right 2016)

### MEASURES TAKEN DURING THE YEAR TO PREVENT OR REDUCE HARMFUL EFFECTS ON HUMAN HEALTH AND THE ENVIRONMENT

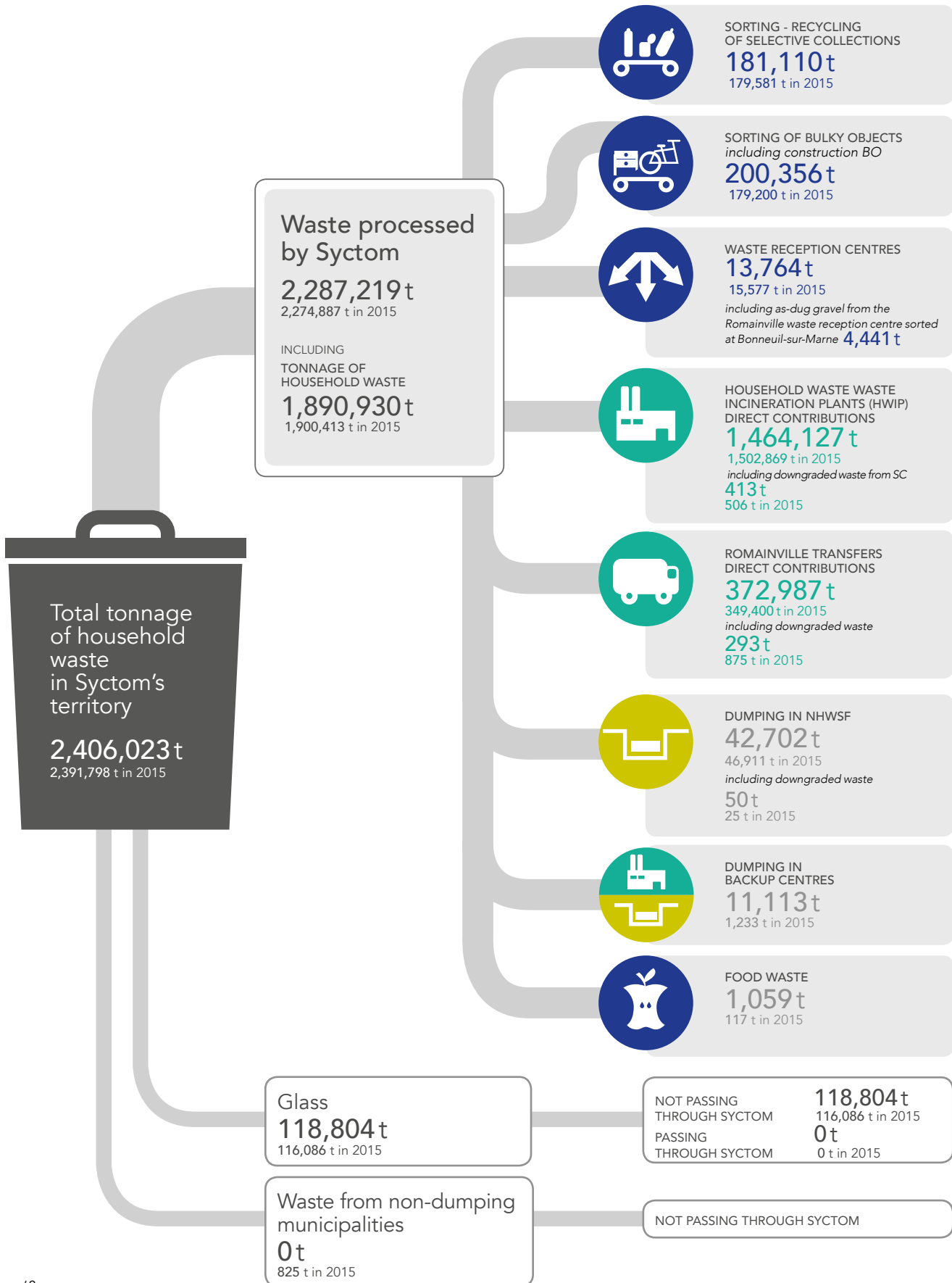
#### Continuous improvement and safety at Sycotm facilities

- Launch of an assistance contract for the diagnostics of the fire prevention system in the Ivry/Paris XIII centre (March 2016)
- Membership in ICSI (Institute for an industrial safety culture) and participation in the "Safety culture and industrial process safety" working group (June 2016)
- Launch of metallurgical works contract to ensure machine compliance for the centres in Sevran (notification in January 2016), Nanterre (July 2016) and Isséane (August 2016)
- Launch of works to secure and improve the working conditions during the unloading of garbage dumpsters on the unloading dock in the Saint-Ouen centre (September 2016)
- Launch of energy diagnostics at the Ivry/Paris XIII centre (September 2016)
- Launch of a consultancy and assistance contract relating to overall safety issues (October 2016)
- Launch of a process to optimise energy performance and to enhance energy efficiency certificates in the Saint-Ouen centre (October 2016)
- Launch of an open invitation to tender for the conduct of hazard studies for Sycotm centres (November 2016)
- Continued organisation of operator/collector coordination meetings to update the safety protocol for the unloading of garbage dumpsters on the docks in energy recovery centres (2015 and 2016)
- Launch of a contract to install infrared cameras to prevent fire outbreaks in the household waste pit at Ivry/Paris XIII (November 2016)

#### Control of air emissions

- Requalification of flue gas treatment facilities and energy optimisation of the energy recovery unit (JVE) in Saint-Ouen: drafting of the "Green site" charter (February 2016) and launch of the first works contracts (2<sup>nd</sup> semester 2016)
- Launch of ambient air quality measurements (dioxins and furans) around the Ivry/Paris XIII centre (July 2016)
- Launch of an odour diagnosis at the in Saint-Ouen centre (December 2016)

# Breakdown of tonnages in different processing centres in 2016




CENTRES SYCTOM	157,564 t 159,111 t in 2015
CENTRES EXTERNAL	23,546 t 20,470 t in 2015
CENTRES SYCTOM	0 t 0 t in 2015
CENTRES EXTERNAL	204,796 t 184,544 t in 2015
SYCTOM'S WASTE RECEPTION CENTRES	9,324 t 10,232 t in 2015
SYCTOM HWIP	1,379,882 t 1,406,150 t in 2015
EXTERNAL HWIP	79,488 t 84,468 t in 2015
NHWSF	4,756 t 12,251 t in 2015
SYCTOM HWIP	291,513 t 238,995 t in 2015
EXTERNAL HWIP	51,430 t 39,362 t in 2015
NHWSF	29,480 t 68,977 t in 2015
DIRECT CONTRIBUTIONS	42,652 t 46,886 t in 2015 50 t 25 t in 2015 <i>downgraded waste</i>
SYCTOM HWIP	1,352 t 68 t in 2014
EXTERNAL HWIP	2,905 t 1,056 t in 2015
NHWSF	6,856 t 109 t in 2015
COMPOSTING OR METHANISATION	1,059 t 109 t in 2015 0 t 7 t in 2015 <i>downgraded waste</i>
EXTERNAL HWIP	0 t 0 t in 2015
NHWSF	0 t 825 t in 2015

RECYCLING (INCLUDING DOWNSTREAM STOCK)	132,230 t 129,909 t in 2015
STOCK VARIATION UPSTREAM	-147 t +177 t in 2015
INCINERATED REJECTS	43,322 t 41,380 t in 2015
REJECTS PUT IN NHWSF	5,705 t 8,115 t in 2015
RECOVERY	125,151 t 107,997 t in 2015
INCINERATED REJECTS	15,604 t 0 t in 2015
REJECTS PUT IN NHWSF	64,042 t 76,547 t in 2015
RECOVERY	8,068 t 9,121 t in 2015
INCINERATED REJECTS	1,255 t 1,112 t in 2015
REJECTS PUT IN NHWSF	0 t 0 t in 2015
CLINKERS DISPOSED	321,551 t 320,180 t in 2015
FERROUS SCRAP SOLD	34,665 t 32,625 t in 2015
NON-FERROUS SCRAP SOLD	2,832 t 2,751 t in 2015
REFIOM	43,390 t 43,394 t in 2015
ELECTRICITY SOLD	146,418 MWh 46,215 MWh in 2015
STEAM (OTHER)	41,300 MWh 43,320 MWh in 2015
STEAM SOLD (CPCU)	2,666,763 MWh 2,764,525 MWh in 2015
COMPOST PRODUCED	0 t 19 t in 2015
ORGANIC COMPOST PRODUCED	944 t 42 t in 2015
INCINERATED REJECTS	61 t 1 t in 2015
RECYCLING	118,804 t 116,086 t in 2015



**Total materials recovery**  
744,245 t  
718,730 t in 2015  
I.E.  
**30.9% of waste**  
INCLUDING  
CLINKERS  
FERROUS  
NON-FERROUS  
**321,551 t**  
320,180 t in 2015



**Total energy recovery**  
HOUSEHOLD WASTE +  
DOWNGRADED WASTE + SORTING  
REJECTS  
**1,866,814 t**  
1,812,651 t in 2015  
I.E.  
**62.7% of waste\***



**Total Syctom landfilling in NHWSF**  
HOUSEHOLD WASTE +  
DOWNGRADED WASTE  
**83,795 t**  
128,248 t in 2015  
HOUSEHOLD WASTE +  
DOWNGRADED WASTE + SORTING  
REJECTS  
**153,542 t**  
212,910 t in 2015  
I.E.  
**6.4% of waste**

\* Clinkers, ferrous and non-ferrous are subjected to materials recovery. To avoid a double count, this percentage was calculated by subtracting these materials from the total energy recovery tonnage. All percentages are calculated including glass.



# Processing costs

2016



Cost per waste stream and treatment mode (in €M)	INCINERATION	NHWSF	SELECTIVE COLLECTION	BULKY OBJECTS	WASTE RECEPTION CENTRE
<b>Tonnage processed</b>	<b>1,867,237</b>	<b>81,472</b>	<b>181,110**</b>	<b>204,796</b>	<b>13,764</b>
Contracts and operating costs*	154.9	7	43.4	25	2
VAT recovery	-1.4	-0.1	-3.4	-0.3	0
Depreciations/Financial costs	63.5	0.1	7.2	-	-
<b>FULL COST OF PROCESSING*</b>	<b>217</b>	<b>7</b>	<b>47.3</b>	<b>24.7</b>	<b>2</b>
Revenues from the sale of materials	2.7	-	13.1	1.5	0.1
Grants from eco-organisations retained by Syctom	12.9	-	18.6	1.5	0.1
Other revenues (e.g. energy for incineration)	65.5	-	1.9	-	-
<b>TOTAL OWN REVENUES</b>	<b>81.1</b>	<b>-</b>	<b>33.7</b>	<b>3.1</b>	<b>0.1</b>
<b>NET COST OF PROCESSING</b>	<b>135.9</b>	<b>7</b>	<b>13.6</b>	<b>21.6</b>	<b>1.8</b>
	€73 /t	€86 /t	€75 /t	€106 /t	€132 /t
Grants/repayments by Syctom for the benefit of members	3.8	0.1	5.3	1.5	0
Grants and material revenues received by Syctom on behalf of members	-	-	5	1.5	0
<b>NET COST OF THE SUPPORT POLICY</b>	<b>3.8</b>	<b>0.1</b>	<b>0.3</b>	<b>-</b>	<b>-</b>
	€2 /t	€1 /t	€2 /t	€0 /t	€0 /t
<b>NET OVERALL COST (processing and support)</b>	<b>139.7</b>	<b>7.1</b>	<b>13.9</b>	<b>21.6</b>	<b>1.8</b>
	€75 /t	€87 /t	€77 /t	€106 /t	€132 /t

\* processing services, transfer services, taxes, major maintenance and repair, rents, treatment of rejects and downgraded waste

\*\* excluding tonnages received from SITRU at the Nanterre sorting centre

## Notable items explaining the changes seen in 2016

- The change in the amount of grant for selective collection must be correlated with the pricing reform made in 2016.
- A sharp increase in energy recovery revenues from incineration (renegotiation of the CPCU contract) can be observed.
- The drop in the cost of sorting selective collection is due to the start of operation at the new sorting centre in Romainville.
- The decrease in the cost of incineration is due to a shift in the investment of one part of major maintenance and repairs (visible eventually in the depreciation).

Cost of all streams combined (HW/SC/BO/waste reception centre)	2016		
	TOTAL COST	TOTAL TONNAGE PROCESSED**	INSEE POPULATION
	€M	€/tonne	€/pers.
Full cost**	292.9	128	51
Total own revenues	118	52	21
<b>NET COST OF PROCESSING</b>	<b>174.9</b>	<b>76</b>	<b>31</b>
<b>NET COST OF THE SUPPORT POLICY</b>	<b>4.2</b>	<b>2</b>	<b>1</b>
+ Structural charges	16.7	7	3
+ Prevention	2.7	1	0
<b>NET OVERALL COST</b>	<b>198.5</b>	<b>87</b>	<b>35</b>

\*\* excluding double counts such as SC sorting rejects which comes under the incineration and SC columns

2015					2014				
INCINERATION	ISDND	SELECTIVE COLLECTION	BULKY OBJECTS	WASTE RECEPTION CENTRE	INCINERATION	NHWSF	SELECTIVE COLLECTION	BULKY OBJECTS	WASTE RECEPTION CENTRE
1,808,099	130,560	179,581	184,545	13,764	1,864,570	129,179	174,376	177,838	17,180
162.5	12.6	48	20.8	2.1	162.6	13.6	39.4	19.7	2
-1.7	-0.1	-3.8	-0.2	0	-1.7	-0.2	-3.0	-0.2	0
62.9	0.3	7.3	-	-	68.0	0.3	6.7	-	-
223.7	12.7	51.5	20.6	2.032	228.8	13.7	43.1	19.4	2
3.4	-	12.7	1.5	0.1	4.1	-	11.6	1.3	0.1
11.2	-	17.8	1.4	0.1	12.5	-	16.4	1.6	0.1
46.3	-	-	-	-	49.4	-	-	-	-
60.9	-	30.4	2.9	0.1	66	-	28	2.8	0.2
162.8	12.7	21	17.7	1.9	162.7	13.7	15.1	16.6	1.8
€90 /t	€97 /t	€117 /t	€96 /t	€138 /t	€87 /t	€106 /t	€87 /t	€93 /t	€105 /t
3	0.1	29.2	1.4	0	0.8	0.1	28.3	1.5	0.1
-	-	4.6	1.4	0	-	-	4.5	1.5	0.1
3	0.1	24.6	-	-	0.8	0.1	23.8	-	-
€2 /t	€1 /t	€137 /t	€0 /t	€0 /t	€0 /t	€1 /t	€136 /t	€0 /t	€0 /t
165.8	12.8	45.6	17.7	1.9	163.6	13.8	38.9	16.6	1.8
€92 /t	€98 /t	€254 /t	€96 /t	€138 /t	€88 /t	€107 /t	€223 /t	€93 /t	€105 /t

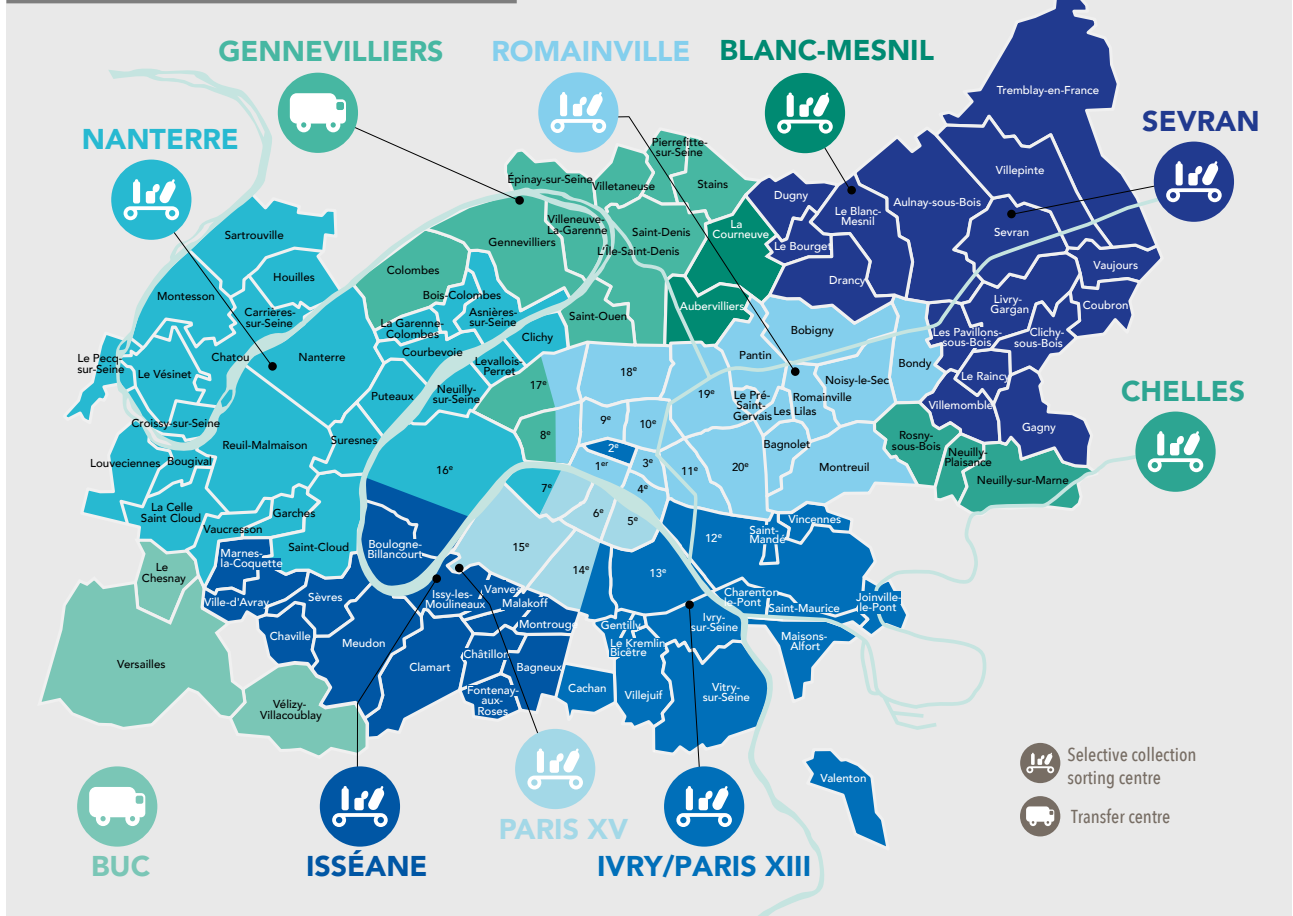
2015			2014		
TOTAL COST	TOTAL TONNAGE PROCESSED**	INSEE POPULATION	TOTAL COST	TOTAL TONNAGE PROCESSED**	INSEE POPULATION
	2,274,887	5,700,366		2,307,397	5,690,181
€M	€/tonne	€/pers.	€M	€/tonne	€/pers.
305.8	134	54	302.3	132	53
94.4	41	17	97	42	17
211.5	92	37	205.3	90	36
27.7	12	5	24.7	11	4
14.4	6	3	13.6	6	2
1	0	0	1	1	0
254.6	111	45	244.8	107	43

### Some methodological information

- The policy of support to local authorities (remoteness, hosting, Éco-Emballages repayment, Éco-mobilier repayment) is highlighted because it cannot be assimilated to conventional treatment expense.
- The cost calculation is the result of an analysis that performs restatements so that the data presented reveal the most reliable trends possible. It is therefore not the exact reflection of the accounting.
- For example, the previous financial year presented shows an estimation that is as close as possible to reality with respect to certain points. The following year, the final data then replace the estimated values.

# Selective collection

CATCHMENT AREAS JANUARY 2017















## BREAKDOWN OF TONNAGE 2016

SORTING CENTRES	TONNAGES		Variations in stock		TONNAGES RECOVERED	OPERATORS
	RECEIVED (including downgraded waste)	SORTED	upstream	downstream		
ISSÉANE	23,099	23,025	-180	-48	16,174	TSI
IVRY/PARIS XIII	28,363	28,162	0	0	17,203	SUEZ
NANTERRE	27,064	26,963	28	-96	19,390	VÉOLIA PROPRETÉ
NANTERRE (SITRU)	11,760	11,759	12	-42	9,603	VÉOLIA
PARIS XV	18,844	18,832	-222	66	14,701	COVED
ROMAINVILLE	43,476	43,183	-15	379	34,960	URBASER
SEVRAN	17,449	17,399	-10	24	12,626	IHOL
BLANC-MESNIL / LIMEIL / GENNEVILLIERS (SORTING + TRANSFER)	16,972	16,947	249	273	12,483	PAPREC / SUEZ
BUC (TRANSFER)	27	27	-13	0	0	NICOLLIN
CHELLES	4,129	4,129	0	0	2,802	GÉNÉRIS
RUNGIS	2,443	2,443	16	66	1,890	RIVED (EX-SIEVD)
<b>TOTAL</b>	<b>193,626</b>	<b>192,869</b>	<b>-135</b>	<b>623</b>	<b>141,832</b>	



## RECYCLABLE MATERIALS RECOVERY CHANNELS

in tonnes

	TONNAGES SYCTOM 2016	DESTINATION	FUTURE	TRANSPORT
 NEWSPAPERS REVIEWS MAGAZINES	51,249	Paper mills UPM-Chapelle Darblay at Grand-Couronne 76	NEWSPAPER	90% river (barge or container) the rest by road
 EMR (brown cardboard + thin cardboard packaging)	46,837	Paper mills Europac 76 Saica 02 Emin Leydier 10	BROWN CARDBOARD	40% of river transport (barge), the rest by road
 PAPER MIX	15,065	Cardboard mills of Gondardennes or RenoDiMedici 62	CORRUGATED OR FLAT CARDBOARD	Road
 LIGHT FOOD PACKAGING (LFP)	1,374	Paper mill Georgia Pacific 45 Nova Tissue 88	TOILET AND HOUSEHOLD PAPER	Road
 PLASTIC PET BOTTLES	8,125	Mostly FPR Limay factory 78 and Near Europe	GRANULES USED TO MAKE BOTTLES	River transport (barge) after regrouping the streams at Gennevilliers for Limay, the rest by road
 PLASTIC HDPE BOTTLES	3,239	Neufchâteau factories 88 MPB 71 Lunen Germany	HDPE PRODUCTS (cleaning pipes, watering cans, etc.)	Road
 PACKAGING IN RIGID PLASTIC (PE, PP, PS)	746	Plastic materials from Bourgogne 71	VARIOUS PLASTIC PRODUCTS	Road
 LDPE FILMS AND COVERS	1,166	Different recyclers, sometimes after sorting and grading by Paprec at Blanc-Mesnil Production of SRF as part of an experimentation	PLASTIC FILMS PRODUCTION OF SRF*	Road
 ALUMINIUM FROM SELECTIVE COLLECTION	415	Regeal-Affimet factory at Compiègne 60 Alunova factory Germany (for the experimental small aluminium streams from Nanterre)	ALUMINIUM USED TO CAST VARIOUS PARTS (particularly in the automotive sector)	Road
 ALUMINIUM FROM CLINKERS	2,633	GALLOO factory at Halluin Belgium	ALUMINIUM USED TO CAST VARIOUS PARTS (particularly in the automotive sector)	Road
 STEEL FROM SELECTIVE COLLECTION	2,825	Arcelor factory at Dunkerque 59	STEEL PRODUCTS	Road
 STEEL FROM CLINKERS	32,286	Large scrap metal: taken over by GALLOO IDF at Bonneuil s/Marne 94 Small scrap metal: taken over by GALLOO Metal or or other subcontractors Belgium and 59	STEEL PRODUCTS	Road

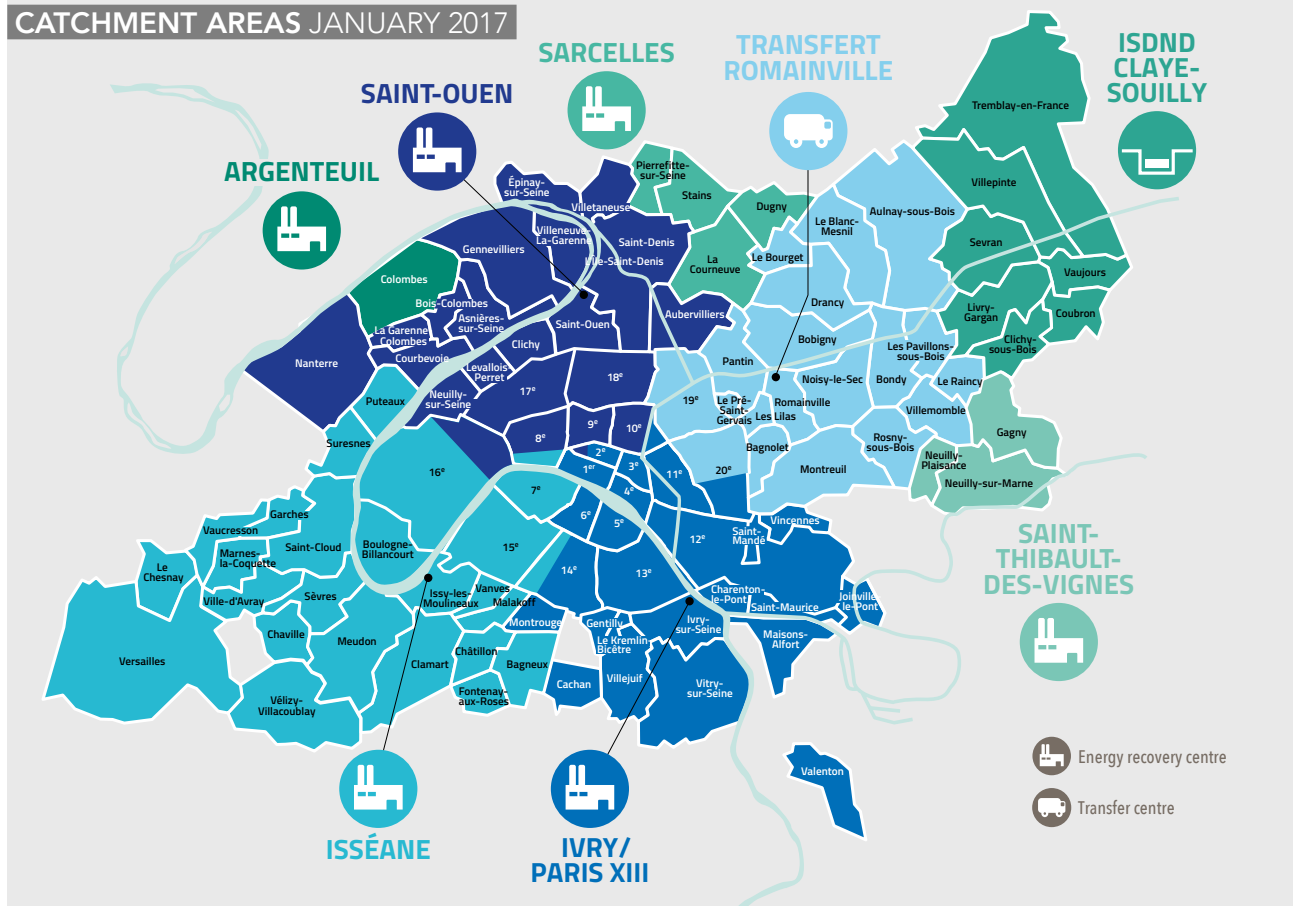
\* SRF = Solid Recovered Fuel

## Waste reception centres

WASTE RECEPTION CENTRES	TONNAGES RECEIVED	TONNAGES RECOVERED	OPERATORS
IVRY/PARIS XIII	6,831	5,575	SITA
ROMAINVILLE	6,934	2,493*	Urbaser environnement
<b>TOTAL</b>	<b>13,764</b>	<b>8,068</b>	

\* The as-dug gravel from the Romainville waste reception centre is then sorted in a BO centre. Tonnages recovered from this sorting are not included here.

# Residual household waste



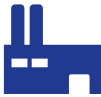
## BREAKDOWN OF TONNAGE 2016

INCINERATION UNITS	TONNAGES INCINERATED	RECOVERY					OPERATORS
		Steam sold (IN MWH)	Electricity sold (IN MWH)	Clinkers (IN TONNES)	Ferrous (IN TONNES)	Non-ferrous (IN TONNES)	
ISSÉANE	482,134	678,925	35,793	82,286	7,216	653	TSI
IVRY/PARIS XIII	656,151	828,293	72,691	112,001	13,315	934	IP13
SAINT-OUEN	591,837	1,159,544	9,526	104,716	11,755	1,046	TIRU
<b>TOTAL SYCTOM CENTRES</b>	<b>1,730,122</b>	<b>2,666,762</b>	<b>118,010</b>	<b>299,003</b>	<b>32,286</b>	<b>2,633</b>	
ARGENTEUIL*	36,711	1,704	10,540	9,059	595	30	SUEZ
CARRIÈRES SOUS POISSY	9,211	0	1,843	1,237	104	13	SUEZ
CARRIÈRES-SUR-SEINE*	18,152	3,447	1,074	1,209	154	11	SUEZ
SAINT-THIBAUT-DES VIGNES*	21,588	0	7,658	4,566	437	86	SUEZ
SARCELLES*	38,790	36,149	7,294	6,477	949	48	SAREN (Véolia)
MASSY	879	0	0	0	28	0	SUEZ
RUNGIS	10,424	0	0	0	107	12	RIVED (EX-SIEVD)
VILLEJUST	478	0	0	0	5	0	SUEZ
EMERGENCY CENTRES	882	0	0	0	0	0	
<b>TOTAL PRIVATE CENTRES</b>	<b>137,115</b>	<b>41,300</b>	<b>28,409</b>	<b>22,548</b>	<b>2,379</b>	<b>200</b>	
<b>TOTAL</b>	<b>1,867,237**</b>	<b>2,708,062</b>	<b>146,419</b>	<b>321,551</b>	<b>34,665</b>	<b>2,833</b>	

\* For external HWIPs, the tonnage given corresponds with the tonnage incinerated on Syctom's behalf.

\*\* This tonnage includes actually incinerated waste, excluding pit level variations in Syctom's HWIPs.

# Control of air emissions of Syctom's incineration centres with energy recovery



	NATURE OF DISCHARGES								
	Concentrations in mg/Nm <sup>3</sup> at 11% of O <sub>2</sub>								
	Particles	Hydrochloric acid	Hydrofluoric acid	Sulphur dioxide	Nitrogen oxide	Cadmium + thallium	Mercury	Antimony + arsenic + lead + chrome + cobalt + copper + manganese + nickel + vanadium	Dioxins and furans (in ng/Nm <sup>3</sup> )**
Maximum emission values applicable since 28 Dec. 2005 Ministerial order of 20 Sept. 2002	10	10	1	50	200 (80)*	0.05	0.05	0.5	0.1
<b>IVRY/PARIS XIII</b>									
March	4.3	0.1	0.04	14	59	0.003	0.005	0.1	0.009
April (Syctom)	4.2	1.5	0.02	22	47	0.004	0.001	0.15	0.011
September	1	0.6	0.06	30	41	0.002	0.001	0.09	0.013
October (Syctom)	3.6	5.2	0.19	44	68	0.004	0.001	0.21	0.007
<b>SAINT-OUEN</b>									
April	0.9	0.6	0	6	54	0.001	0.0004	0.08	0.002
August (Syctom)	1.4	1.6	0.01	22	54	0.001	0.002	***	0.039
August	3	1.1	0.02	12	52	0.002	0.003	0.15	0.003
November (Syctom)	1.5	2	0.03	4	56	0.001	0.012	0.14	0.025
<b>ISSÉANE</b>									
February	0.2	1.8	0.004	1.8	25	0.0001	0.001	0.01	0.003
March (Syctom)	2.3	5.2	0.02	2.8	32	0.001	0.002	0.08	0.004
June	0.9	2.9	0.03	8.9	36	0.0005	0.0004	0.02	0.008
July (Syctom)	0.2	2.7	0.04	3.7	25	0.0026	0.001	0.23	0.005
August (unannounced check)	2.2	2	0.01	2.5	31	0.0005	0.008	0.05	0.001
October	1.7	2	0.006	1.6	31	0.0003	0.008	0.03	0.003
November (Syctom)	2.2	2	0.007	2.5	31	0.0005	0.008	0.05	0.001

\* The Ile-de-France region plan for the protection of the atmosphere has set the maximum emission value at 80 mg/Nm<sup>3</sup> (the threshold set by the European directive is 200 mg/Nm<sup>3</sup>). This threshold is reiterated in the authorisation order to operate in Ivry-Paris XIII and Saint-Ouen. At Isséane, the authorisation order issued by the Prefect of Hauts-de-Seine sets the threshold for emission of nitrogen oxides at 70 mg/Nm<sup>3</sup>.

\*\* ng/Nm<sup>3</sup> = nanogram (billionth of a gram) per cubic metre.

\*\*\* data currently being validated

# Waste dumped in storage facilities

in tonnes

**REFIOM SENT TO HWSFS**

VILLEPARISIS (SYCTOM CONTRACT)	
from	
HWIP in Ivry/Paris XIII	15,306
HWIP in Isséane	14,283
HWIP in Saint-Ouen	12,483
<b>TOTAL HWSF</b>	<b>41,957</b>

**INERT WASTE SENT TO IWSFS**

CLAYE-SOUILLY (SYCTOM CONTRACT)	
Rubble from Ivry/Paris XIII waste reception centre	3,447
Rubble from Romainville waste reception centre	1,209
<b>TOTAL</b>	<b>5,688</b>

**CENTRE EXCLUDING SYCTOM CONTRACT**

Rubble from BO private contracts	5,135
Rubble from construction BO contract	25,760
<b>TOTAL</b>	<b>30,895</b>
<b>TOTAL IWSF</b>	<b>36,149</b>

**NON-HAZARDOUS WASTE SENT TO NHWSFS**

BOUQUEVAL (SYCTOM CONTRACT)	
HW from Romainville Centre	24,170
HW from backup centres	2,352
<b>TOTAL</b>	<b>26,521</b>

**CLAYE-SOUILLY (SYCTOM CONTRACT)**

HW from direction contributions	42,652
HW from Romainville Centre	5,883
HW from Isséane energy recovery unit	2,066
HW from backup centres	193
SC rejects and downgraded waste from the sorting centre at Sevran	4,158
<b>TOTAL</b>	<b>54,951</b>
<b>TOTAL NHWSF (Syctom contract)</b>	<b>81,472</b>

REFIOM: Residues from purification of flue gas from household waste incineration  
 HWSF: Hazardous waste storage facility  
 IWSF: Inert waste storage facility  
 NHWSF: Non-hazardous waste storage facility

**NHWSF EXCLUDING SYCTOM CONTRACT**

SC sorting rejects from private contracts to Claye-Souilly	597
SC sorting rejects from private contracts to other NHWSFs	558
Sorting rejects from BO	66,399
Put in NHWSF of private HWIPs	2,690
HW from backup centres	4,312
<b>TOTAL NHWSF (excluding Syctom contract)</b>	<b>74,556</b>

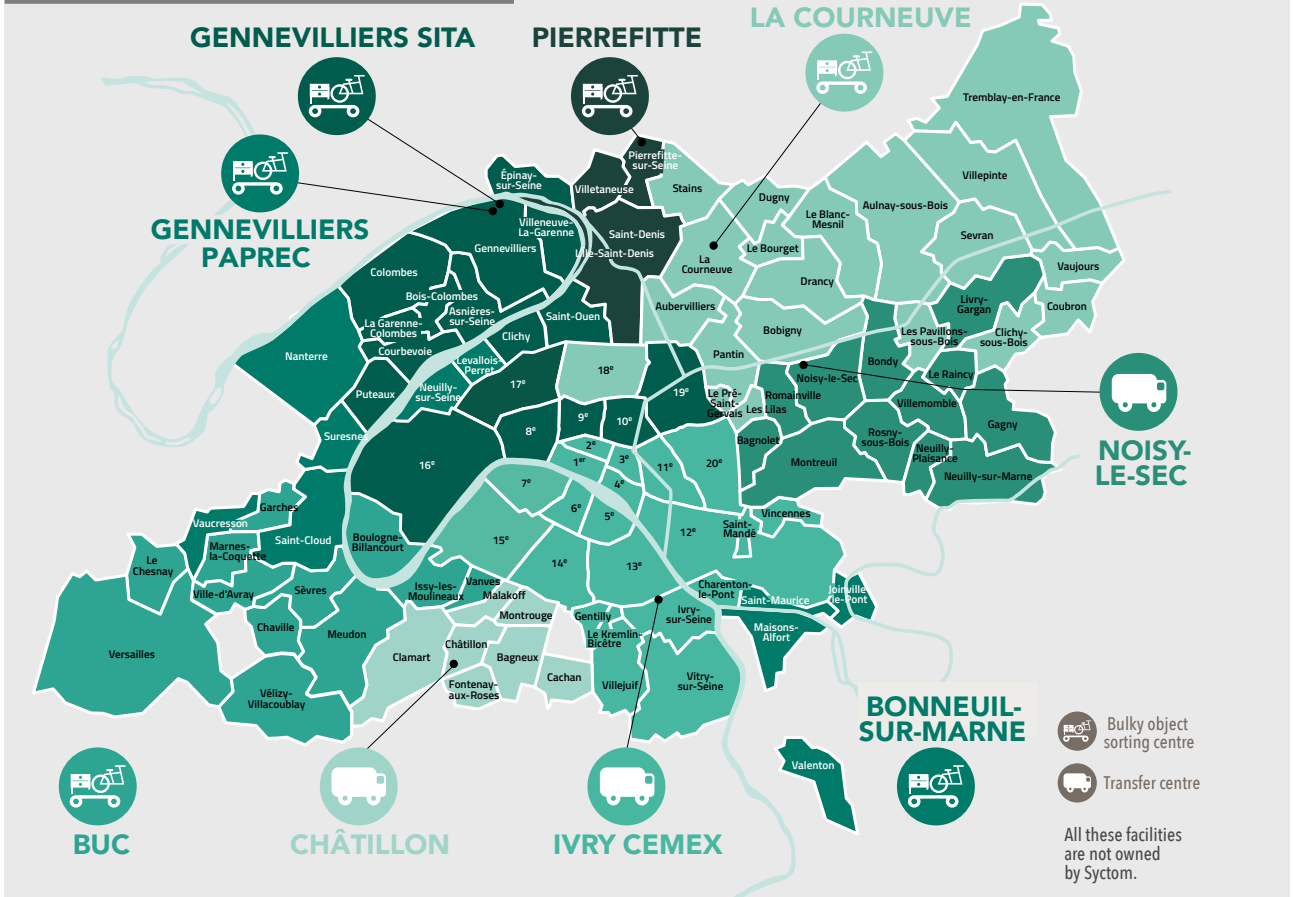
**TOTAL NHWSF** 156,028

**TOTAL WASTE dumped in storage centre** 234,569







These tonnages correspond to waste that is actually sent to storage centres. They do not take stock variations into account.

# Bulky objects

CATCHMENT AREAS JANUARY 2017



## BREAKDOWN OF TONNAGE 2016

 SORTING CENTRES FOR BULKY OBJECTS	 TONNAGES RECEIVED	 TONNAGES RECOVERED	OPERATORS	 SORTING OF CONSTRUCTION BULKY OBJECTS	 TONNAGES RECEIVED	 TONNAGES RECOVERED	OPERATORS
BUC	11,146		NICOLLIN	GENNEVILLIERS	18,725	18,367	PAPREC
GENNEVILLIERS	3,802 <i>3,591 transferred</i>	10,851*	REP	IVRY	10,967	10,648	CEMEX
CHÂTILLON	7,390 <i>6,927 transferred</i>		TAÏS	TOTAL	29,692	29,015	
LA COURNEUVE	47,189	26,526	PAPREC	TOTAL	204,796	125,151	
GENNEVILLIERS SUEZ	27,348	15,393	SUEZ				
GENNEVILLIERS PAPREC	2,449	1,430	PAPREC				
NOISY REVIVAL	32,534 <i>31,537 transferred</i>		DRT				
PIERREFITTE	5,746	22,239*	CDIF				
IVRY	448 <i>448 transferred</i>		DERICHEBOURG				
IVRY CEMEX	29,941 <i>29,941 transferred</i>	19,697*	CEMEX				
BONNEUIL	7,110		TAIS				
TOTAL	175,104	96,136					

\* Recovered tonnages come from bulky objects as direct contributions and as transfers from other sites



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